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With 37 Illustrations

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In the Realm of the Sons of the Sun

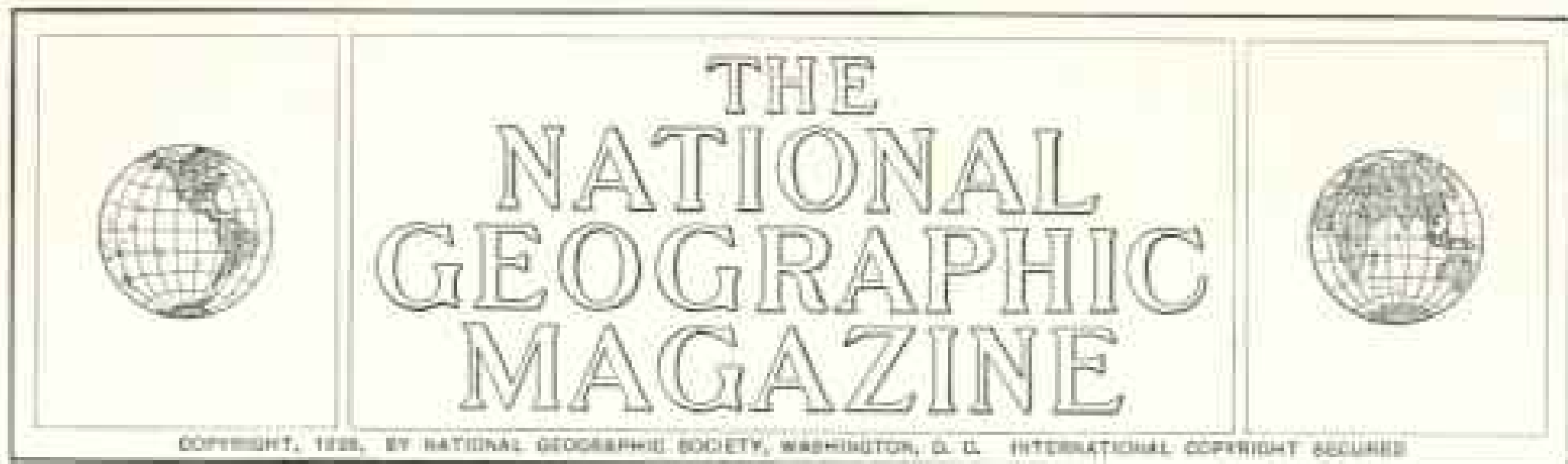
10 Paintings

H. M. HERGET

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CASTLES AND PROGRESS IN PORTUGAL

BY W. ROBERT MOORE

With Illustrations from Photographs by the Author

"SPAIN?" inquired a French journalist, significantly fingering a shattered spot on the windshield when my car had been swung onto the Bordeaux dock.

"No; Portugal."

He seemed disappointed when I explained that the damage had been caused by a flying rock fragment on a new road rather than by a revolution. No story that.

But it was. While communications were being disrupted by civil strife in Spain, next door, I found Portugal quietly building and repairing highways. As radio and press reports told of the siege of Madrid, Portuguese workmen were fitting stones of reconstruction into Golden Age monuments.

IN THE EMPIRE ERA

Four centuries ago Portugal changed the map of the world by her epochal achievements in discovery. The vast wealth that poured into her treasury did much to shape the course of European affairs.

No unsupported bombast was the title assumed by the monarchs: "King, by the grace of God, of Portugal and of the Algarves, both on this side of the sea and beyond in Africa, Lord of Guinea and of Conquest, Navigation, and Commerce of Ethiopia, Arabia, Persia, and India."

Then, too, there were the Azores, Madeira, and gigantic Brazil, whose riches proved even greater and more permanent than the commerce Portugal pioneered in the Far East.

But lean years came. Energetic Netherlands traders captured many of the Orient's

markets; Indian monopolies vanished; Brazil waxed strong and became independent. Wars, internal confusion, and improvident rulers contributed further to her decline. During the last century Portugal has seen much of economic depression.

In the past ten years, however, new life has stirred in this historic nation. Though less spectacular than sailing the seas in search of the mysteries of Africa or the wealth of the Indies, Portugal's program of rehabilitation has been scarcely less impressive.

Today new foundations have been laid in the *Estado Novo*, or New State. Portugal has been able to maintain a balanced budget. Ports, roads, municipal corporations, civic welfare, schools, and public enterprise have felt the quickened pulse beat of the new order.

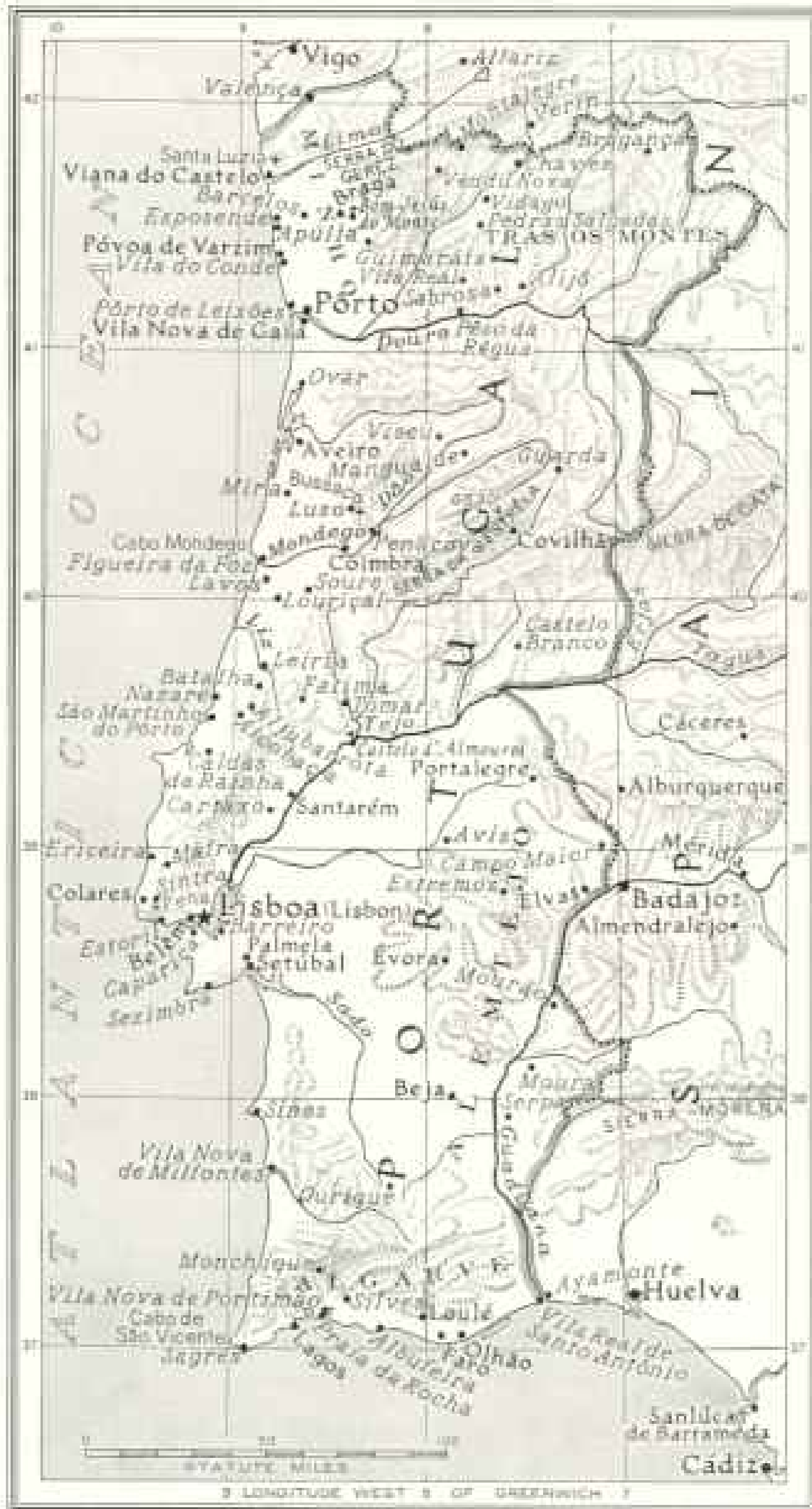
Modernistic apartment houses are rising even on Lisbon's "revolution hill"!

ROADS REPLACE CART TRAILS

During my visit in October and November I motored nearly 3,000 miles over the network of roads that spread the length and breadth of the country.

A few years ago many were hardly more than marks left by the ancient, wayward wanderings of itinerant oxcarts, and were alternately deep with mud or choked with pallid dust. Now they have surfaces of gravel or stone (page 164).

Side-stepping mules and lumbering oxen are still the chief hazards to fenders in rural districts, but the motorist who blithely swerves round a corner without giving warn-



Drawn by Ralph E. McAber

TRADITION, RATHER THAN RUGGED BARRIERS, SEPARATES
PEACEFUL PORTUGAL FROM TURBULENT SPAIN

ing may hit something harder. For there are buses, and an increasing number of trucks.

Passenger vehicles now operate on more than 5,000 miles of major highways—this in a country only 350 miles long and 125 miles wide. In recent years they have carried enough people to approximate two rides

yearly for each of the 7,260,000 inhabitants.

Walking, however, is by no means a lost art. Seeing women, graceful as Greek goddesses, with heavy water jars or baskets of produce perched on their heads emphasizes that fact (Plate VII and page 147). Most market-going peasants still ride flop-eared donkeys rather than "flivvers."

Although progressive innovations increase, traditional customs and Old World scenes prevail. To me, a visit to Portugal savors of a pleasant interview with the gracious occupants of a historic family manor.

THE APPROACH TO LISBON

As our ship steamed into the Tagus River (Tejo) at dawn, I had the feeling of moving along a hallway filled with treasured heirlooms.

On our port, a slender ray of sunshine, piercing a cloud, sought out the quaint waterside Tower of Belém—half Moorish, half ornate Manueline in design—which stands as a symbol of Portugal's early ventures beyond the seas.

A short distance beyond reared the dome and white stalagmitic spires of the old Monastery of Jeronimos, an artistic crystallization of the country's Golden Age opulence (page 138).

There, in a tiny mariner's chapel that formerly occupied the site, Vasco da Gama and his crew said prayers the night before they hoisted sail to beat around the Cape of Good Hope and blaze the sea trail to India. There, beneath lofty arches in one of the transepts, his body now rests.*

* See "Pathfinder of the East," THE NATIONAL GEOGRAPHIC MAGAZINE, November, 1927.



CROWDS FORMERLY THROGGED "ROLLING-MOTION SQUARE," STILL CENTER OF LISBON LIFE, TO SEE BULLFIGHTS AND EXECUTIONS

This spacious plaza, officially called Praça de Dom Pedro IV, was dubbed by English sailors "Rolling-Motion Square" because of the wavy pattern that once covered its pavement (page 136). Most of this has been removed except around the statue of Dom Pedro (center), the Portuguese prince who became, in 1822, the first emperor of independent Brazil. At the far end of the square is the National Theater.

Another of Portugal's heroes also shares that quiet: Luis de Camoëns (Camões) whose epic poem, *The Lusiads*, sang of the doughty Vasco.

High on the opposite hills loomed the remains of old forts and crumbling castles, appearing like faded paintings through the morning haze.

At the end of a seven-mile-long corridor the Tagus broadens into a wide marine anteroom. Greeks, Phoenicians, Romans, Moors, and visionary Crusaders, as well as hardy Portuguese navigators, have anchored their ships along its shores. Here have come rich argosies, bearing spices, silks, and porcelains from the East, and gold from Brazil.

From these waters, in 1588, when Portu-

gal was a vassal of Spain, sailed the Invincible Armada to suffer defeat by British force and raging storms. Some of the boats that ride there today, like the craft that came to the Tagus of old, have upturned Phoenician prows or the sloping lateen sail of Arab dhows* (Color Plate I and page 145).

As we swung into the lakelike estuary, a freshening breeze conspired with the mounting sun to sweep away the obscuring fog from Lisbon, as if a curtain had been suddenly drawn aside.

"How like a fancy birthday cake!" com-

* See "Ships, from Dugouts to Dreadnoughts," by Captain Dudley W. Knox, in *THE NATIONAL GEOGRAPHIC MAGAZINE*, January, 1938, and accompanying ship etchings by Norman Wilkinson.

mented someone beside me at the rail, as the sun gleamed on the gray, pink, blue, and white walls, topped by red tile, that crown the hills and cascade down the slopes.

LISBON NEAREST CONTINENTAL CAPITAL TO WASHINGTON, D. C.

Lisbon, or Lisboa, as it is locally called, is the nearest continental capital to Washington, D. C. It is approximately the same size and lies at almost exactly the same parallel as our National Capital. Instead of a "city of magnificent distances," however, Lisbon is a city of magnificent hills.*

This five-mile multihued panorama of cliff terraces rearing above the Tagus invites comparison with Naples and Istanbul. As background it lacks a Vesuvius or the spearpoints of minarets; yet it still achieves the spectacular with its bright buildings, sprawling palaces, subtropical gardens, and old fort.

Between the somber battlements of St. George, once a Moorish stronghold, and the modern wharves more than eight centuries of visible history are spread in impressive array.

Many other centuries, dating back to Phoenician and Roman occupation, have been covered by its growth.

A CITY OF STEEP HILLS

Once ashore, we gain new perspective of the city's hills. Instead of the single curved range that appears from the harbor, there are several separate eminences. Lisbon spreads over more hills than did ancient Rome. And they are steeper. Venture away from the Praça do Commercio, the Rocio (Rossio), and the long Avenida da Liberdade, which cleaves the city in half, and one must climb (page 139).

Motorcars take circuitous routes, and even then often have to growl up in low gear. Tramways and cog-wheeled cars run everywhere, but they climb uncanny slopes and twist around unbelievable corners (page 140). On the narrow, precipitous streets men are stationed at each curve with paddles painted red on one side and green on the other to flash stop and go signals, for passing is impossible (Plate III).

Zigzagging flights of stairs provide many

* See, in THE NATIONAL GEOGRAPHIC MAGAZINE, "Lisbon, the City of the Friendly Bay," by Clifford A. Tinker, November, 1922, and "An Altitudinal Journey Through Portugal," by Harriet Chalmers Adams, November, 1927.

short cuts for pedestrians. Down near the Rocio an undecorative but singularly practical elevator lifts passengers to a platform several stories aloft, whence they can walk across a causeway that spans a few roof tops to reach one of the upper levels above the Chiado, chief shopping district (p. 138).

In both the eastern, or older, section of the city and in the newer western district, the streets twist and branch off at every conceivable angle.

Only the Cidade Baixa, or Lower City, possesses straight, parallel thoroughfares. These came after a disastrous earthquake, tidal wave, and fire wrecked and gutted the capital in 1755.

Residents gasped when the Marquis de Pombal, trusted minister of John V and King Joseph, blocked out wide streets back from the spacious water-front square, the Praça do Commercio. Yet, today these streets, which were considered such a flagrant waste of space, have had to be converted into one-way thoroughfares.

"ROLLING-MOTION SQUARE"

Beyond these precise building blocks, and separated from the magnificent wide Avenida da Liberdade by only a short "bottleneck" between the end of the National Theater and the mock-Moorish façade of the railway station, lies the Rocio.

Officially this square is the Praça de Dom Pedro IV—that same Pedro who became the first ruler of independent Brazil as Pedro I—but no one calls it that. Few even look long at his statue; they're too busy keeping an eye on the automobiles and streetcars that surge about the place.

The wavy-patterned paving of black basalt and white limestone, which formerly caused it to be dubbed "Rolling-Motion Square" by sailors on shore leave, has been almost completely removed to lessen congestion by widening the roadway (page 135).

Once this square was a public execution ground and a bull ring. Traditional bull-fights are still a major sport in Lisbon, but now are held in a large red bandbox arena near the northern edge of the city. The bulls are not killed; instead, the fights display superb horsemanship, with a thrilling succession of seemingly miraculous escapes from charging horns.

I met one of Portugal's leading *cava-theiros* on a crowded dance floor of a night club. His gaudy costume, high boots,



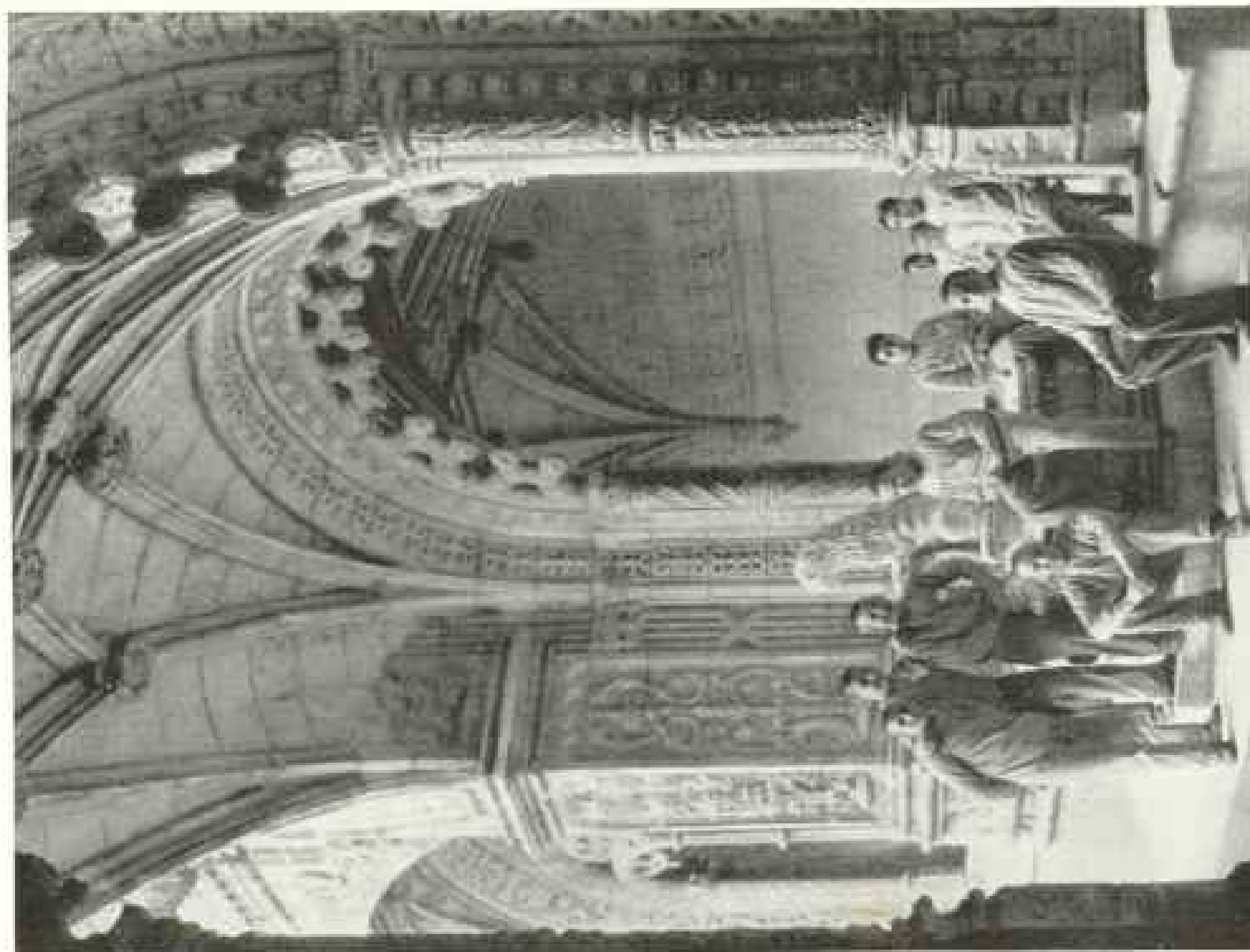
CALM AFTER THE STORM! SAILS DRY IN THE SUN, AND A GRIZZLED OLD MARINER MENDS HIS FISHING TACKLE

Fastening hooks to a line, the barefoot fisherman has his duffel bag beside him, ready for another voyage. Setúbal, nicknamed "St. Ubes" by British sailors, is Portugal's third largest city, with a harbor surpassed only by that of Lisbon (page 182).



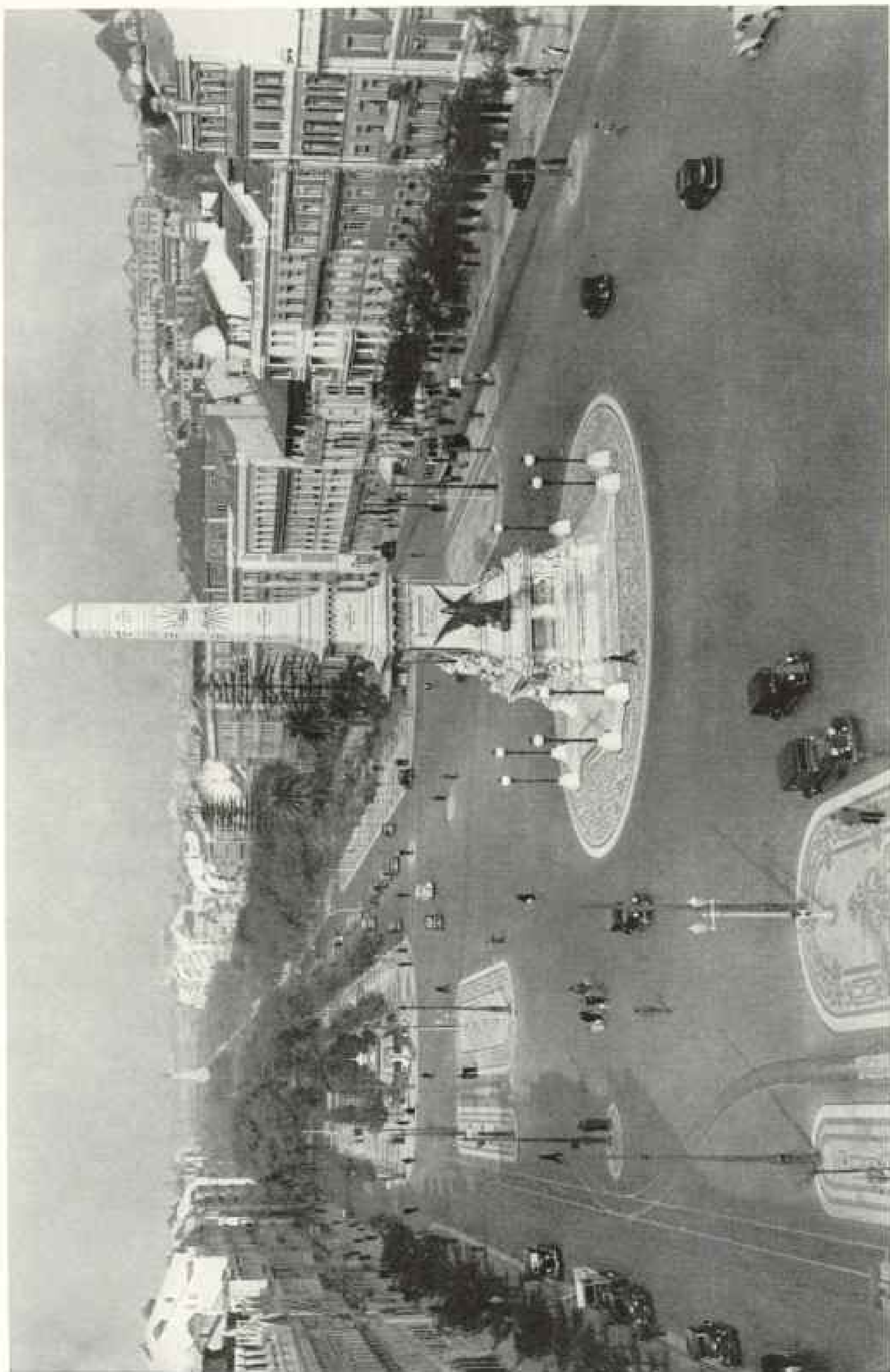
AN OUTDOOR ELEVATOR CONNECTS STREET LEVELS

Pedestrians in the Rua da Santa Justa are lifted by Lisbon's municipal elevator to an iron bridge, where they get out and walk across the roof tops to a shopping district several stories higher than the one they started from. Streets in this lower section have long been identified with different trades (page 136).



ORPHAN BOYS PLAY WHERE VASCO DA GAMA PRAYED

In a seamen's home and chapel established here at Belem by Prince Henry the Navigator, Da Gama and his crew spent the night before sailing for India. In gratitude to the Virgin for the expedition's success, King Manoel I built the magnificent Monastery of Jeronimos, now occupied by an orphan school (page 134).



ALL LISBON LOVES TO STROLL ALONG THE AVENIDA DA LIBERDADE, THE CAPITAL'S GAYEST AND FINEST PROMENADE

On summer evenings, open-air cafés line the two rows of gardens that separate the automobile road (center) from the streetcar tracks. The avenue, 100 yards wide, extends nearly a mile from the Praça dos Restauradores (foreground), named for the leaders who freed Portugal from Spain in 1640.



TRAFFIC HAS ITS UPS AND DOWNS IN THE CITY OF HILLS

Streets in the old eastern section of the capital are often so narrow that they have to be controlled for one-way traffic (Plate III). Lanes for pedestrians become flights of stairs when they ascend the steep hills. The vegetable vender (right) is well to do; he has a donkey to carry his produce from house to house.

cocked hat, and wig had been laid aside in favor of a business suit; yet, almost as we acknowledged introductions he produced an envelope filled with much-handled photographs of himself in action in the arena.

SECOND SHOWS BEGIN AT 11 P. M.

If one expects to see bullfighters or anyone else in a Lisbon night club, one must forego an early bedtime, for at midnight the orchestras there are still serenading the hostesses and themselves.

In my early ignorance, when a Portuguese friend invited me to attend the theater I accepted for the second show. He called for me shortly before eleven! The first show began some time after eight.

Two musical comedies that I attended, however, were well worth the sacrifice of sleep. Both featured spectacular tableaux created from the brilliant folk costumes and historic festivals of northern Portugal.

To me, the charm of the capital comes in its composite whole, rather than from seeking out features receiving guidebook

emphasis. Invariably when I set out to find some "lion," I got lost following diverting attractions. Narrow streets flanked by old houses with gay mosaic tile walls, market places, street peddlers, and children's playgrounds claimed the attention of my camera lens.

More interesting than bronze men on horseback were the men at the cafés. Unlike Paris, café sitting in Lisbon is a man's prerogative. When evening comes the major portion of the masculine population seems to gravitate toward the tables along the Rocio and the lower end of the Avenida da Liberdade. Others group in the street outside windows to read late news flashes that are posted there.

FISHWIVES BAREFOOT BUT BEDECKED

Time and again I returned to the water front to watch the colored sails and gaudily painted hulls of the incoming fishing boats.

Here, too, congregate the fishwives. No single feature of the city is more outstanding than these straight-backed,



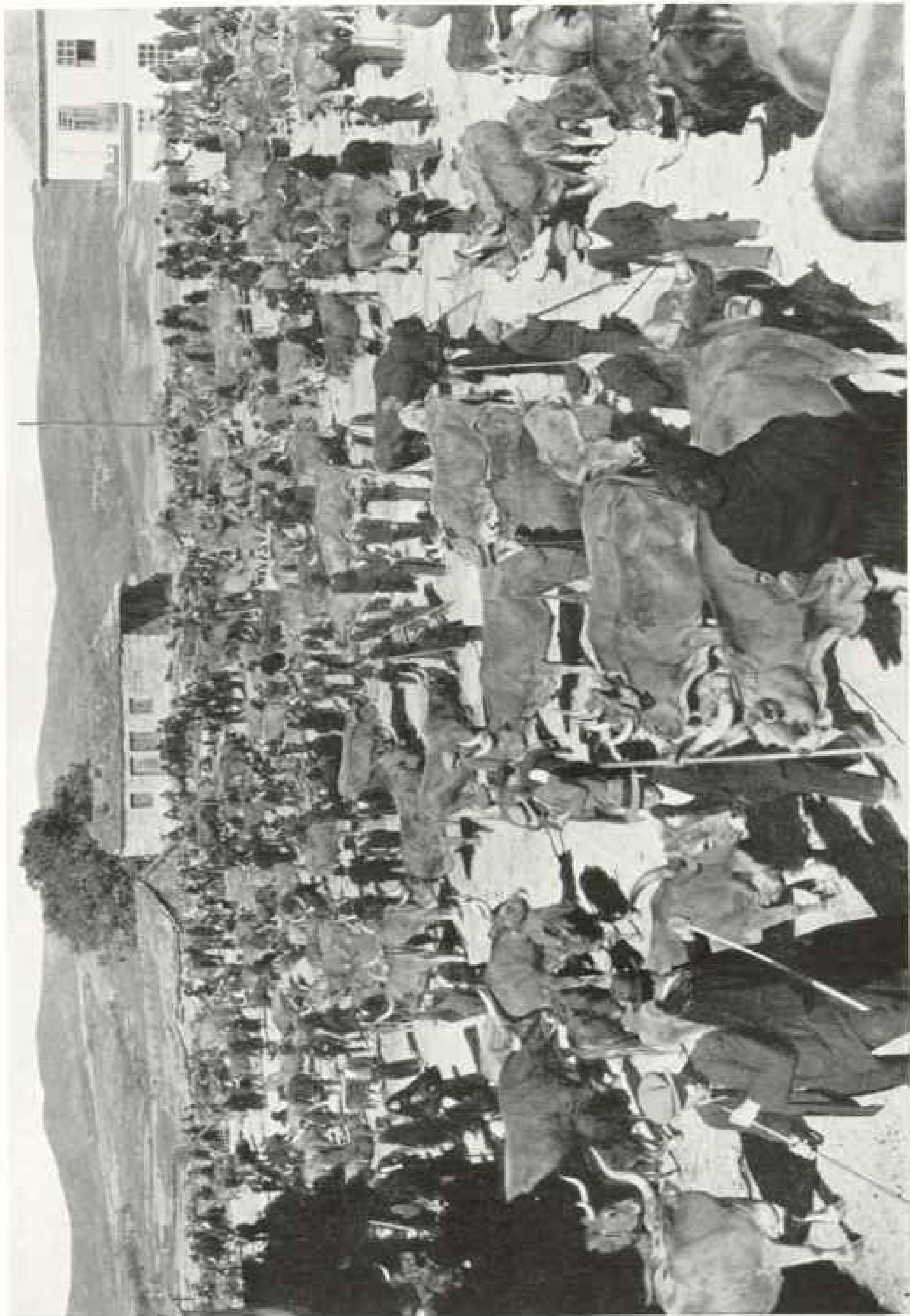
A FEW CENTS BUYS THE WOMEN'S POTTERY; THE BUILDING COST PORTUGAL \$20,000,000

King João V imperiled his country's finances to build the immense convent at Mafra, north of Lisbon, in fulfillment of a vow that if he were blessed with an heir to the throne he would convert his poorest monastery into the richest (page 148). Some 45,000 workmen were employed at one time. There are more than 4,500 doors and windows. Completed in 1735, the building is now a barracks and military school.



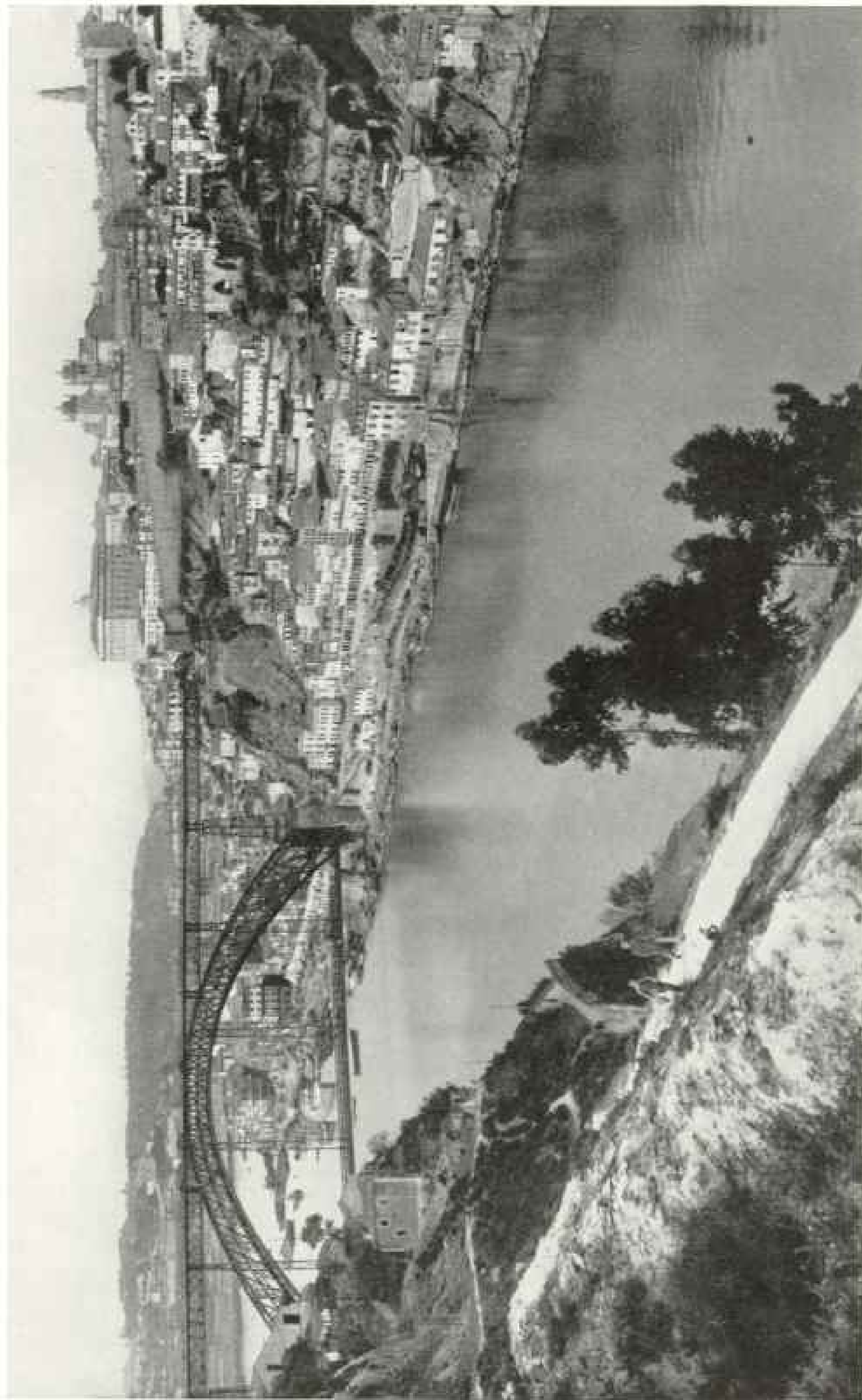
MEN AND OXEN AGAINST THE SEA: "NAZARENES" (PAGE 147) SWING THE BOAT SO CRUSHING WAVES WILL NOT HIT IT BROADSIDE

© Kelam from European



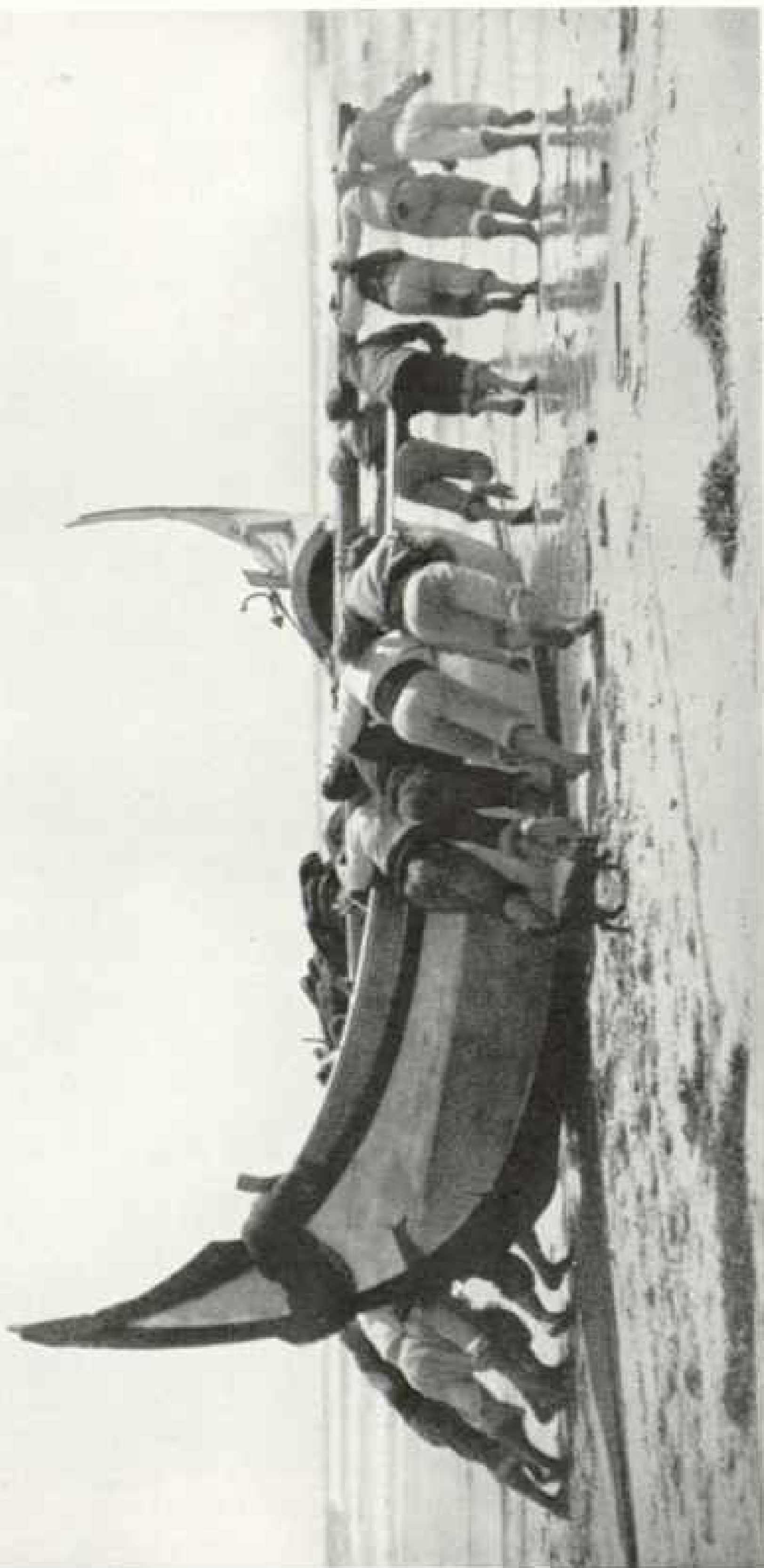
HORNS BRISTLE LIKE SABERS ON A BATTLEFIELD AT MONTALEGUE'S FAIRGROUND

The sleepy village square becomes a teeming market place once a year, when cattlemen with long staves drive their livestock here, and countryfolk gather (page 161).



LIKE MAN-MADE PALISADES, PÓRTO, THE WINE CITY, CLIMBS THE SIDES OF THE DOURO'S ROCKY GORGE

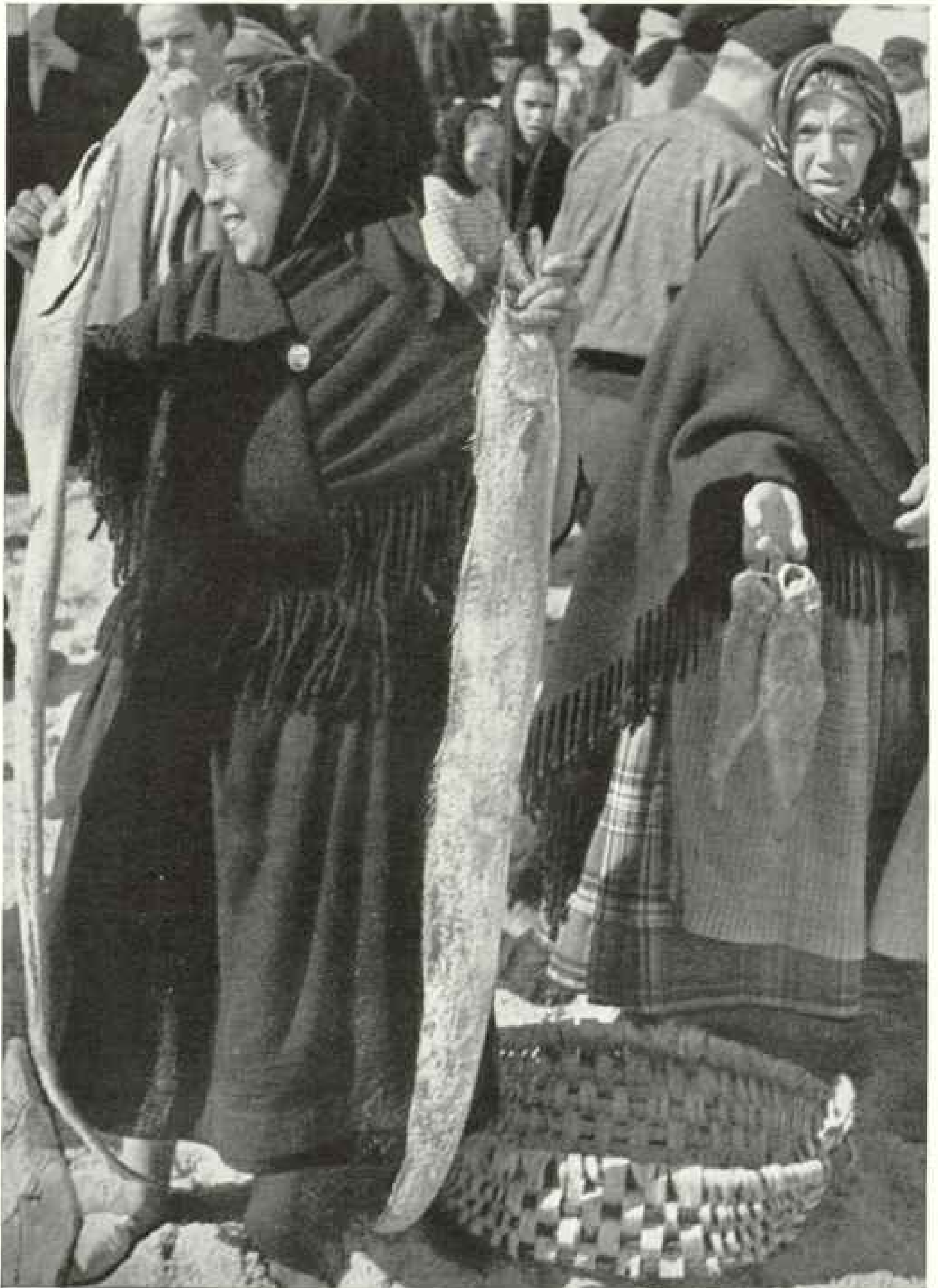
In its suburb of Vila Nova de Gaia, on the left bank, are the wine lodges where port is stored before it is shipped (page 148). Much of the trade is handled by British firms which have been in business here more than two centuries. Near the end of the double-decked bridge stand Porto's 560-year-old city walls (right). Beyond rise the two towers of the Cathedral and the isolated Tower of the Clergy, a familiar landmark to travelers arriving by sea at the mouth of the Douro.



Photograph by João de Freitas Martins

TOES DIG IN THE SAND AND HUSKY BODIES HEAVE FORWARD AS FISHERMEN LAUNCH THEIR HALF-MOON BOAT

To shove the craft down the beach and into the surf, they put their shoulders against a long pole lashed across it. Crescent-shaped boats of Caparica supply the Lisbon fish market. With upcurving prows to cleave the heavy surf, they are painted rose and brown, or white and blue, and some have a huge pair of eyes depicted on the bows. These "look" for fish and also protect the sailors from the "evil eye" (Plate I and page 169).



Photograph by Georg Reiner from Pix

CAMERA-SHY, SHE SHOWS HER BIG FISH, BUT THE SUN GETS IN HER EYES

Women of Nazaré live in dread of losing husbands and sweethearts in Atlantic storms. Ten fishermen were drowned one night during the photographer's visit. Fish caught by these villagers are carried by the women to inland towns several miles distant. The elderly woman at the right wears a skirt of bold plaid, such as the men use for shirts and trousers.

strong-necked women who peddle fish about the town. Many are attractive; most of them are striking with their bright clothes and even brighter head kerchiefs fastened to the back of their hair; and all carry their heavy baskets on their heads with unsurpassed grace (Plate VII and page 183).

A few years ago a regulation was put into effect requiring them to wear shoes. But police were lenient. Toes that had never known the confinement of shoes could get very tired hiking Lisbon's hills all day. So, more often than not, the shoes rode atop the basket of fish. Apparently both the law and the shoes are still considered too severe, for in the pictures I took three out of four fish-women were bare-foot.

To study faces in Lisbon is to review the many cross currents of historical settlement and conquest of this ancient port. In their features are etched the characteristics of Celts, Phoenicians, Moors, Spanish, and even traces of early negro slaves.

While many types are discernible, the majority combine something of all the peoples that have taken part in the successive stages of the city's growth. In rural Portugal this mingling of races is less marked.

The Portuguese language, like the blood



Photograph by Gouge Reinher from Pia

A JOLLY "NAZARENE" BRINGS BASKETS TO MARKET

The little fishing village of Nazaré nestles under a high cliff where stands the popular pilgrimage shrine of Our Lady of Nazareth. The chapel was erected by an old-time knight who, legend says, was miraculously saved here by the Virgin. While he was chasing a stag, his horse suddenly bolted toward the precipice, but halted on the very brink when the cavalier called on Our Lady for help.

stream, is the result of centuries of hybridization.

With a knowledge of Spanish one can make fair progress at reading a newspaper, except for the words that were imported along with the wealth that her merchant explorers brought back from beyond the seas. But in conversation, the understanding of Portuguese pronunciation becomes a more serious problem. Spanish and French, and, to a less degree, English and German, are spoken by the educated.

In railway stations Lisbon is probably unique. The trains from the north come in through a tunnel, yet one has to go *upstairs*, not down, to get to the cars. The railway station for the south has not even trains! Passengers leave by ferry, which takes them across the Tagus to the trains at Barreiro.

Only the station at Cais do Sodré, from which depart electric cars for Estoril and other resort towns on the Portuguese "Riviera," follows the conventional idea.

This latter station is popular for vacationists who go to swim and suntan on that sunny strip of subtropical coastline.

The motor road along the river is even more popular, so much so that the State is planning a wide shore drive. Its landscaping is to include the removal of the gasworks that sends billowing smudges over Belém and the Monastery of Jeronimos, now an orphanage (pages 134 and 138).

During the summer months, thousands of Lisbon's population move out to the beaches, some of the business men commuting back and forth daily. Many Spanish also used to holiday here. In winter, when fog and cold grip the British Isles, numbers of English come down to enjoy the blue skies and gladdening sun.

Not many miles from Estoril is the rocky hill of Pena, topped by a Germanic gingerbread castle that was built in 1840 for Prince Ferdinand of Saxe-Coburg and Gotha, consort of Maria II. The rooms from which Manoel fled on October 4, 1910, have been kept in their original state.

From the castle's parapets one can look across to Moorish ramparts on the near-by mountain spur and down upon the roofs of lovely Sintra (or Cintra).

SINTRIA'S "GLORIOUS EDEN"

"To leave out Sintra in seeing the world is no better than traveling blindfolded," declares a local proverb.

Byron, Southey, and Hans Christian Andersen have sung the praises of Sintra's "Glorious Eden." Many others have also described the strange, conical kitchen chimneys of the old half-Moorish palace and the dining room with its famous magpie ceiling, where each of the birds echoes "Por Bem" (All in Honor)—the only remark that the confused Dom João I had to offer when haughty Queen Philippa caught him kissing a maid of honor while presenting a rose (pages 157 and 181).

Although those 136 magpies may twit that first João of his indiscretion, the massive Convent at Mafra, 10 miles to the north, accuses a later João of even greater folly.

João V vowed that if he were blessed with an heir to the throne he would convert his poorest monastery into the most magnificent. The heir came, and the proud father lavished the equivalent of \$20,000,000 on a convent which possesses more than 4,500 doors and windows.

Its erection, it is said, extended over 15 years, even though at one time as many as 45,000 men were employed (page 141).

This immense structure is now used in part as a barracks and military school. But, in its present state of disrepair, it looks melancholy indeed—a melancholy heightened by the realization that its stupendous cost did much to hasten the financial collapse of the Nation.

The glittering array of gilded coaches that belonged to this and other monarchs, which we see upon our return to Belém, further emphasizes the royal grandeur that persisted long after the golden streams from India and Brazil had ceased to flow.

PÓRTO AND THE WINE HARVEST PROVIDE THRILLS

From Lisbon we went north to see Pôrto and the wine harvest. Already the grapes had been picked from the Colares and other vineyards in central Portugal. But in the port-wine fields of the Douro Valley and the mountain districts the vintage was still in progress. So we hurried there.

The approach to Pôrto provides a visual thrill. Like Lisbon, it rises on sharp hills above the river. Its variegated maze of buildings so crowds the precipitous bluffs that there seems scarcely room for streets or even alleys.

The Douro, however, as it sweeps past the city is confined within a deep, narrow gorge (page 144).

Two bridges span this bold, river-hewn canyon. One carries the railway, the other vehicular traffic. Both are long single-arch spans, but the latter, in addition to having a roadway running across its summit, supports a second thoroughfare which hangs far below the arch to connect the two banks at a level not far above the water.

A sand bar blocks the river mouth, so that ocean traffic is handled at the modern Port of Leixões, a few miles distant. Still, as you motor across the upper level of the

COLOR CLOSE-UPS OF EUROPE'S CORNER LAND



© National Geographic Society

Finlay Photograph by W. Robert Moore

FISHERMEN MOOR THEIR PAINTED BOAT IN LISBON'S "FRIENDLY BAY"

Phoenician seafarers of 3,000 years ago gave this name to the spacious harbor on the Tagus River, where now lies the Portuguese capital. The many-oared galleys in which these pioneer traders sailed here from the Mediterranean helped set the style for present-day craft such as the *José Jacinto*, whose upturned prow is garlanded with flowers and crowned by a pair of goat horns. Like Chinese junks Portuguese boats sometimes have two huge eyes painted on the bows so the vessel may find fish!



© National Geographic Society

Today Photograph by W. Robert Moore

TERRACED ON ELEVEN HILLS ABOVE HER FAMED BLUE BAY, TILE-ROOFED LISBON IS EUROPE'S WESTERNMOST CAPITAL.

Toward the historic water front, oarsmen row a fishing boat with the sloping lateen sail of an Arab dhow. Steamers lie at modern docks along the river where, in 1499, crowds welcomed Vasco da Gama, returning from his discovery of the sea route to India. From this port, in 1588, Spain's Armada sailed to England and destruction. During Portugal's golden age, in the 16th century, Lisbon flourished as the metropolis of a vast empire in Africa, Asia, and South America. Today, with Angola, Mozambique, and other possessions, the small country still ranks high among colonial powers.



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"STOP!" SIGNALS A LISBON TRAFFIC DIRECTOR

With his paddle, red on one side and green on the other, he keeps streetcars and automobiles from meeting head on in thoroughfares that are too narrow and tortuous for two-way traffic. Elevators and inclined railways connect street levels in the hilly capital.



Fishy Photographs by W. Robert Moore

GAY HARNESS AND CAPACIOUS FEED BAGS ARE THE FASHION

Bells, tassels, gaudy blinders, and a high, carved collar bedeck the horse, which has just brought farm produce in a painted cart to the market at Olhão (Plate V). Fruit trees flourish in Portugal's warm southern Province of Algarve, popularly known as "the land of the fig."



ÉVORA'S "ROMAN" AQUEDUCT IS NOT FOUR CENTURIES OLD

Its nine miles of mellow, lofty arches were long thought to date from the days when Rome had a stronghold here. Built about 1550, the aqueduct probably follows the line of an ancient structure.



© National Geographic Society

Finlay Photographs by W. Robert Moore

THESE PIGS WENT TO MARKET SCRUBBED AND BRUSHED

Their young mistress groomed them for the annual autumn sales at Montalegre, high in the hills of Trás-os-Montes Province near the Spanish frontier.

COLOR CLOSE-UPS OF EUROPE'S CORNER LAND



FROM ALL OVER THE PORTUGUESE-SPEAKING WORLD COME STUDENTS TO COIMBRA. At the 646-year-old university, whose clock tower crowns the hill, undergraduates wear black frock coats and flowing capes. Below, between trees, gleams the Mondego River.

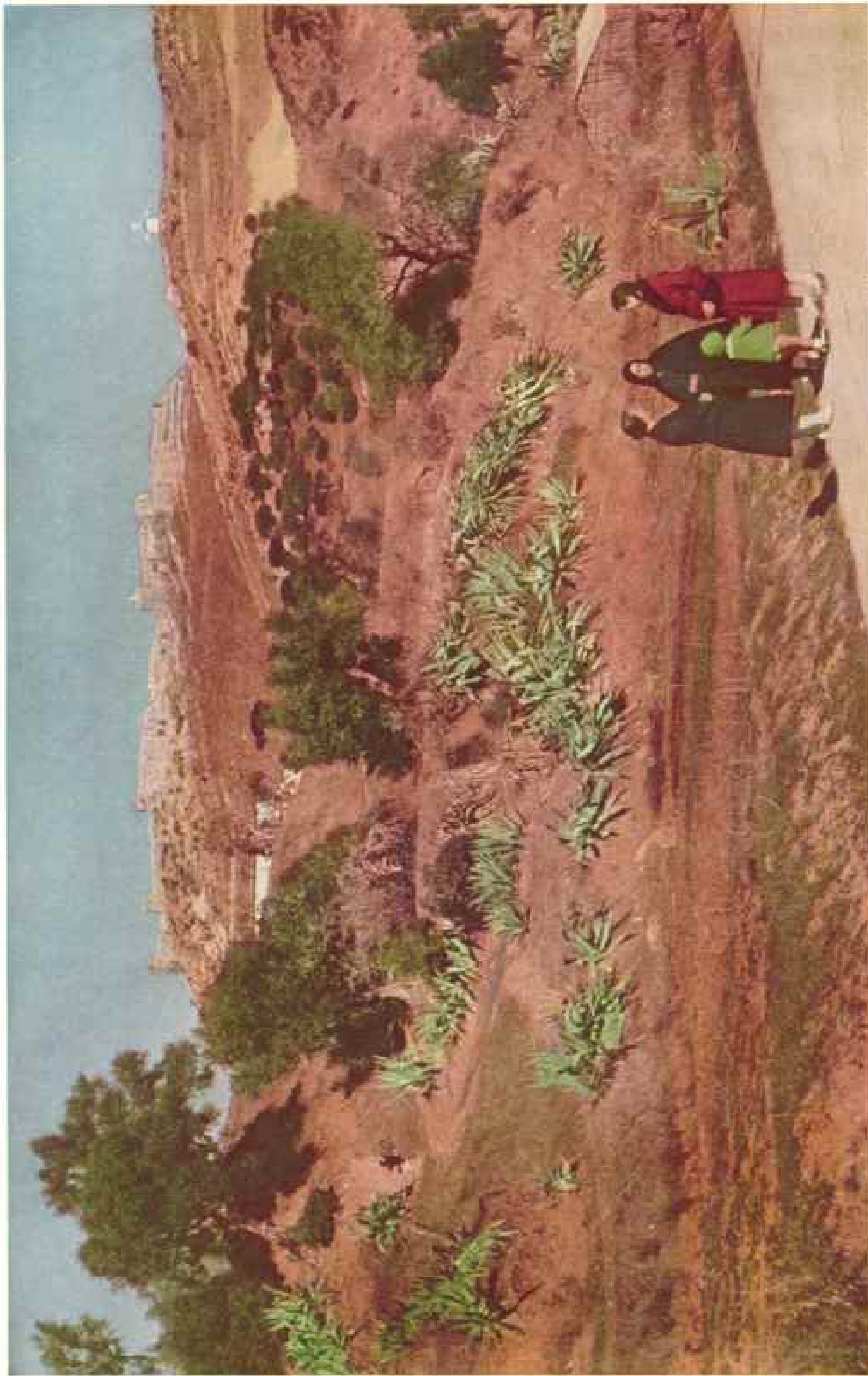


© National Geographic Society

Finlay Photographs by W. Robert Moore

VIVID TILES DEPICT THE HEROIC VOYAGE OF THE "SIX MEN OF OLHÃO"

Ceramics in the municipal park show how local fishermen crossed the Atlantic to inform King João VI, fled to Brazil, that Napoleon's armies had been driven out and he could return to Portugal.



© National Geographic Society

Finlay Photograph by W. Robert Moore.

LANCES AND SCIMITARS CLASHED ON THESE TAWNY HILLS WHEN CHRISTIAN KNIGHTS DROVE MOORS FROM PALMELA CASTLE IN 1147

The crumbling stronghold, near Setúbal, once guarded the southern approach to Lisbon, which is visible on a clear day from the heights near the white windmill (right). Afonso Henriques, Portugal's first king, captured Lisbon and expelled the Moors with the help of English Crusaders, whom he persuaded to stop off and fight the local infidels before proceeding to Palestine. Thus began a centuries-old friendship between Portugal and Britain. Later Palmela was given to the Knights of Santiago. Their chapels, like the Mohammedan mosque in the fortress, are now in ruins.



© National Geographic Society

LISBON FISHWIVES LIVE BY THEIR CLEVER HEADWORK

A doughnut-shaped pad called the "mother-in-law" supports the basket. These barefoot women hike up and down steep hills, carrying heavy loads of fish from boats to housewives. When a law was passed requiring them to wear shoes, many placed the footwear on their heads!



Finlay Photographs by W. Robert Moore

CORK OAKS, WHEN "UNCORKED," TURN RED

Skilled axmen of southern Alentejo Province have hacked off the bark, which may take ten years to grow thick enough for another stripping. Sheets are packed in bales for shipment. Wine and cork, foremost among Portugal's exports, travel together in bottles all over the world.



PORTUGAL'S LAST KING GAZED ON THESE HILLS AS HE LEFT HIS COUNTRY FOREVER

Below the windmills, where sea haze meets the bluffs, lies the fishing village of Ericeira. Here King Manoel II departed aboard a yacht when the Republic was proclaimed in 1910. After his death in England in 1932, the exile was accorded honored burial in his native land.



© National Geographic Society

Finlay Photographs by W. Robert Moore

WATER-FRONT TRUCKMEN OF PORTO DECORATE THEIR OXEN'S YOKE INSTEAD OF THE CART

Hand-carved in an intricate openwork design, the huge olive-wood yoke, a family heirloom, is brightly painted and fringed with tufts of hair. The two-wheeled cart resembles those used here by Roman conquerors centuries ago. Motor trucks fast replace these vehicles of northern Portugal.

bridge, you look down upon a curving panorama of busy river trade.

Coal barges, shallow-draft tramp steamers, wine boats, and small sailing craft appear like tiny models, among which midgets are at work.

Twisting around a few sharp bends from the spick-and-span business district, we head down a steeply tilted street and come to the bustling water front. The smells help guide us. Here women stevedores stride along with baskets of coal, fish, vegetables, boxes, bales, and even piles of corrugated-iron roofing on their heads.

Men load and unload trucks and oxcarts. Formerly these carts, drawn by sleek brown oxen with incredibly long horns, were the sole carriers of Pôrto's goods. Now they are being eliminated as rapidly as possible. Within a short time one will have to go into the country to find the high hand-carved and gaudily painted yokes that have so long been a picturesque feature in the city streets (Plate VIII).

Among modern structures, our friendly cicerone pointed out the cathedral where Dom João I, of "Por Bem" fame, and English Philippa of Lancaster were married in 1387, and also the remains of the old palace where their son, Prince Henry the Navigator, was born.

A slab set in the wall down by the water front keeps Pôrto from forgetting that awful day of March 27, 1809, when Napoleon's forces under Marshal Soult cut down many of the civilian townsfolk, while others, escaping in terror, were drowned as a flimsy pontoon bridge over the Douro collapsed under their weight. More than 18,000 perished on that day.

Two months later it was Soult's turn to flee. Sir Arthur Wellesley (later the Duke of Wellington) in a surprise attack set the French legions to rout and then stayed to eat the meal prepared for Soult.

HOW PORTUGAL GOT ITS NAME

As Pôrto measures time, these are but recent events. In ancient days, long before the Moors laid it waste, it was the Roman *Portus Cale*, whence was derived the name Portugal. Pôrto also named the country's chief export—the mellow "port" wine.

At Vila Nova de Gaia, on the southern bank of the river, are numerous *armazens*, or wine lodges, where vast quantities of port and other wines are stored, bottled,

and prepared for shipment. Several of these are long-established English companies, for port wine secured preferential treatment from the British by the Methuen Treaty of 1703.

The port-wine vineyards themselves are nearly a hundred miles up the Spanish-born Douro from Pôrto. Like the Igorot rice fields of the Philippines, they staircase the precipitous mountainsides that tilt up from the twisting course of the river.

So narrow are some of the fields that they can support only a single row of vines. Everywhere stone retaining walls dwarf the areas of cultivable soil.

"Other countries try to copy our port," explained a Pôrto winetaster. "They can't quite do it. The blending, of course, means much. Yet the real secret lies in the right combination of sun, soil, and rain.

"No other country, not even Portugal itself, outside the small district on the Douro, has that combination satisfactory for producing the particular quality of grape required for this wine."

We made the journey up to the town of Pêso da Régua, in the heart of the port district, at night. It was a thrilling "follow the leader" motor drive, with some officials of a Pôrto wine lodge acting as our escorts.

The driver of their car knew the road; mine did not. In the eerie moonlight the route seemed all breakneck curves and breath-taking canyons. Mountains loomed up black against the brighter sky.

THE SPLENDOR OF THE VINEYARDS

Babylon's hanging gardens, I am sure, never surpassed the splendor that met our gaze the next morning. Autumn frosts had already touched the vines. Golds, oranges, and reds, in which greens still mingled, splashed the crumpled hills (Plate XIV).

Many of the fields had already been picked, but in others women were busy at the purple harvest. Queues of men, like some jungle tribe on trek, marched up the narrow hill paths, their tall, heavy baskets of grapes supported by tumplines.

In oxcarts and by muleback the fruit was being taken to the pressing sheds. Along one roadway I saw two youngsters hauling a loaded cart made from the wheels of an old baby carriage.

Out in one of the fields I set up my camera to make a color plate of the women working among the multihued vines.

"Where are those two red skirts I saw a



THEY WALKED FOUR MILES, DID THE FAMILY WASH, AND STILL SMILE!

Returning from the nearest spring, two miles from their home in southern Alentejo Province, the girls pack their basket of clean clothes on the donkey's back. In addition to their household tasks, Portuguese country women do a large share of the farm work (Plate XVI).

moment ago?" I inquired when I was ready to snap the shutter.

"We've all got them," everyone chorused. Several tucked up their skirts immediately, revealing frank red woolen petticoats!

To the pressing vats I trailed the vintage.

"Sorry we left our accordions home," remarked one of the girls in Portuguese as she was washing her feet, preparatory to entering the vat. Music often lightens the loads of the basket-bearers and gives gay rhythm to the treading operations.

PRESSING WINE BY FOOT

Some of the wineries crush the grapes by mechanical means; others still use the age-old foot method.

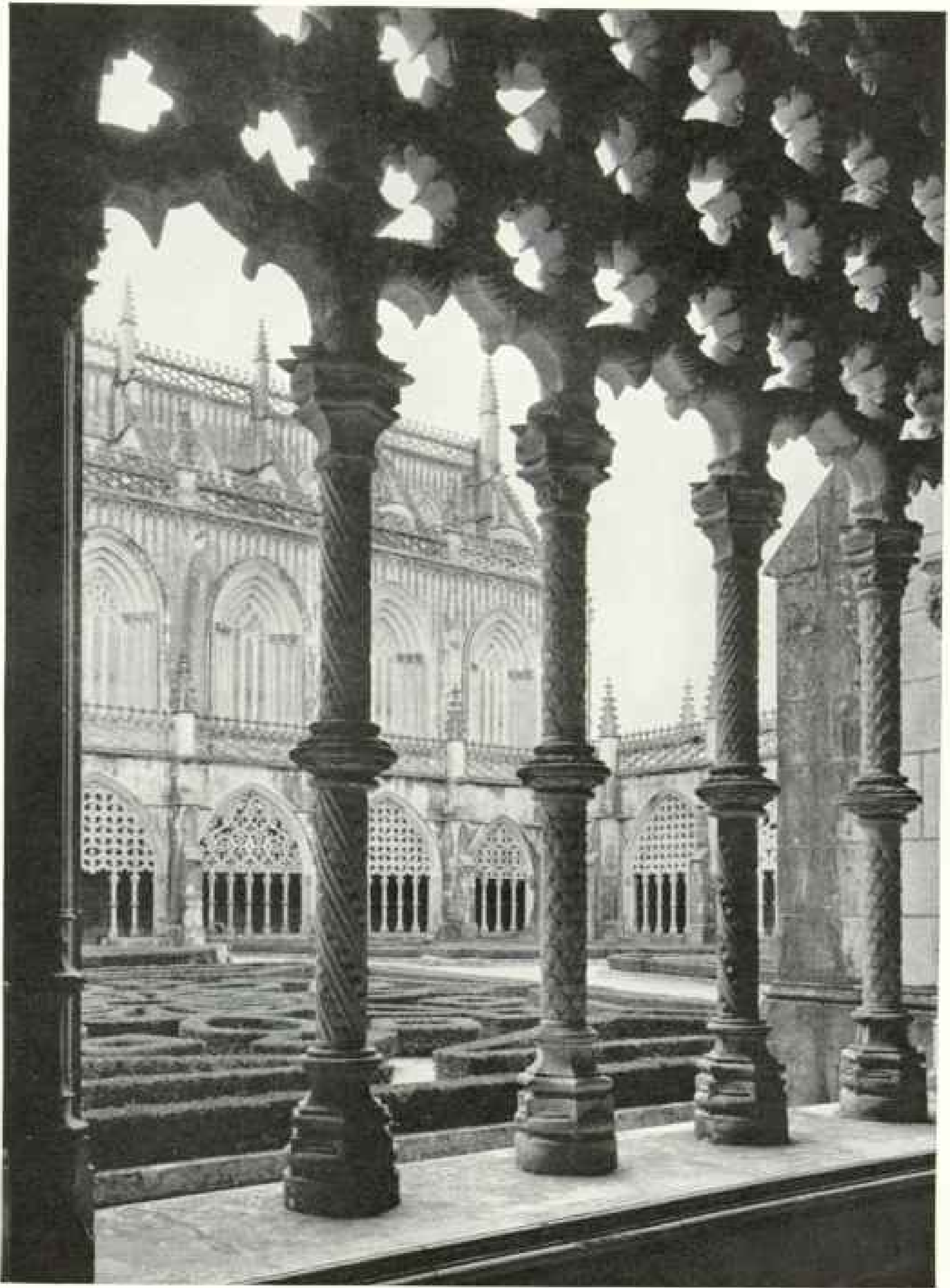
Back and forth over the deep layer of fruit the girls walked and danced, their arms locked about each others' shoulders and the skirts tucked high. Well might

they have been performing some ancient folk dance, rather than work. Gay banter alternated with bursts of song.

Happy people, these peasant Portuguese, even though they may work for only a few cents a day.

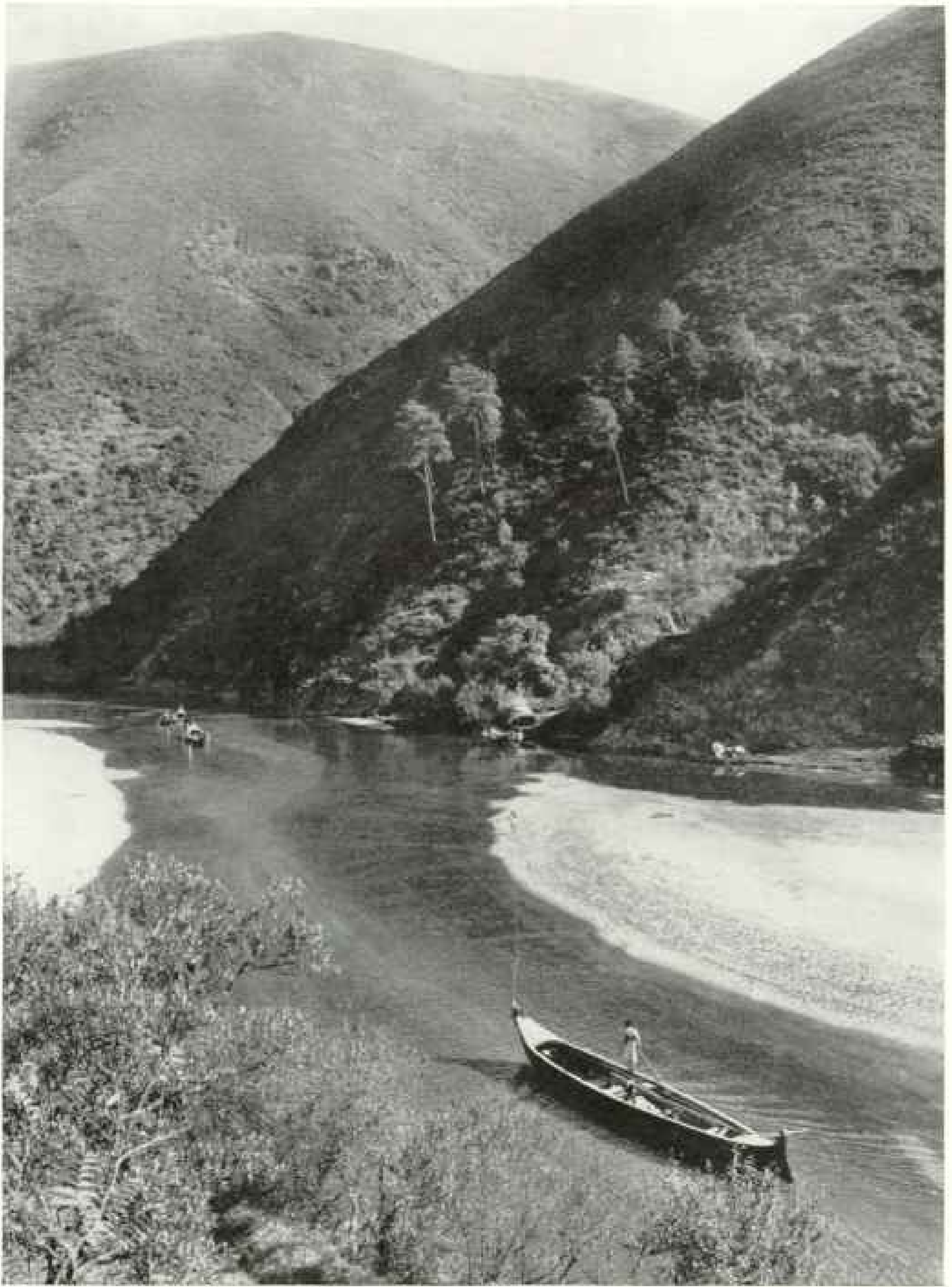
Large presses are used to extract the juice from the pulp. Then the fermentation processes begin. At periods of partial fermentation the young wine is given "doses" of wine brandy to halt the action, so that a portion of the natural sugars is preserved.

Formerly all the wine was floated down the Douro to the Porto warehouses in shallow-draft sailing boats. Railway transport and, to some extent, trucks have partially replaced these old carriers, because, I was told, of the propensity of some boatmen to substitute river water for equivalent quantities of wine they extracted from the barrels.



LACELIKE BATALHA, WITH ITS MAZE OF HEDGES, SYMBOLIZES PORTUGAL'S INDEPENDENCE

Five and a half centuries have mellowed the white limestone of this monumental building, erected by King João I to commemorate his victory over Spanish invaders at near-by Aljubarrota. Here, among the tombs of royalty, are buried Portugal's two Unknown Soldiers, one from the French front, one from Africa.



BOATS BECOME "TRAILERS," WITH HUMAN MOTIVE POWER, UP THE MONDEGO RIVER

When the man harnessed to the towrope reaches the end of the footprint-dotted sand bar, he will wade across and continue pulling along the opposite shore. The narrow, canoe-like boats hoist square sails when the wind is favorable. Two long cords, running up to the bow, control the rudder, enabling the boatman to steer from any part of the craft. On the downstream journey, timber and brushwood are carried to Coimbra and other towns along the Mondego (page 171).



PRE-ROMAN PEOPLE BUILT CIRCULAR HOUSES WITHIN RECTANGULAR WALLS.

Paved streets ran from house to house in this ancient Celtiberian fortress-city, unearthed on Monte Santa Luzia, near Vila do Castelo (page 169). Bits of pottery, beads, broken roof tiles, and pieces of charcoal from the village blacksmith's forge have been found. It took the Romans about 200 years to conquer these natives of Portugal and Spain.

Wines, valued at about \$8,600,000, are Portugal's leading export, of which four-fifths are realized from these port vineyards:

Throughout the hills above Pêso da Régua are other fields of white and purple grapes, from which other wines are produced.

Journeying up through Alijó, through Sabrosa—birthplace of Fernão da Magalhães (Ferdinand Magellan)* who pioneered the first round-the-world cruise—and to Vila Real, we passed among frost-pointed vineyards all the way.

Vila Real, a pretty hill town, is the capital of the Province of Trás os Montes. In this district, meaning Beyond the Mountains, are several mineral springs, whose waters are widely known.

Out in Macau, on the coast of China, I used to buy bottles of mineral water bearing the labels of Pedras Salgadas and Vidago.

Both Chaves and Bragança still possess remains of the days when Rome ruled, as

well as castles of the old Dukes of Bragança, the family which later gave monarchs to Portugal.

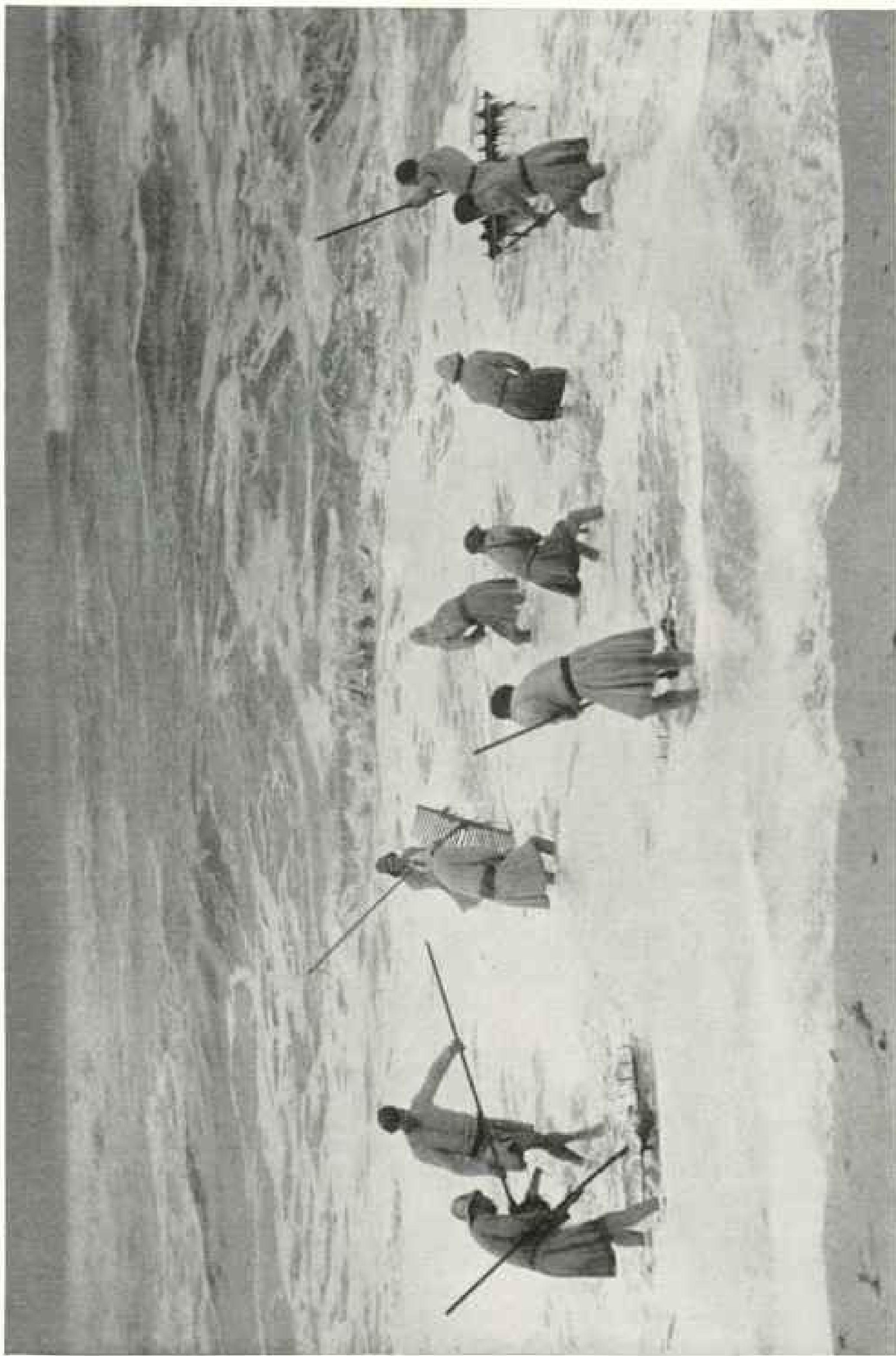
MARKET DAY ONCE A YEAR

Our visit up to the little castle village of Montalegre, northwest of Chaves, coincided with the annual market there. On that one market day in autumn peasants from all over the countryside flocked to the village.

In early morning men, women, and children afoot, on donkeys, by oxcart, and even by bus began streaming in from all directions. Some drove sheep, goats, and pigs; others brought cattle, chickens, vegetables, and other produce. Long before noontime the village square had become a seething mass of horns above tawny bodies (page 143). Pigs and grains filled all available space about the walls of the old castle.

Merchants, selling heavy hobnailed shoes, grass raincoats (page 167), clothes, and gewgaws of the fair, had taken up positions along the crowded streets. Others twisted their way through the throngs with their merchandise draped over their shoulders and perched on their heads.

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



Photograph by Christian de Caillon

WITH WILD, JOYOUS SHOUTS, BARELEGGED "HARVESTERS" RUSH INTO THE SURF TO RAKE UP SEAWEED

When big breakers crush toward them, each man grasps the handle of his huge wooden rake, leaps high out of the water, and sails over the wave like a pole vaulter trying for a record. Swept shoreward by July storms, the masses of greenish-brown kelp are gathered by long-coated men of Apulia and dried on frames for use as fertilizer (Plates XI and XIII). The town's Italian name recalls the days when Rome's legions occupied this coast of northern Portugal. Some of the inhabitants have unmistakable Roman noses!

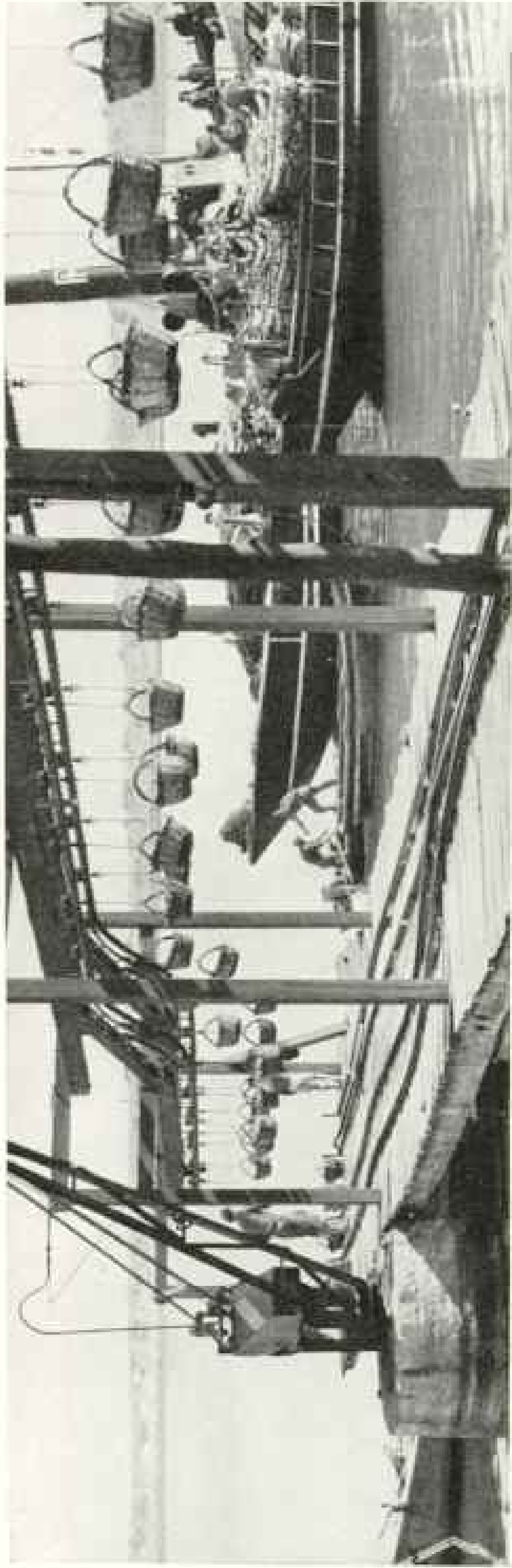


SUNDAY DRIVERS FILL THE ROAD TO TOWN: IT'S MARKET DAY AT CALDAS DA RAINHA (PAGE 143)

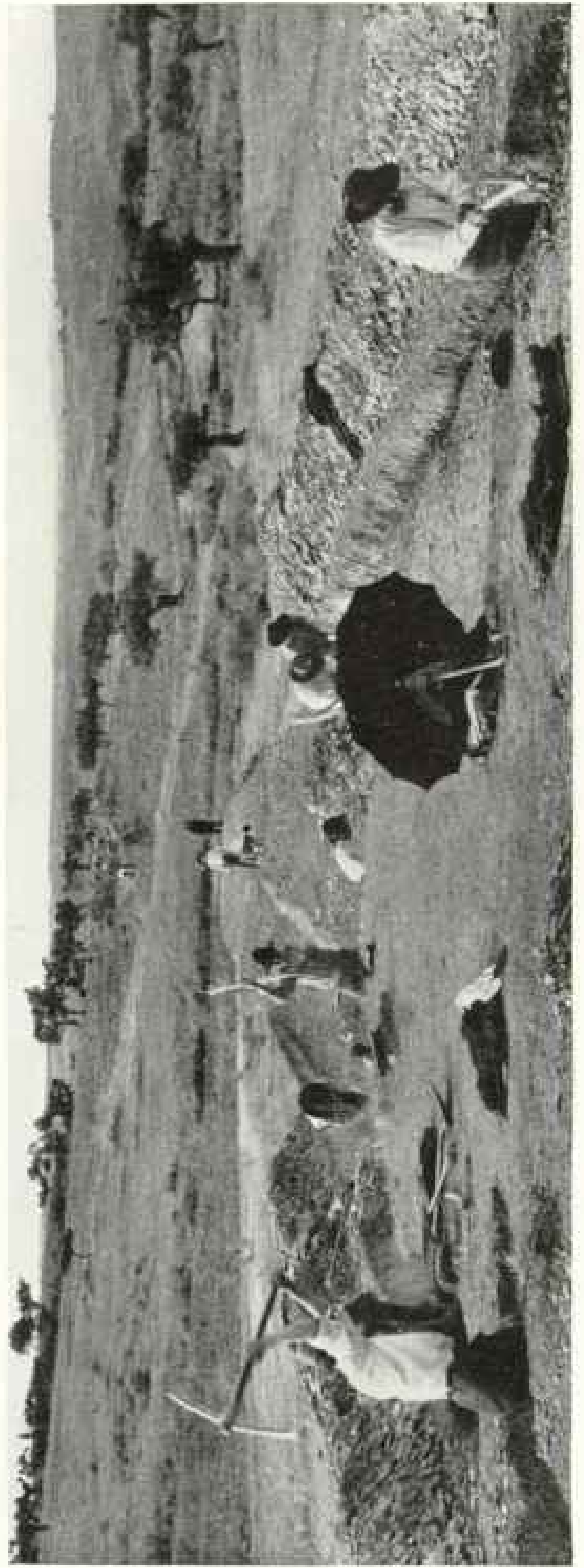


LIKE THREE LITTLE PATES, YOUNG GOATHERDS SPIN AS THEY GUIDE THE DESTINY OF THEIR FLOCK

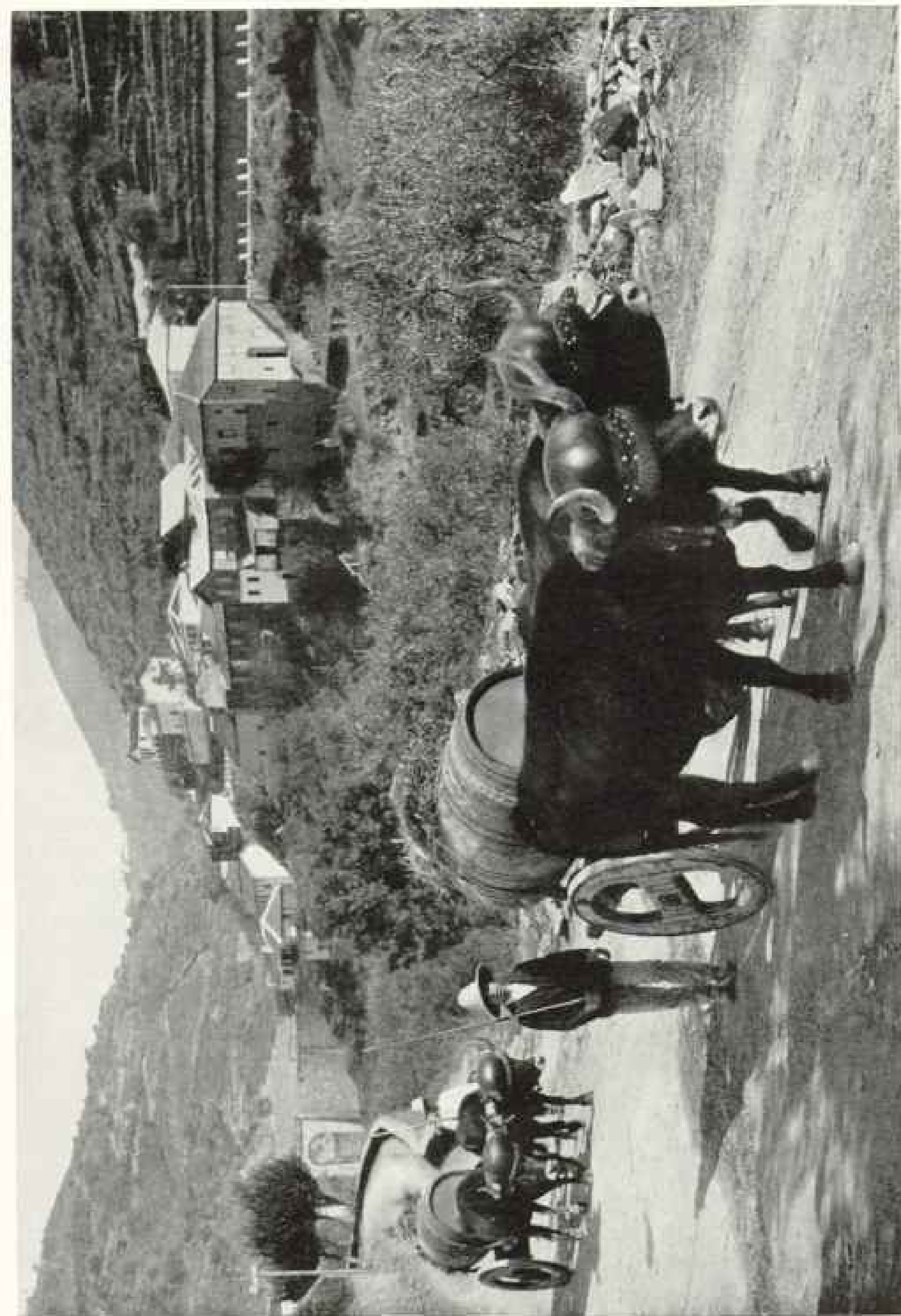
At the May Day festival in near-by Montalegre, each shepherd selects his finest yearling, decorates it with ribbons and flowers, and parades it through village streets.



ON AN ENDLESS CHAIN OF BASKETS SARDINES RIDE FROM BOATS TO CANNERY, TO BE SEALED IN TINS AT VILA NOVA DE FORTIMÃO



PAVING THE WAY FOR AUTOMOBILES, ROAD BUILDERS HELP MODERNIZE PORTUGAL



Photograph by Alvaro

“HERE COMES THE WINE!”—OXEN WITH BELLS AND WATERMELON-SHAPED YOKE PADS PULL CASKS TO RIVER WHARVES

Carted from terraced, hillside vineyards in the “country of the wine” (Plate XIV), the port is loaded onto flat-bottomed boats, with single square sails, which shoot down the rapids of the Douro River to Vila Nova de Gaia, where the wine is stored before being shipped abroad (page 157).



NO LOAFERS LEAN AGAINST THE "HOUSE OF THE BEAKS"

Built four centuries ago by a son of the Portuguese empire-builder Alfonso de Albuquerque, this Lisbon home, studded with pyramidal stones, survived the terrible earthquake of 1755 and serves as a dwelling to this day. A young Juliet peers from the balcony (right), but finds no Romeo.

Restaurants set up business on oxcarts. Even the local prisoners, catching the holiday spirit, sat with arms, legs, and heads protruding from the barred windows of the jail, so that they could greet friends and beg cigarettes (page 170).

On one thoroughfare a concessionist set up a strength-testing machine upon which the local bloods could show their prowess, not by ringing a bell but by exploding dynamite caps. The first explosion set a spirited horse into a mad runaway dash through the crowds. Only by a miracle was no one injured; by inches I succeeded in getting my color camera out of the way of his flying hoofs.

REGION OF OXCARTS AND WOLVES

From Montalegre we motored westward over the rolling plateau, paralleling a deep, winding river gorge beyond which rose the

purpling crests of the Serra do Geréz. Farmers from gray stone villages were busy gathering oxcart loads of gorse and bracken that covered the hillsides.

In winter wolves prowl on these wind-swept uplands, which are but a continuation of the barren lands of Spain.

At a cluster of houses that is *Vendu Nova* we stopped for lunch.

"What would you like to eat?" asked the young lady who came to serve us.

Surprised that the question was spoken in perfect English, I inquired where she had learned the language.

"Oh, I *am* English, American rather," was the reply. "I was born in America—in Connecticut—and lived there until two years ago."

Her father, like many other Portuguese who emigrated to the United States or Brazil, had returned to his native land—a



Photograph by Alvan

TWO-LEGGED PORCUPINES DRESSED FOR A RAINY DAY

The thatched "slickers," bristling leggings, and straw hats are cheap and practical garments in the Douro River region, where there is plenty of elbow room, but imagine a rush-hour subway crowd in raincoats like these!

return migration that was stimulated by the depression and by improved conditions in Portugal.

LUSITANIA'S GARDEN PROVINCE

Near Braga the hills drop away and fertility increases. From the heights we could look out over the wide coastal region of Minho Province, often called the "Garden of Portugal." Fields of vines, corn, and other crops checkered the countryside.

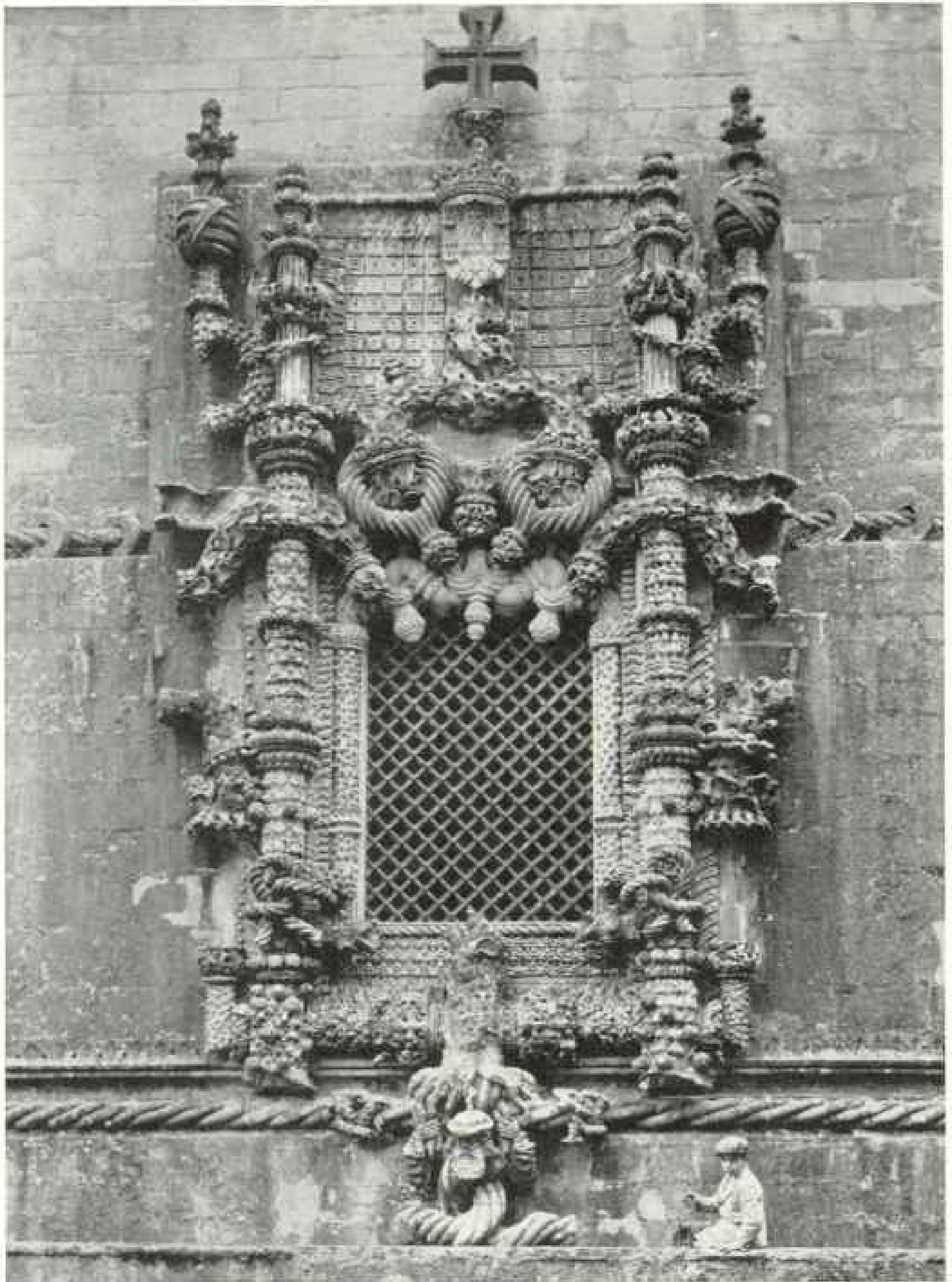
Nearly half of the corn raised in Portugal is grown in Minho and in *Tras os Montes*. Long, slender corncribs, raised on pillars, and tall stacks of the fodder, often built around small trees, are conspicuous everywhere in these northern farmlands.

A few miles before reaching Braga, we turned south to visit old Guimarães, birthplace of Portuguese independence.

Back in 1095, free-lancing Henry of Burgundy was given this northern section of the country as a dependent fief by his father-in-law, the King of León, partly as a belated wedding present and partly for services rendered with his sword. It was a sort of glorified hunting estate, in which the game was infidel Moors. Along with it was the casual suggestion: "If you need more game, go south."

Guimarães Castle became Henry's headquarters. And he accounted well for himself in his expeditions out from its severe stone walls. His son, the doughty Affonso Henriques, who was born here, did even better. In swift, businesslike strokes with his sword he severed Portugal from Spain, and became the country's first king.

He also set many Moors to rout as he swept down to Santarém, Lisbon, and their



SHIP'S ROPES, ANCHOR CHAINS, AND CORAL BRANCHES TELL A SEA STORY IN CARVED STONE.

Inspired by Portugal's voyages of discovery and conquest, architects of King Manoel I developed the exuberant Manueline style, as seen in this window of the Convento de Cristo, at Tomar. At the top is the cross of the Order of Christ, which owned this convent-castle and contributed vast sums for exploration. An armillary sphere stands at each side (page 181). Coiled ropes have cork floats attached (center). The man's head at the bottom, near the seated youngster, supposedly represents a sailor.

strongholds beyond the Tagus. For his own coat of arms he took the five shields of the five Moslem lords that he slew on the fields of Ourique.

Thanks to the steel of the hearts and the weapons of Affonso and his three successors, the Moors were driven from Portugal more than two centuries before their defeat at Granada.

ECHOES OF LONG AGO

The old walls of Guimarães Castle still stand. And the traditions that cluster about those early victories, rather than imposing geographical barriers, delimit Portugal from Spain (map, page 134).

Indeed, Guimarães, Braga, Barcelos, and the country round about are steeped in tradition. In ruins, monuments, castles, and Roman roads, one can trace history back into the realm of mere conjecture. For, only a few miles from Guimarães, archeologists' spades have brought to light the ruined walls of round stone houses, enclosed by rectangular yards, between which run paved causeways.

Citânia they call this one-time town supposedly occupied by Celtiberians long before the Romans came. Another of these ruins has recently been uncovered on the hill above Viana do Castelo (page 161).

Gorgeous costumes and festivals still survive here in Minho. As in many other regions that once had distinctive garb, many hand-woven, rainbow-hued costumes have disappeared with the introduction of uniform machine-made clothes. Enough still remains, however, to transform festivals into scenes of chromatic splendor.

The costumes that I had seen adapted to the Lisbon stage had not exaggerated the gamut of color of the nine different types of dress that I saw in my journey through Minho.

PILGRIMAGE TO BRAGA'S SHRINE

Romarias, or combined pilgrimages and outdoor holidays, born from ancient pagan celebrations, punctuate the Portuguese calendar. One of the largest is the pilgrimage to Bom Jesus do Monte (Good Jesus of the Mountain), a shrine that crowns a hill near Braga (Plate XV).

Annually, thousands of pilgrims, some on their hands and knees, mount its double staircase, which zigzags skyward past chapels housing scenes of the Passion and a series of grotesque fountains.

Gayest and most active of the towns of Minho is Viana do Castelo. We rode in after dark when myriads of twinkling lamps in the streets and on Monte Santa Luzia patterned the harbor with long, wavy ribbons of light.

By day its panorama is still more lovely, as I learned even before I saw it! For in the corridor outside my room at the hotel hung a sign which read:

Santa Luzia Affords One of the World's Finest Views

Few views surpass the one from Santa Luzia—those from the heights above Rio de Janeiro and Funchal, perhaps—both in Portuguese-speaking lands.—THE NATIONAL GEOGRAPHIC MAGAZINE, Washington, November, 1927—Page 571.

The noted Mr. Baedeker failed to bestow a laudatory asterisk on this striking scene which encompasses sea, fishing harbor, and the verdant, mountain-girt valley through which loops the Lima River, but I will!

Perhaps I was influenced by the sign that hung beside my door or by brilliant festival costumes that I saw there. Anyway, I was delighted with Viana do Castelo.

DRIED CODFISH A POPULAR FOOD

Down at the harbor workmen were unloading quantities of dried codfish—the *bacalhão* that forms one of the staple foods of the Portuguese.

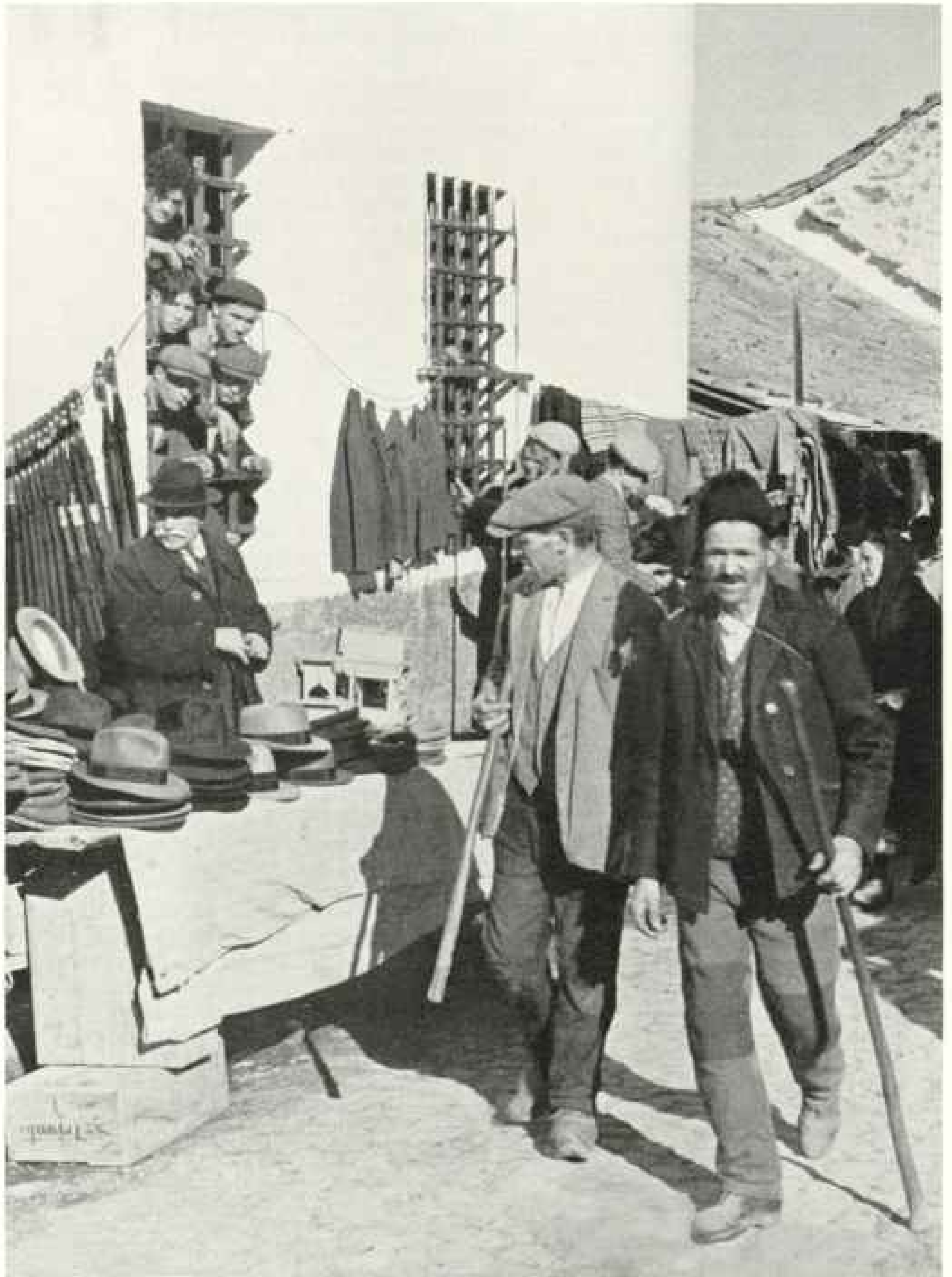
Four centuries ago Portuguese fishermen began making the long voyage across to Newfoundland waters to bring back cod. The trade still goes on, despite the fact that local fishing is an important industry all along the coast.

Most of the seacoast villages have their fishing crews; many also have a distinctive dress.

At Esposende we found a strikingly costumed group of men and women who make a living gathering kelp by means of mammoth rakes (Plates XI and XIII).

A few miles farther down the coast toward Porto we came to the interesting fishing town of Póvoa de Varzim, where an exposition was in full swing. Several exhibition rooms, presided over by red- and white-clad fisherfolk, were filled with a collection of models and actual equipment, which portrayed the many ramifications of the fishing industry (Plate XV).

In boats alone, Portugal has a most remarkable variety of picturesque design and decoration. Some, Chineselike, have eyes



JAILBIRDS POKE THEIR HEADS THROUGH THE BARS TO JOIN IN FAIR-TIME FUN

Greeting their friends and asking for cigarettes, they watch Montalegre's market-day crowds stroll by (pages 161 and 166). Almost within reach are coats, umbrellas, and hats, offered for sale at one of the stands lining the village street. A visiting cattleman, carrying his long staff, wears a sort of stocking cap. Men here often wind silk kerchiefs around the head like turbans.



Photograph by Georg Reinert from Pia

EXPERT BARREL-BALANCERS ARE THE WOMEN OF NAZARÉ

Laughing and gossiping, unmindful of the swaying loads on their heads, they stride through town to fill their casks at the community fountain. The black head kerchiefs are often drawn so closely around the mouth that the women seem to be wearing veils. Wine, beer, tobacco, and vinegar are among the wares advertised on the store in the background.

painted on the bows. Others are gaudily decorated with religious pictures; or they may have pairs of goat horns and tufts of wool on their upturned prows (Plate I and page 145).

At Aveiro, south of the Douro, loop-prowed boats, patterned much like the long-toed wooden shoes worn in the French Pyrenees, sailed the maze of canals and the lagoon that surrounds the town.

Aveiro itself was once very much more on the Portuguese map than it is today. In the 16th century it had a fleet of 60 sea-going vessels which fished the Newfoundland Banks. But droughts and floods played cruel pranks with the river, converting the countryside into salt marshes.

Canals have since been cut, so that part of the land has been redeemed for rice growing. Salt pans cover the area about the lagoon, upon which has developed a thriving business of extracting salt from sea water by evaporation.

From these salty flats we motored inland on the road to Viseu and Guarda. In this

part of the countryside rise wooded hills and the 6,530-foot peak of the Serra da Estrêla, highest in Portugal.

THE ONLY ALL-PORTUGAL RIVER

Fertile valleys lie between these folded peaks, and in them originate the tributaries and the main course of the Mondego River.

This is the only river of any size that belongs exclusively to Portugal; the Douro, Tagus, and Guadiana she receives second-hand from Spain. So we trailed it from near its source down through farmlands and narrow gorges to where it empties into the sea at Figueira da Foz (map, page 134).

Near where it picks up the Dão, however, we detoured up to the spa of Luso and to glorious Bussaco. No spot in all Portugal, not even charming Sintra (page 148), is more delightful than Bussaco's extensive mountain forest of chestnuts, evergreen and cork oaks, cypresses, and gigantic cedars.

In the midst of hoary cypresses, on the site of an old monastery, stands an elaborate royal summer resort, now turned into

a hotel. Modeled after the Manueline style, its stonework bristles with carved ropes, knots, armillary spheres, and other fanciful designs that featured the typical Portuguese art which flourished during the time of the country's heyday of discovery under King Manoel I.

Not always has the district had the calm of monastic life or the quiet that it now enjoys. Scott wrote of it as "grim Bussaco's iron ridge." For on the open slopes, in 1810, Wellington, with British and Portuguese troops, drove back the French armies to check the progress of the Napoleonic victories.

Swinging back to the Mondego again at Penacova, we followed the river trench. Men were pulling boats upstream by long towropes past rows of womenfolk who thumped and rinsed clothes along the shores. Bushes and sand bars blossomed with all the intimacies of the family wash.

Then came Coimbra, its proud hill of rainbow-tinted building blocks mirrored double in the placid stream. "Lusitanian Athens" many have called this ancient seat of government and learning in Portugal. Alfonso Henriques and several of his successors ruled here before the royal residence was moved to Lisbon. Here six of the country's kings were born (Plate V).

When we arrived, workmen were just taking down an archway which had recently added its color and dignity to the 600th anniversary celebration in honor of Isabel, the sainted queen.

I suppose there had also been many roses, for upon them hangs a tale.

THE MIRACLE OF THE ROSES

Isabel was much given to acts of charity. Her husband, King Diniz, though a builder of cities and a champion of agricultural development, had a reputation for unusual personal thrift. Seeing his goodly queen one day with a suspiciously bulging apron, Diniz wanted to know what she was carrying concealed in it. Considerably flustered, Isabel hastened to assert that she was carrying only "roses."

Probably she was even more amazed than the inquiring Dom when the opened apron revealed just that—roses—nothing else. A friendly deity had changed fib to miracle! So *Santa Rainha* (Sainted Queen) Isabel has become.

Dom Diniz became no saint, but he is remembered as the good husbandman, be-

cause he turned his warrior people to thoughts of agriculture.

The pines one sees along the littoral south of Coimbra owe their origin to those he planted to halt the movement of encroaching sands. Today, the pine forests produce quantities of turpentine. As in Japan, the peasants also rake up the needles for fuel.

Dom Diniz did even more of lasting import. The famous old university that occupies the hill crest of pyramidal Coimbra was established by him.

He founded it first at Lisbon in 1290 and shortly thereafter transferred it here. It has since made two trips back to Lisbon, but for the last 400 years the flower of Portugal's youth has been climbing these slopes regularly to attend classes in law, medicine, mathematics, philosophy, letters, and pharmacy.

COLLEGIATE STYLES

In Portugal, where higher education is still reserved for the favored few, scholarship is proudly advertised by distinctive dress. Even when strolling about the streets and parks, students wear their long-lapelled frock coats and flowing black robes. But, truly collegiate, all go bareheaded!

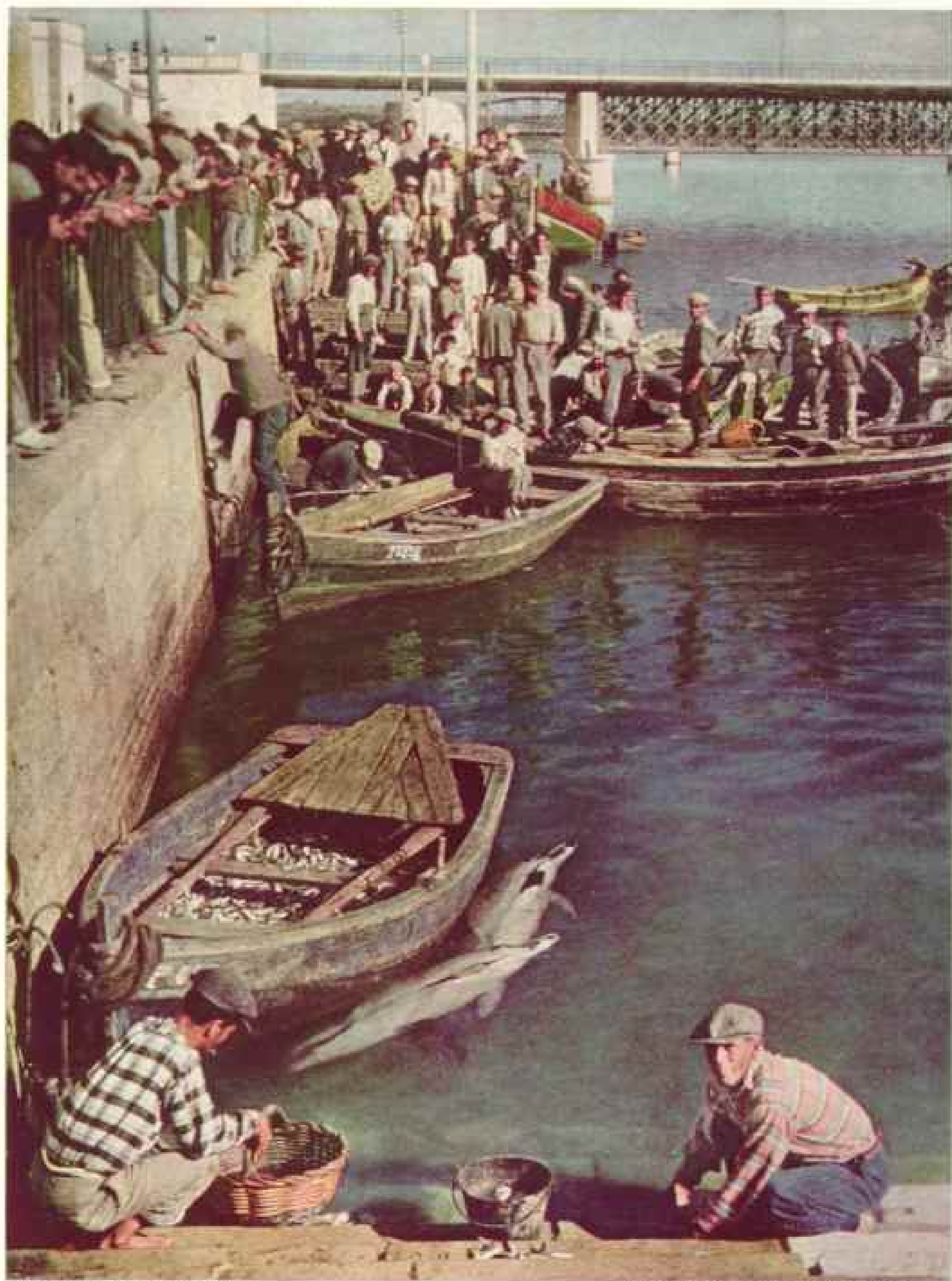
Here studied the immortal Camoëns. On a grassy plot at the entrance gate stands a monument to this soldier-bard. It reveals his one blinded eye, an honorable scar won in battle in colonial wars.

During his lifetime Camoëns received years of exile and poverty at the hands of his country; but to her he gave a monumental epic which sings of her glories in every verse. I have spent hours in the little grotto at Macau,* half the world away, where the lonely exile sat while penning several of the cantos of his *Lusiads*.

Dr. Antonio Oliveira Salazar, who is directing Portugal's present reconstructive program, once taught economics and finance in the Coimbra classroom.

Forty-odd miles south of Coimbra we bonked our way into Leiria, through a full tide of donkeys, carts, bristly side-whiskered farmers, and vegetable-crowned wives that converged upon the market place. Most of the women who congregated in the shadow of the castle-topped hill beside the Liz wore black pillbox hats on which they sometimes pile heavy loads (page 183).

* See "Macao, 'Land of Sweet Sadness,'" by Edgar Allan Forbes, *THE NATIONAL GEOGRAPHIC MAGAZINE*, September, 1932.



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Finlay Photograph by W. Robert Moore

THE FLEETS IN—WITH BOATLOADS OF SARDINES AND BIG TUNNIES

One homcomer, too impatient to wait his turn at the steps, scrambles up the wall from a boat at Vila Nova de Portimão, on the southern coast. Canneries here pack a large share of Portugal's celebrated sardines, which challenge cork for second place among the country's exports. Tunnies like those floating in the turquoise water are also destined for tins. Many boats co-operate to catch them, each taking a corner of a vast net and closing it until the water seems alive with leaping fish.



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ALBUFEIRA, WHERE FISHERFOLK BEACH THEIR BOATS AND VACATIONISTS PLAY

Finlay Photograph by W. Robert Moore

Several of the brightly painted craft were launched on the incoming tide shortly after this photograph was taken. Others, already returned from fishing trips, have been hauled on rollers up the beach, where their catch is given to women to clean. Village children and visitors' youngsters play in the boats and on the sand, for Albufeira, on Portugal's southern coast, is a popular resort as well as a fishing town.



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IN GAY SHAWLS AND COQUETTISH HATS, BAREFOOT WOMEN SCAN THE SEA FOR HOME-COMING HUSBANDS AND SWEETHEARTS

Finlay Photograph by W. Robert Moore

A tiny mirror flashes on each hat, which perches atop a kerchief covering the head. This is everyday feminine garb at Espende and neighboring villages on the coast of northern Portugal, where traditional dress and curious old customs remain almost unchanged. At the festival of St. Bartolomeu of the Sea, boys are decked in the ocean to give them courage, and a black cock is offered to the Saint. Besides gathering kelp (Plate XIII), the people fish and cultivate gardens, irrigated with water pumped by the big windmills on the dunes.



ON PINK CLIFFS, BESIDE A SEA OF "BLUING," SHE WASHES VARICOLORED CLOTHES.

Praia da Rocha (Beach of the Rock) is named for the fantastic formations sculptured by waves along the shore. Wealthy Portuguese and their cousins from far-off Brazil come to this little resort near Vila Nova de Portimão. Cape St. Vincent, Europe's southwestern tip, is about 25 miles away.



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Finlay Photographs by W. Robert Moore

"FILL IT UP!"—WITH WATER, NOT GAS, AT THIS DONKEY "SERVICE STATION"

Running water, piped to the center of town, "walks" home on animals' backs or peoples' shoulders in graceful jars shaped like ancient Greek vases. Huge cisterns, built long ago for the Moorish castle that dominates the countryside, still serve as municipal storage tanks here at Silves.



ROUND AND ROUND GOES THE MULE, RAISING WELL WATER FOR THIRSTY GARDENS

Dipped up by the bucket wheel, water flows to sandy fields through troughs like the one near the boy. "I lived in California 13 years," the farmer told Mr. Moore. He added: "I hope to go back." Chimneys are the crowning glory of farmhouses in Algarve Province.



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Finlay Photographs by W. Robert Moore

FIREMEN? OPERETTA GIRLS?—NO, THESE ARE KELP GATHERERS IN WORKADAY TOGS

In stiff son'westers and long coats that suggest tunics of Roman legionaries, barelegged men of Exposede plunge into the surf and drag out seaweed with their wooden rakes. Women carry the kelp ashore on light frames (right foreground). When dried, it helps fertilize Portugal's vineyards.



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SHAWLS OF GOLD DRAPE HILLSIDES IN THE FORT WINE COUNTRY WHEN THE FROST IS ON THE GRAPEVINE

Dailycolor Photograph by W. Robert Moore

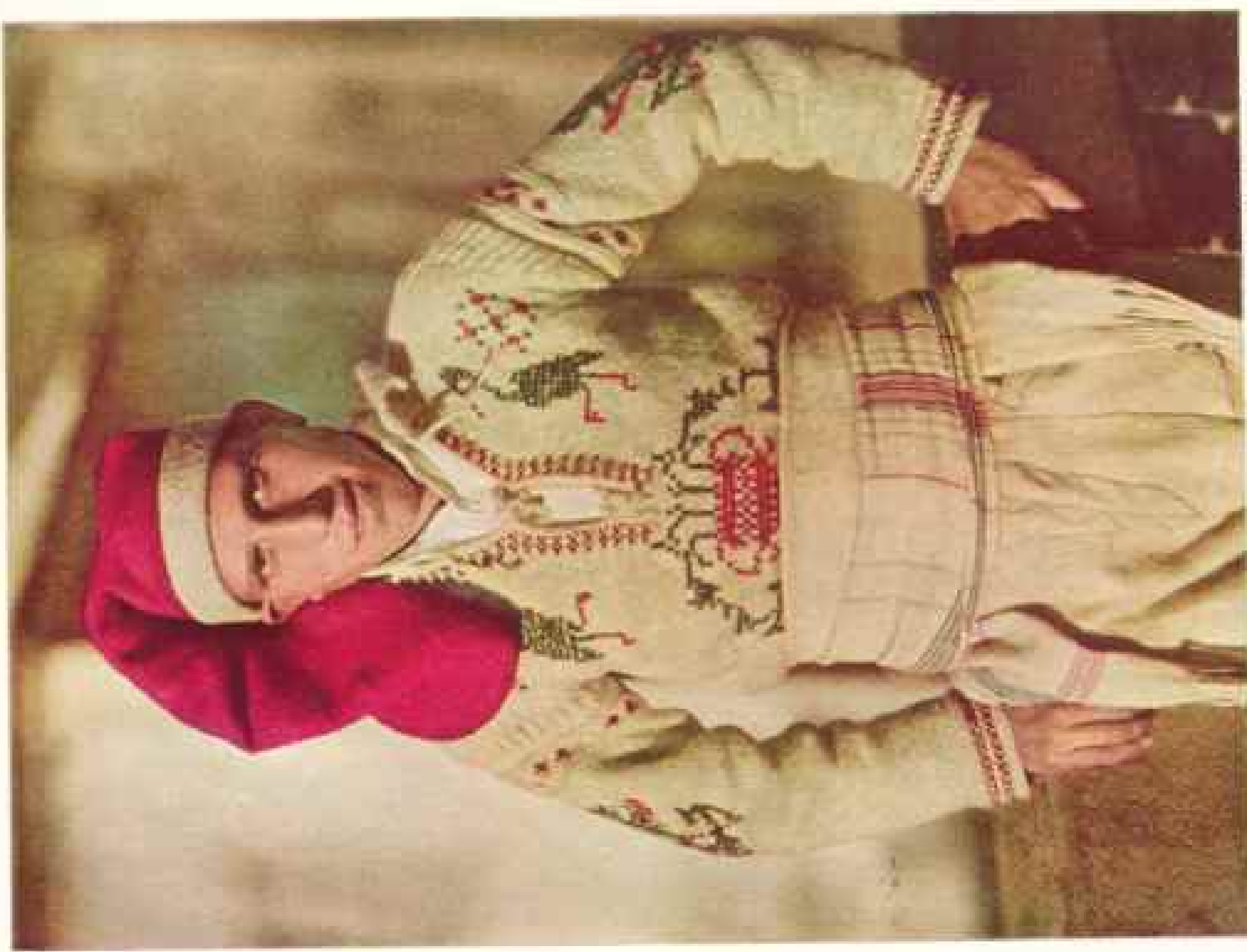
On these terraces in the valley of the Douro, near Pêso da Régua, are grown the grapes for Portugal's most celebrated product: the wine named for the city of Porto, where for centuries it has been shipped abroad. Nowhere else is found the same combination of rocky soil, relatively scant rainfall, and bright sun that fills the grapes with sugar and gives the wine its distinctive flavor and mellow aroma. At vintage time, late September to early October, men carry the grapes in big baskets to the press, marching down in single file behind a leader who blows rhythmically on a whistle.



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“TO ‘ROMARIAS’ AND WEDDINGS GO ALL GIDDY MAIDENS”

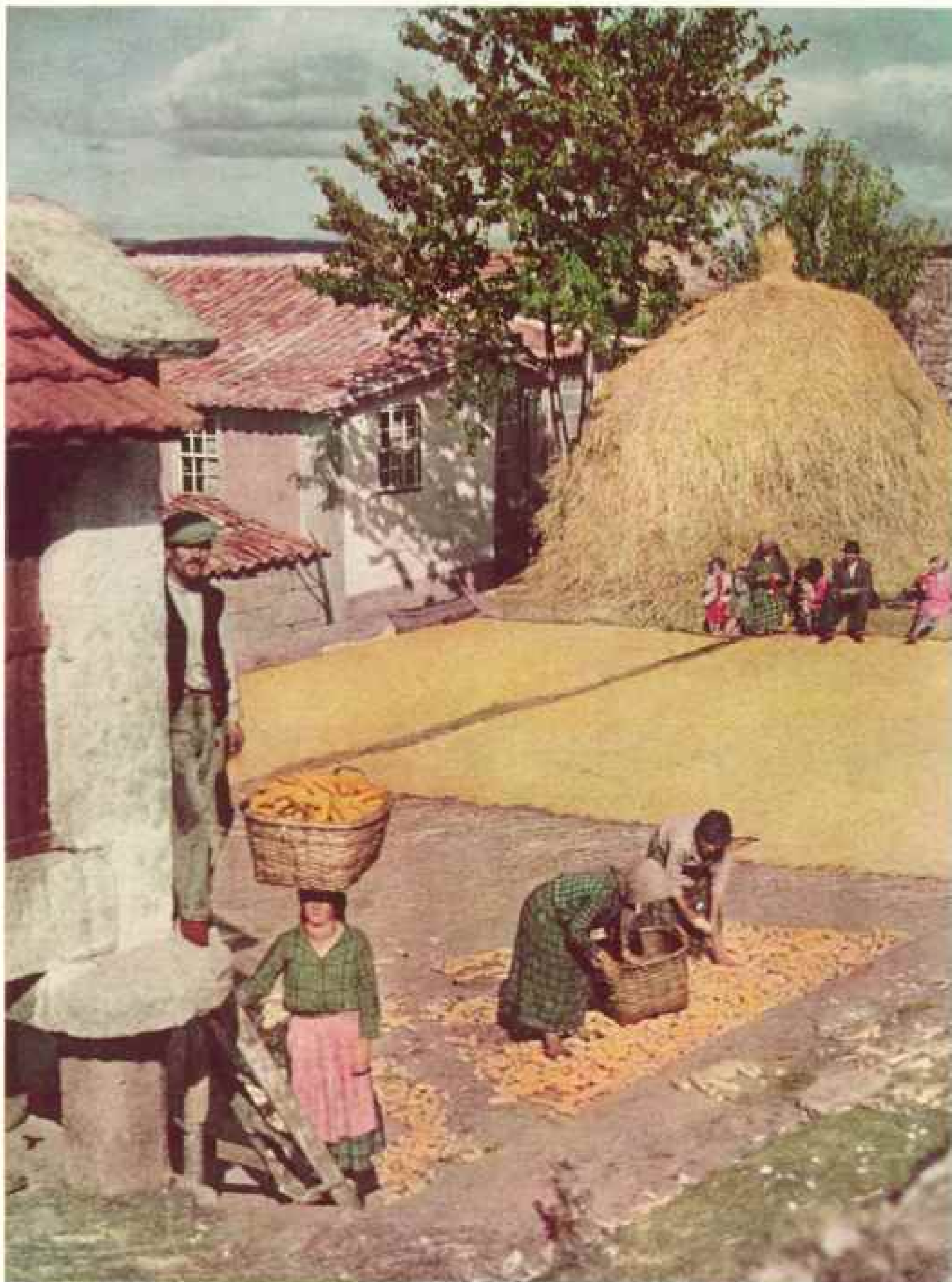
This girl of Viana do Castelo bears out the old Portuguese folk saying. With gold earrings and necklaces, she is ready for a *romaria*, a religious pilgrimage and holiday combined. Thousands of merry-makers annually journey to the Chapel of Good Jesus of the Mountain, near Braga.



Fishy Photographs by W. Robert Moore

IZAAR WALTON NEVER SAW FISHERMEN'S TOGS LIKE THESE.

The *teador* posed in his red Santa Claus cap and fancy sweat shirt at an exposition in Póvoa de Varzim, where models and gear showed different phases of the fishing industry. Traditional costumes are everyday attire in some towns; in others they are reserved for fetes.



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Finlay Photograph by W. Robert Moore

"HEAP HIGH THE FARMER'S WINTRY HOARD! HEAP HIGH THE GOLDEN CORN!"

The farmer's daughter carries heavy basketfuls on her head up the ladder to the crib, where her father dumps them—a characteristic division of labor! To keep out mice and other pests, the crib is elevated on stone pillars. Behind the two girls sorting ears of corn are large mats where wheat or barley is spread out to dry. Busily knitting beside the haystack is the old grandmother, surrounded by youngsters and another hard-working male relative. Attractive and comfortable, their tile-roofed farmhouse is located between Pedras Salgadas and Vidago, in northern Portugal.

Although one sees a few of these in Lisbon, they are typical of this district. Elsewhere in the country baskets are usually balanced atop a doughnut pad which is popularly dubbed a "mother-in-law"!

THREE MEMORABLE SHRINES

Not far south and east of Leiria is a triumvirate of towns—Batalha, Alcobaça, and Tomar—noted for their magnificent ecclesiastical monuments.

Batalha is the Battle Abbey of Portugal. A gem of Gothic architecture, which ranks among the finest in the world, the church of Santa Maria de Vitória (page 159) stands as eloquent testimony of the victorious defense of João I, Master of Avis, in crushing the attempted domination of the Spanish on the near-by fields of Aljubarrota (1385).

Outwardly, the gold-toned stone abbey appears unduly flattened because of its location in a depression and lack of lofty spire. But inside, the Gothic arches seem to soar even higher than their 106 feet, for the church is unusually long for its width.

In a side chapel rest Dom João and his English queen, their carved effigies linked hand in hand. Yes, this is the royal couple of the "Por Bem" magpies (page 148); on the tomb that motto is repeated over and over.

About them are their four younger sons. The eldest, Duarte, who succeeded his father in the kingship, lies beside his queen in the apsidal chapel.

Off from the lovely cloisters, beneath a simple flower-strewn slab, are buried Portugal's Unknown Soldiers of the World War.

The former Cistercian monastery at Alcobaça antedates Batalha by more than 200 years. It is also larger. Austere simplicity was the keynote of the medieval architects, as it was also the rule of the Order.

But, as time passed, the life of the monks became much less simple. The mammoth stove in the kitchen did heavy duty; their tables groaned with food, even when the poverty-stricken countryside hungered. Almost literally they ate themselves out of house and home. In 1834 the monastery, which had long served as a leading Cistercian headquarters in Europe, was suppressed.

PEDRO "THE JUST" AND "THE SEVERE"

In a little chapel are the elaborate tombs of Pedro I and his Inez de Castro, placed foot to foot according to his wish. Pedro

has been variously called "The Just" and "The Severe," for he, we remember, after he became king, elevated to the throne the martyred body of Inez and made those responsible for the crime pay homage before her.

On the route eastward to Tomar, we passed through Fatima, which since May 13, 1917, has become the "Lourdes" of Portugal. Pilgrimages are made there on the 13th of each month. Churches and accommodations are springing up on the rolling fields.

Tomar is a story of glamorous by-gones. In the middle of the twelfth century it became the seat of the military-monastic Order of the Templars, and later of its successor, the Order of Christ.

With this latter Order is ever associated the name of Henry the Navigator, for he served long as its Grand Master. On the hill above the modern village stands his palace and the old Convento de Cristo.

Mount the hill, and time whirls back through the centuries. One sees again bellying sails straining against rigging, anchor ropes, sailors, and coral reefs. Nor are these just visions. On the windows, walls, and buttresses of the convent exuberant architects for Manoel I carved them all in stone. In a single window on the west front Manueline decoration has reached its wildest extravagance (page 168).

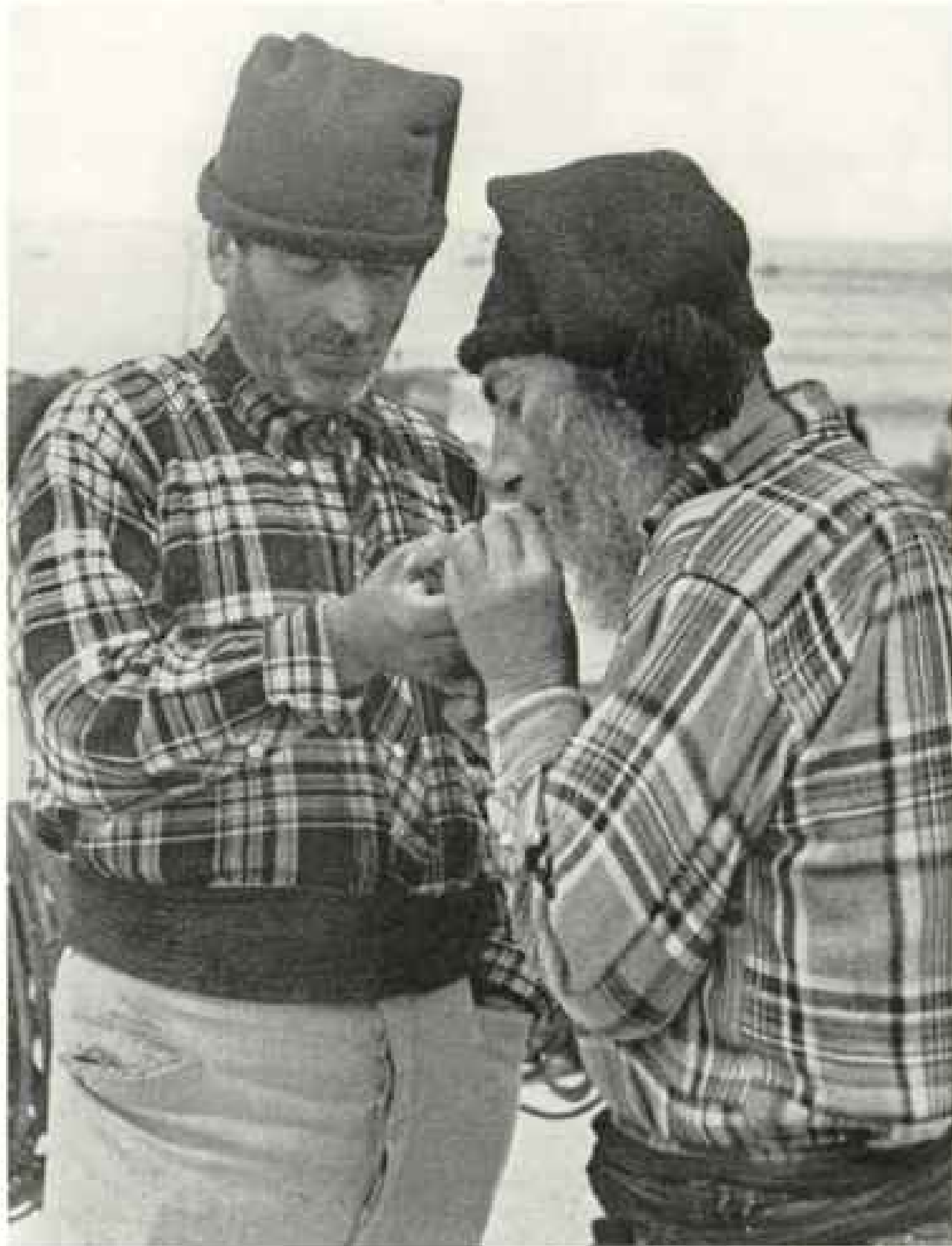
Rows of the hollow, fluted Crosses of Christ and armillary spheres, tied together with knotted stone ropes, top the walls. Crosses of the Order emblazoned the sails of Portugal's pioneering fleets. The armillary sphere appears even today on the Nation's flag.

From Tomar we swung down to the winding Tagus, where the island Castle of Almourol stands like some fanciful ship anchored in midstream.

CASTLES—AND SARDINES

Castles in Portugal! Like the sweeping windmills, olive orchards, and cork forests, they are so numerous that one can't even catalogue them all. In the north they begin; beyond the Tagus to the southern end of Algarve they continue. At many towns they stand like ancient beacons on the hills.

A particularly large one, the old Moorish stronghold of Palmela, near the city of Setúbal, can be seen on clear days from Lisbon.



Photograph by Georg Reiserer from Pix

PIPE AND TOBACCO ARE CARRIED IN THEIR CAPS

The part folded over makes a convenient carryall for these bearded fishermen of Nazaré, who often wear baggy pants that match their checked shirts. Boys dress this way from the time they are four or five years old.

During the working hours of the day a major portion of Setúbal's population have their backs turned toward Palmela. They're facing the wide estuary of the Sado, which is second only to the lakelike reach of the Tagus. For in here ride white-sailed fishing boats, their holds filled with sardines (page 137).

The sardine trade is one of the country's principal industries; annually more than \$6,000,000 worth are exported. Through strict supervision under guilds that have been fostered in the last few years, the world is assured of hors d'oeuvres of the highest quality.

In addition to the profits from fish, Setúbal grows muscatel grapes and delicious oranges, and collects salt from the marshes along the Sado.

"Évora is a jewel; you'll like it immensely," said a friend in Setúbal, just before I started for my visit to Alemtejo and the Algarve.

I did like Évora. It has no historic castle; instead it has the best-preserved Roman temple in the Iberian Peninsula. An old aqueduct stalks across fields into the town (Plate IV).

THE CHAPEL OF BONES

Like nearly every other visitor who has ever been to Évora, I went in to see the Chapel of Bones at the Church of São Francisco. Outside it hangs that oft-quoted inscription: "Nós,

osses, que aqui estamos, pelos vossos esperamos."

"Laugh this off, you'll be with us soon!" is its spirit if not its words.

The city has brighter spots. Its streets, old buildings flanking narrow alleys, and its cathedral and churches hold the mellow, unspoiled flavor of the Middle Ages.

From Évora we motored widely through Alemtejo: to Estremoz; Mourão, near the Spanish border; Moura; Beja; Serpa; and a number of other towns.

This is a region of large holdings and few small farms. The air held that earthy smell of freshly turned soil, for farmers were busy

everywhere with their mule teams plowing the red plains for wheat. I saw only one tractor in operation.

When the present government began balancing its books, preparatory to setting the country on a new basis, wheat constituted one of the largest items of the import ledger. A "Wheat Campaign" was instituted and Portugal is now growing more than enough to supply her own needs.

TAILS, BUT NO WHITE TIE

The farmers throughout the region affect a striking costume. From the waist down the outfit is reminiscent of those worn by western cowboys, for the trouser legs are covered by large sheep-skin chaps. Upon most the thick brown wool remains (page 184).

The coat, however, makes one almost instinctively look for the white tie. Although sleeveless, its cut is surprisingly like full evening dress. Like the chaps, it is made from curly brown-wooled sheepskin.

Mourão and Moura preserve even in their names the fact that this was long a land of the Moors. From here down into Algarve many Moorish customs still prevail. Habitually the women carry their water jars in the crook of their arms, rather than on their heads. Round dome-topped chimneys rise above the roof tops like dwarfed minarets.



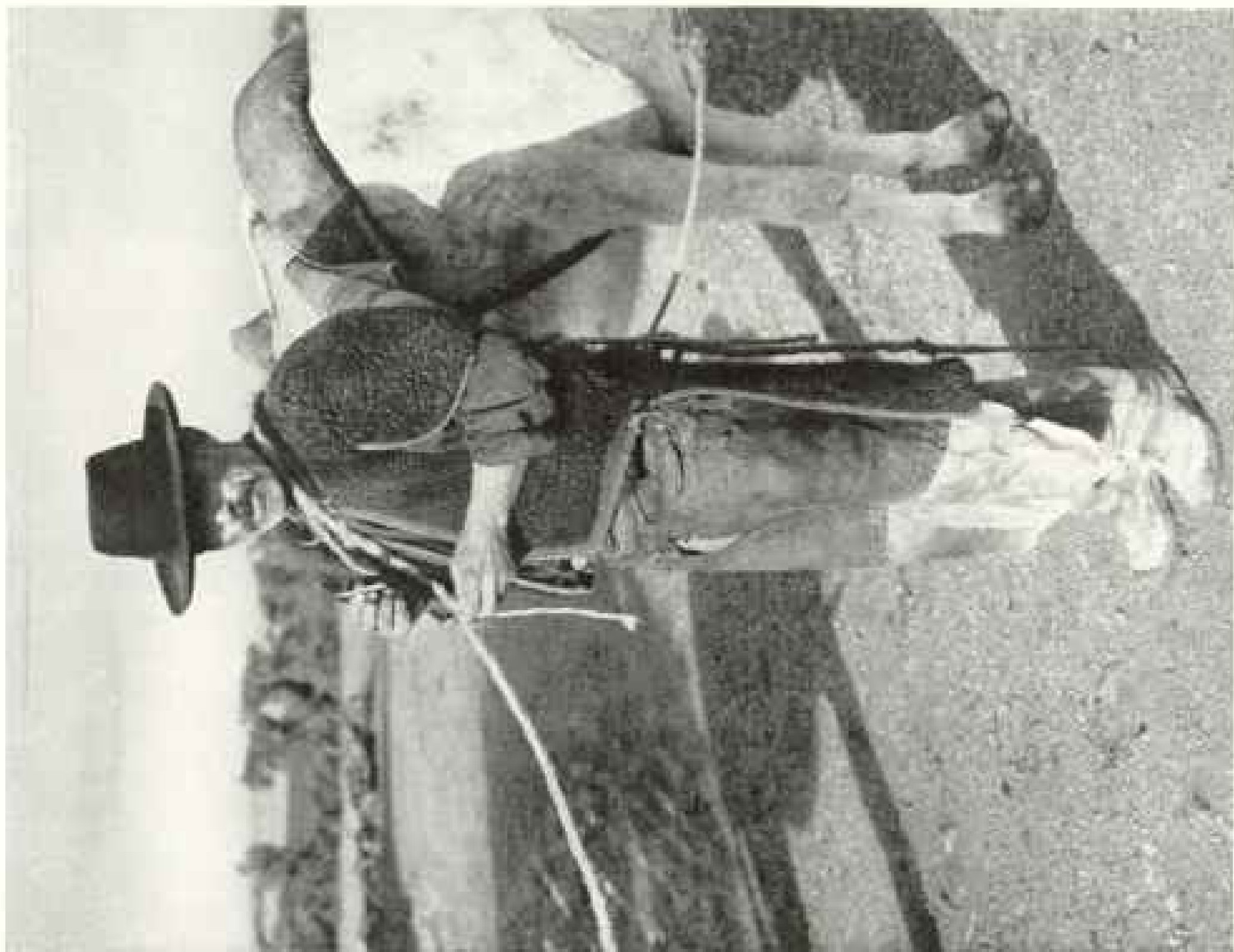
FISHWIVES' HATS ARE FLAT FOR CARRYING BASKETS

Their wares perched atop their heads, the women walked four or five miles from the seacoast to the market here at Caldas da Rainha (page 163). The town's name, "Baths of the Queen," refers to its renowned sulphur springs, which Queen Leonora established as a health resort in 1485.

In the Algarve, however, the artistry of chimneys changes. I use the term "artistry" advisedly, for there each home seems to try to outdo its neighbor. One that does not have anything more than a few slots in the sides or a fancy pattern that looks as if the plaster had been cut with a jigsaw, simply doesn't rank.

CORKS FOR THE WORLD'S BOTTLES

Down through these two southern provinces are large cork forests. Portugal is the world's prime producer of cork today. Much of it is shipped abroad in the rough



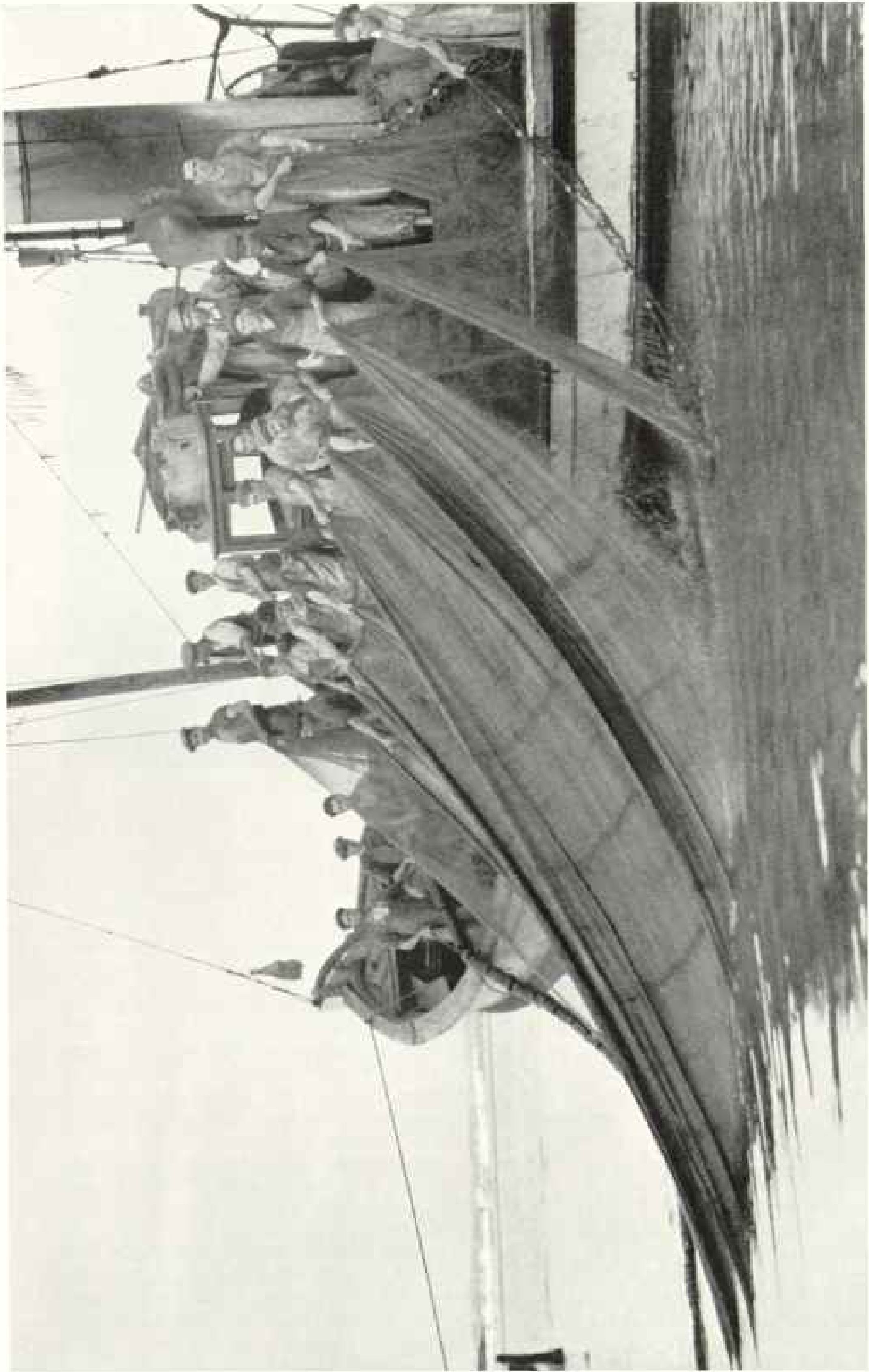
RURAL GARB HAS "TAILS" BUT NO WHITE TIE!

A full-sleeve coat, minus sleeves, might have been the pattern for this garment of curly brown-wooled sheepskin worn by a farmer of eastern Alentejo Province (page 153).



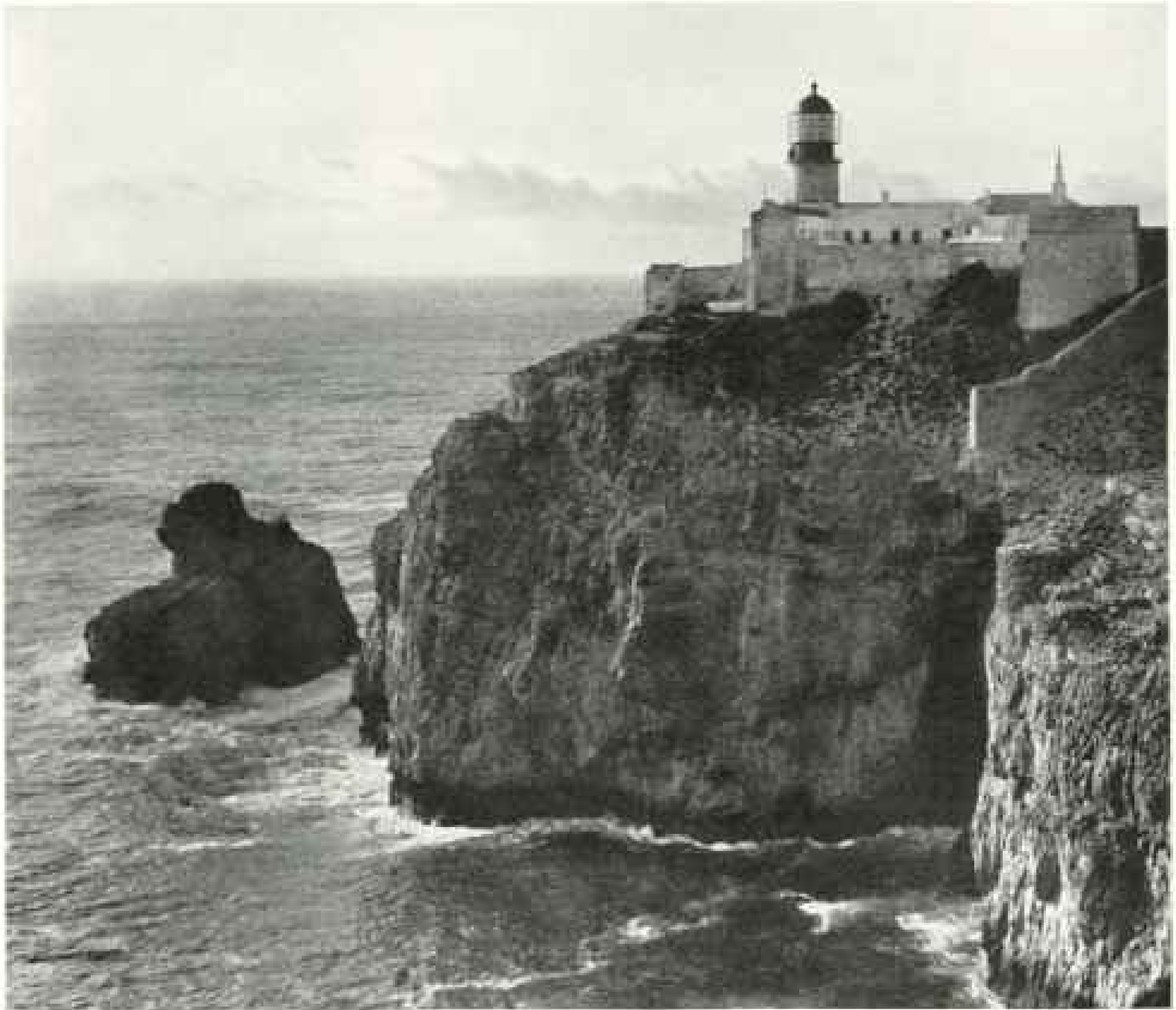
A YOUNG "WEAVING CIRCLE" MEETS IN ALBUFEIRA

Barefoot girls make long straw bands, to be used for hats, baskets, and other products of home industry. The young understudies (left and rear) seem to take the work most seriously.



ALL HANDS HAUL IN A HUGE FISH NET FROM THE GLASSY GUADIANA RIVER

At Vila Real de Santo António, on the Portuguese side of this frontier stream, tunny fish are caught and canned as at Vila Nova de Portimão (Plate IX). Natives abbreviate the town's name to V.R.S.A. Ayamonte, across the river in Spain, is in territory controlled by General Franco's insurgent forces.



EUROPE'S JUMPING-OFF PLACE IS ROCK-GIRT CAPE ST. VINCENT

Off this southwestern tip of the Continent, now topped by a powerful lighthouse, 15 British ships, under command of Admiral Jervis, defeated 27 poorly manned Spanish vessels in 1707. In this battle the naval hero, Nelson, gained his first public renown when, without waiting for orders from Jervis, he swung his ship out of line directly into the path of the Spanish squadron. Jervis saw the bold move and commanded other ships to follow Nelson's example, thereby throwing the enemy into complete confusion and cutting off their escape. What might have been a minor skirmish became a complete victory for the British. Jervis was made Earl of St. Vincent. The Cape is named for the martyred saint who, according to legend, was buried here; his bones were later guided to Lisbon by a pair of ravens!

slabs just as it comes from the trees. To some extent, however, the finished stoppers are also exported (page 187).

Stripping of the trees takes place between May and August. During our November visit their bare boles had changed from the fresh yellowish cork color to bright red (Plate VII). As the new layers of bark age and thicken, they become gray.

It usually takes a cork tree eight to ten years to regrow its bark to sufficient thickness for a second stripping. In many places we saw men binding the cork into large bales or transporting mammoth loads of it by mule cart and trucks into the cities.

Entering 20-mile-wide Algarve Province,

which stretches along the southern coast, is like entering a new world. In climate and in the appearance of the towns there is more of an atmosphere of Africa than of Europe. Down here, at the old castle of Silves, the Moors made their stand against the Portuguese.

On the slopes that dip down to the sea flourish orchards of almonds, olives, and figs. Along the gardens are pomegranate trees, heavy in autumn with bursting fruit.

Beside the low, whitewashed homes that dot the eastern countryside, patient donkeys march in dizzy course round and round wells to pump up water to irrigate the thirsty gardens. In the west district



AXMEN BUILT "CORK TOWN" WITH BARK THEY STRIPPED FROM CORK OAKS

In these huts the men live while working in a grove in Alemtejo Province (Plate VII). Behind the youthful camp cook is a pile of cork slabs, ready to be baled. Most of the cork used in the United States formerly came from Spain, but now that the Spanish industry is tied up by civil war, the great bulk of our supply is furnished by Portugal. Ships often arrive in New York with bales piled all over their decks to a height of several feet.

white-sailed windmills, flailed by the Atlantic breezes, were at work.

In bygone days, when "world trade" consisted mainly of traffic with the African coast, Algarve ports were filled with caravels and barks. Many of the harbors are so shallow that few present-day steamers can enter them. Their commerce is now largely confined to sardine and tunny fishing.

Portimão, Faro, Olhão, and other towns have sizable fleets that feed large sardine canneries (Plate IX and page 164).

Olhão seems almost to have been patterned from a cubist's dream. Its square, whitewashed, and calcimined homes are flat-topped, and more often than not the upper stories are smaller than the lower floors. The view from the top provides a fasci-

nating panorama of roof terraces of all sizes, studded with steep, open stairways and fanciful chimneys (page 188).

The most colorful bit of Olhão's history is told in a series of *azulejos*, or colored tiles, that have been placed in the backs of several seats in its tiny park (Plate V).

At the time of the Napoleonic conquest in Portugal the king fled to Brazil. Then, when the French were finally defeated, six seamen from Olhão took it upon themselves to sail to Brazil and convey the good news to the king. In these tiles are pictured the voyage and safe arrival of the tiny fishing boat.

At Lagos, in an interruption in the sea wall of salmon-red cliffs, we come upon vivid reminders of Prince Henry the Navigator. For here he governed, and from



"CUBIST" HOMES OF OLHÃO HAVE SUN DECKS FOR FAMILIES AND PETS

Residents grow flower gardens and cook outdoor meals at little kitchens on some of the flat-topped roofs, many reached only by outside stairways leading up from the lower rooms. Traces of Moorish architecture linger in these whitewashed or calcimine-tinted homes, centuries after the Moslem invaders were driven back to Africa.

here he dispatched his pioneering ships.

A few miles farther on, where the vegetation trails off to almost barren rock, is Sagres—the site of Henry's School of Navigation. Part of the walls still remain. An aged couple proudly show one around and point out the buildings where the Infante Dom Henrique lived and the spot where he fished from the cliff into the sea that surges nearly 200 feet below.

If one evinces interest, the woman will also fumble through her pockets and bring forth a key to unlock the chapel where he said prayers. The altar is decorated with paper roses, but once it was graced by the first roses imported from Madeira.

Sagres, and St. Vincent, marked by a powerful lighthouse, form the tips of the *Promontorium Sacrum* of the ancients. Past

this bold headland, upon which the land-lubber sailor prince dreamed his dreams of a great sea route and saw his ships sail out into the unknown, now stream an endless succession of boats on their modern sea lane to India (page 186).

Back in the museum of the Sociedade de Geografia at Lisbon, I was shown a model of the proposed monument to Henry the Navigator which Portuguese-speaking lands plan to erect on Sagres promontory.

A majestic landmark it is to be—and at the same time one of the world's finest lighthouses. Beams from its mighty beacons are to guide by night the parade of shipping through these waters, as the life efforts of the inspired prince guided early Portugal toward the Path of Empire beyond the seas.

INDEX FOR JULY-DECEMBER, 1937, VOLUME READY

Index for Volume LXXII (July-December, 1937) of THE NATIONAL GEOGRAPHIC MAGAZINE will be mailed upon request to members who bind their copies as works of reference.

THE RISE AND FALL OF NANKING*

BY JULIUS EIGNER

TEN years ago Nanking had roughly 300,000 inhabitants; more than a million people were making their homes in the Chinese capital when the exodus began last November.

In 1928 the city had no lighting system worthy of the name, no water works, no sewers; normally, now, its wide thoroughfares blaze with neon lights, modern sanitation has been installed, and water runs from the tap instead of being sold in the streets by the caskful. From a straggling, overgrown village, tucked away behind its immense encircling wall, Nanking fast developed into China's most progressive metropolis.

This amazing evolution was achieved in the face of bitter scepticism among those Chinese and foreigners who resented the removal of the Nation's capital from Peiping, with its rich tradition of bygone grandeur and its comfortable amenities. Upstart Nanking was seen as a mere militarist stronghold, doomed to extinction so soon as a mightier man than Generalissimo Chiang Kai-shek should arise.

This attitude gave way to a feeling of confidence, and within the past two or three years most of the large Chinese banks erected buildings and opened branches in the capital. Land values in the business section skyrocketed by as much as 700 per cent, compared with the prices prevailing less than a decade ago.

CENTER OF RAILS AND ROADS

Nanking has always been a city of historical interest, scenic beauty, and strategic importance. Situated on the right bank of the Yangtze River, about 200 miles from Shanghai, it is connected with other important centers by river as well as by the Tientsin-Pukow, Shanghai-Nanking, and Shanghai-Hangchow-Ningpo railways. In recent years it has become the terminal point also of a vast network of interurban and interprovincial highways.

Figuring prominently in Chinese history for more than 2,000 years, Nanking has experienced many periods of glory, alternating with eclipse and tragedy. It has been the capital of several dynasties, and has been known by different names.

As Nanking, literally "southern capital," it dates only from the founding of the Ming

dynasty in 1368. First called "Ginling" (preserved to this day as the name of a women's university established in Nanking under American missionary auspices), the name was changed several centuries before Christ to "Tanyang" and later to "Kiangnan" and "Shengchow."

The last emperors to reside in Nanking were the early Mings, whose dynasty was founded here in 1368 by Hung Wu, a bold soldier of fortune who began life as a Buddhist monk. Ruins of their tombs, palaces, and imperial pleasantries still remain as picturesque mementos of Nanking's golden age. The third Ming emperor, Yung Lo, deserted the city for Peking (now Peiping) in the early 1400's to exert more effective control over the northern part of his dominion, threatened at that time by invading Mongol and Tatar tribesmen.

In addition to persistent destruction by constant warfare, floods, storms, and earthquakes, Nanking has twice suffered almost complete annihilation.

The first time was at the end of the sixth century when conquering hordes razed every important building and ploughed up most of the land inside the city walls so that no trace of its former beauty should remain.

The second destruction took place between 1853 and 1864, when Nanking fell a prey to the fanatical vandalism of the Taiping rebels, who swept the country, massacring, pillaging, and burning as they went. When finally driven from the city, they left behind them little more than a smoldering heap of ruins from which half of the population had fled in terror.

An Englishman who visited the city in 1861 wrote of the terrible desolation: "The city of Nanking, as well as the suburbs, the old tombs of the Ming Emperors, and the famous Porcelain Pagoda, are utterly destroyed. The walls are very high, 20 miles in circuit; but the once wide and well paved streets are merely roads leading through heaps of bricks. The palaces of

*The occupation of Nanking by Japanese troops is a historic event of our time. A seat of the Ming emperors, the shrine of the Republic's founder, and center of the new nationalism, Nanking also was the boom city of modern China. THE NATIONAL GEOGRAPHIC MAGAZINE presents this picture of Nanking as it was observed when the exodus began last November as a remarkable document of current historical geography.—The Editor.



Photograph by Julius Eigner

BUDDHIST MONKS CHANT MASSES IN A NANKING SHRINE

Daybreak, noon, and sunset call the priests to their prayers. Few temples remain in the capital; most of them were converted into schools, government buildings, and hospitals. But thousands of citizens embrace this ancient faith, which was introduced into China from India near the opening of the Christian Era (page 203).

the Wangs stand conspicuous among the ruins. These are new; the old yamens and temples and the whole Tatar city having been destroyed."

THE "TOWER OF PORCELAIN"

The world-famous Porcelain Pagoda destroyed by the Taipings was reckoned the most beautiful structure of its kind to be found in the whole country—and China is a land of pagodas.

Built in the early part of the fifteenth century by Emperor Yung Lo to commemorate the virtues of his mother, it was encased in highly glazed tiles of many colors. Its overhanging eaves were covered with green tiles, and some 150 bells hung from the ornamental cornices. Longfellow celebrated this remarkable pagoda in his poem *Keramos*, when he wrote:

And yonder by Nanking, behold
The tower of porcelain, strange and old,
Uplifting to the astonished skies
Its ninefold painted balconies,
With balustrade of twining leaves,
And roofs of tile beneath whose eaves
Hang porcelain bells that all the time

Ring with a soft melodious chime:
While the whole fabric is ablaze
With varied tints all fused in one
Great mass of color like a maze
Of flowers illumined by the sun.

All that remains of the pagoda today is its bronze cupola, which lies like a huge inverted bowl outside the South Gate of the city.

For the next half century after the Taiping occupation Nanking slumbered amid its ruins until once again the country was shaken to its foundations by revolt. In 1911 the Manchu Dynasty, which had ruled China for more than 260 years, was thrown on the scrap heap and the infant Republic of China emerged under the presidency of Dr. Sun Yat-sen.

Following Dr. Sun's election as President of the Provisional Government of China, the country was divided for a short period, the southern provinces drawing up a provisional constitution and using Nanking as their capital. In February, 1912, an agreement was reached with Yuan Shih-kai, who was holding the reins in the North, for the withdrawal of Dr. Sun in Yuan's favor, and it



Photograph by Julius Eigner

KITTY "SPRUCES UP" BY HERSELF, BUT THE CLAY IDOL WAITS FOR HELP

Back yards of temples in Nanking are the workshops for making and repairing such figures. In addition to the principal Buddha, there are hundreds of other gods ranged along the walls, representing lesser divinities and saints. Upkeep, therefore, is a factor.

was expected that the capital would be retained in Nanking.

This proved impracticable, however, and for another 15 years Peiping continued the seat of government until the Nationalist armies surged northward from Canton in 1927.

Because it had been Sun Yat-sen's choice as capital, and because of its strategic importance, Nanking became one of the most important Nationalist objectives and in March, 1927, the city was occupied and looted by troops under the command of Left Wing leaders. A group of foreigners, including the American consul and his family, were besieged in a house atop what is known as Socony Hill and were rescued under cover of a bombardment by the foreign gunboats lying at anchor in the Yangtze River below.

For several months after this unfortunate happening, which came to be known as the "Nanking incident," the city was in a state of great confusion, but Generalissimo Chiang Kai-shek set up the Nationalist Government there in the following May and on June 21, 1928, a decree was issued pro-

claiming Nanking once more as the capital of China.

Such, in brief, is the history of the old Nanking which the Chinese Nationalists set to work a decade ago to make over into an inspiring symbol of the New China. It was a colossal task, vastly complicated by the sudden influx of officials, job seekers, and the like for whom housing accommodation of some sort had to be found.

CITY A SYMBOL OF NEW CHINA

Side by side with the old-style, notoriously unhygienic Chinese houses, new residences in a semiforeign style began to spring up like mushrooms. Hastily thrown together at first, these structures gradually improved both in appearance and quality of workmanship, so that Nanking's newest residential district boasts many fine homes.

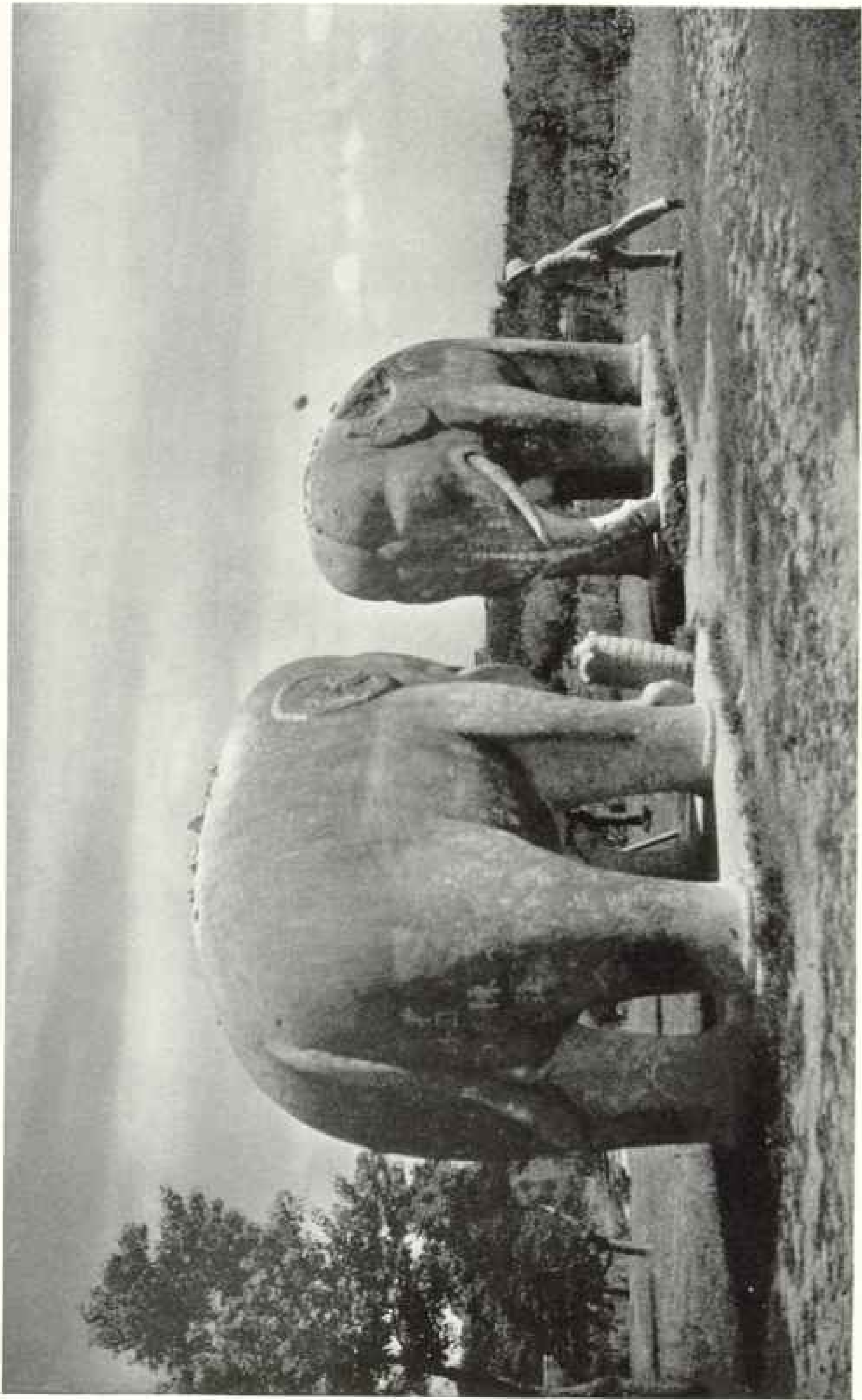
Road building was one of the problems. The first main traffic artery to be literally cut through the city was the Chung Shan Road, perpetuating the name by which Sun Yat-sen is popularly known among his compatriots. Starting from the Yangtze water front at Hsiakuan and piercing the old city



Photograph by Merl La Voy

TIME-WORN STATUES STAND ETERNAL GUARD ALONG THE AVENUE TO THE TOMB OF THE FIRST MING EMPEROR

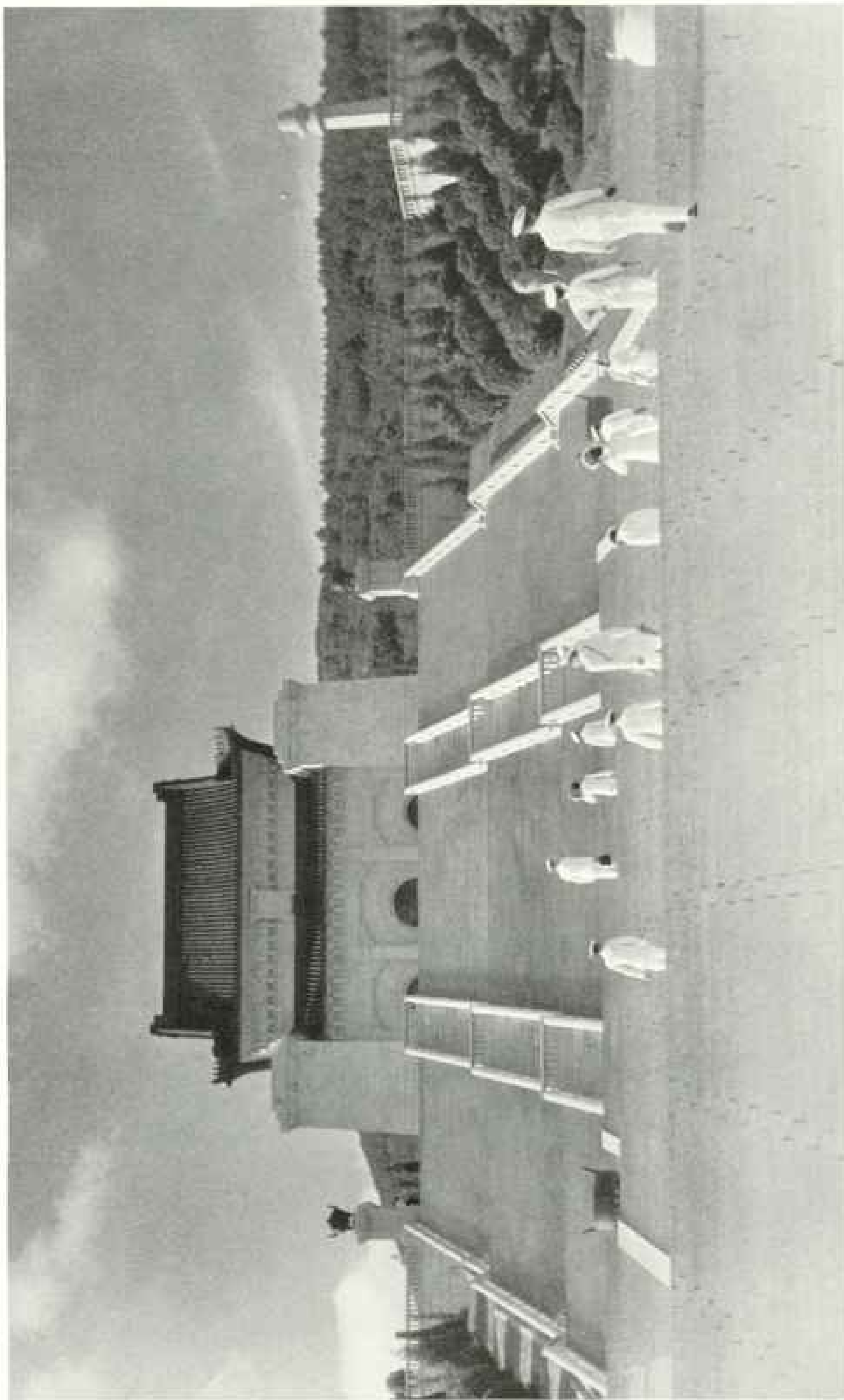
A century before America was discovered, the founder of the Ming dynasty was buried on the side of this mountain overlooking Nanking. The tombs and buildings, more than 500 years old, have fallen into decay, but the stone warriors and other figures that border the approach remain intact. The memorial became a model for all later emperors; the famous Ming Tombs near Peiping were patterned after it. Two Chinese riding along the path are mounted on bullocks.



Photograph by Alfred T. Palmer

LADY LUCK SMILES ON THE TOSSER, LEGEND ASSURES, IF HIS PEBBLE REMAINS ON THE ELEPHANT'S BACK

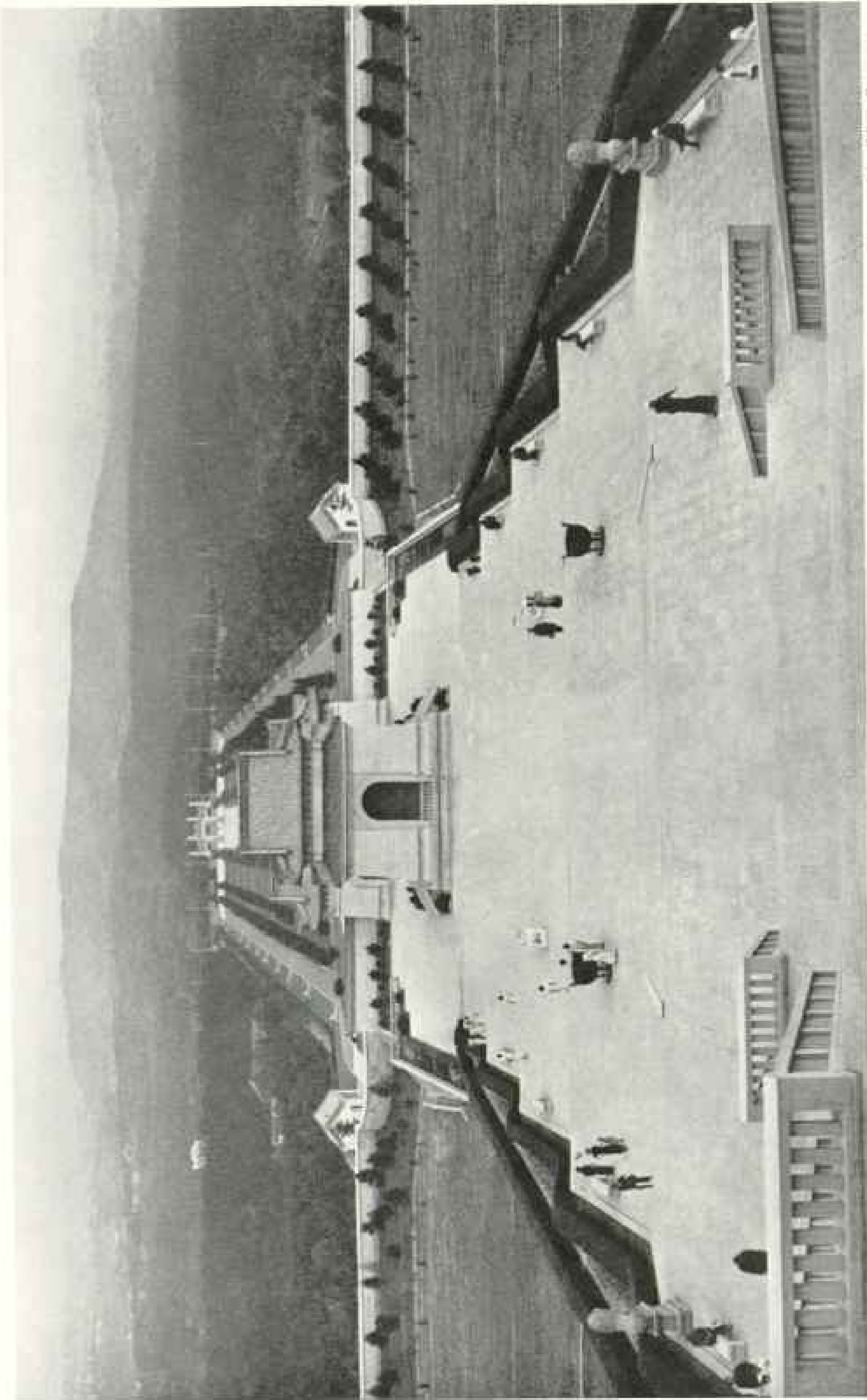
Many of the 24 stone animals which line the avenue leading to the Ming Tombs bristle with small stones. Warriors, statesmen, camels, lions and horses, in various postures, also are represented.



Photograph by Alfred T. Palmer

CHINESE NAVAL CADETS MAKE THE LONG CLIMB TO THE TOMB OF THEIR OWN "GEORGE WASHINGTON"

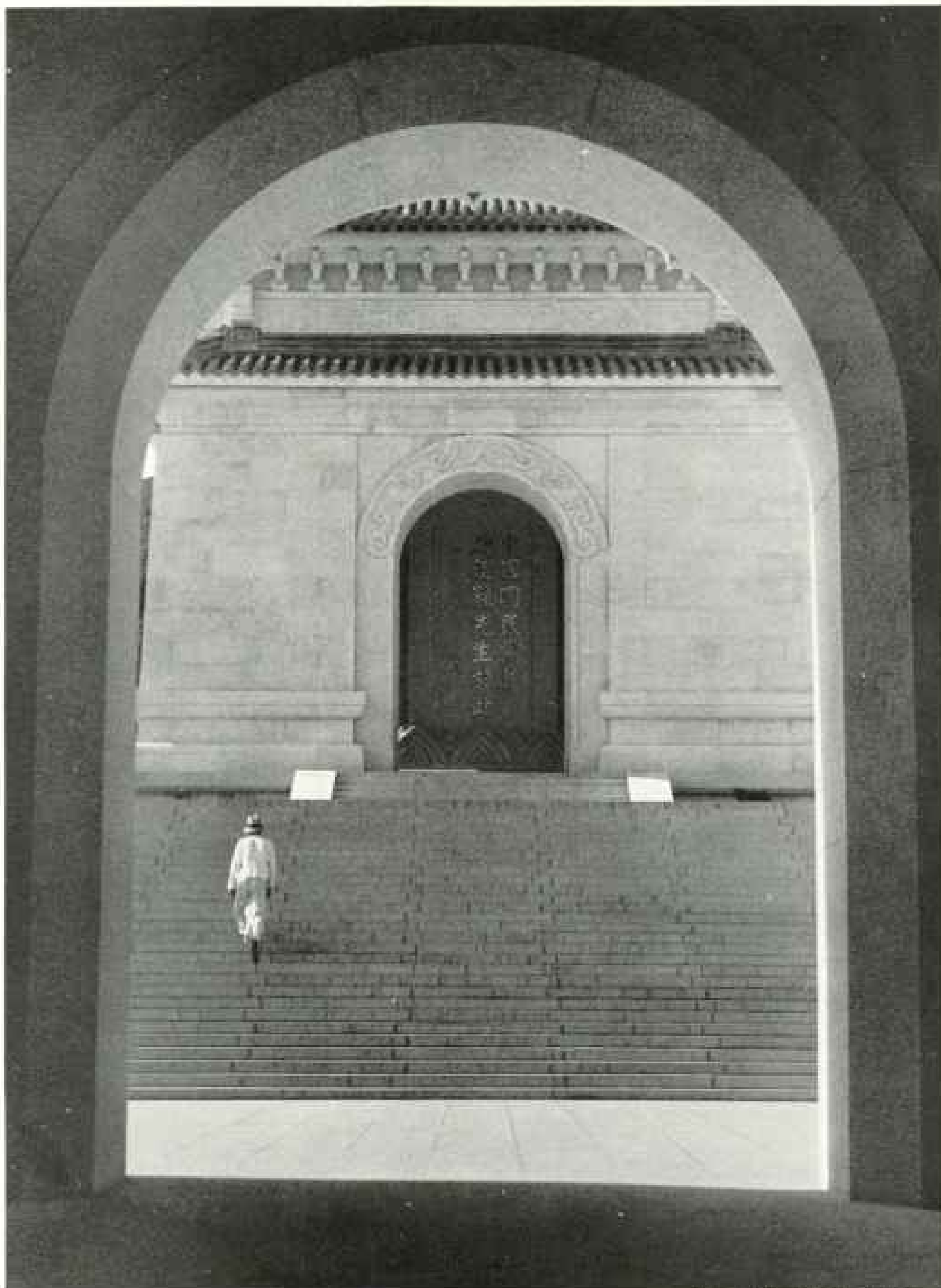
Five hundred granite steps embedded in concrete rise to the esplanade on the south slope of Purple Mountain. Here stand the Memorial Hall and, behind it, the tomb of Sun Yat-sen, China's great revolutionary leader and idol of the Nationalists (page 190). Upon the outbreak of hostilities, the entire mausoleum was covered with bamboo trelliswork and the steps and balustrades were camouflaged with paint to prevent Japanese aviators from recognizing it. The structure was designed and built by native genius and labor, Lu Yen-shih, a Cornell graduate, the architect, died a few weeks before the work was completed in 1929 (page 218). Near the foot of the steps the Chung Shan Road, popular Chinese name for the hero, starts its course through the heart of the city to the Yangtze River, seven miles away (page 191).



Photograph by Gilbert Grosvenor

ADVANCING JAPANESE SCOUTS GLIMPSED NANKING FROM THIS VANTAGE POINT ON THE SUN YAT-SEN MEMORIAL

From the impressive terrace of the tomb, the entire countryside lies revealed. In the distance is the walled capital and, on the other side of it, the Yangtze. Nipponese soldiers, early in December, first came into the grounds in their march to the city. The superb setting and majestic plan make this memorial one of the most inspiring architectural achievements of all time.



Photograph by Alfred T. Palmer

MASSIVE GRANITE KEEPS ALIVE THE MEMORY OF DR. SUN YAT-SEN'S DEEDS

The hero of the Republic, who died in Peking March 12, 1925, was removed to this impressive mausoleum east of Nanking four years later. Southeast of the tomb a Chinese "Arlington Cemetery" has taken shape. There the remains of revolutionary soldiers, buried in many parts of China, have been re-interred. The famous old "Beamless Hall," built on the present cemetery grounds by the first Ming emperor, has been restored. Made up of three parallel, barrel-vaulted halls, 165 feet long, it partially collapsed years ago.

wall near the ancient Drum Tower (page 200), this highway penetrates to Banking Circle, at the heart of the modern city. Then it makes a right-angle bend and debouches through the city wall at Chung Shan Gate.

The building of this roadway entailed the demolition of thousands of Chinese houses which stood in its way, and at first there was a great outcry from property owners. The subsequent rise in land values along the new route provided ample compensation, however, for any initial loss.

Along this road the earthly remains of Sun Yat-sen, founder of the Chinese Republic, were carried on their last journey to the magnificent mausoleum erected by a grateful nation on the slopes of Purple Mountain (pages 194, 195, 196). Recently it hummed with the roar of speeding automobiles and motorbuses as Nanking went about its business of running the country's affairs.

Next there arose the question of providing adequate quarters for the various government offices. As a makeshift measure the central headquarters of the Kuomintang, the political organization from which the Government largely takes its orders, were established in buildings formerly occupied by the Kiangsu provincial assembly. Here meetings of the Central Executive Committee and the Central Political Council were held and matters of high policy were decided.

The municipal government still had to content itself with the old Examination Hall, a relic of the Manchu dynasty near the Temple of Confucius.

At first the committee entrusted with the work of planning the new city considered the advisability of creating a composite government quarter in the neighborhood of the Sun Yat-sen mausoleum, but eventually this plan was scrapped. Later the site of the former Ming dynasty palaces was advocated, but this idea also was discarded. Finally sites were found for most of the ministries along the Chung Shan Road.

THE MINISTRY OF RAILWAYS

The first government department to be housed in a modern building combining Chinese architectural features with Western convenience and comfort was the Ministry of Railways, which moved into its new quarters in 1932. This is perhaps the best laid out and the most attractive of all of the government quarters erected so far.

For this a good share of the credit must be given to Sun Fo, son of Dr. Sun Yat-sen, who served as Minister of Railways at the time when the building was planned.

Two years later the Ministry of Foreign Affairs was housed in a substantial brick building (page 217), and in the following year the ornate Ministry of Communications was completed (page 214). Planned by a Russian architect, the latter is perhaps the most imposing of all of the government edifices. Its green-tiled, curving roofs make a picturesque landmark reminiscent of the palaces of imperial Peking.

Other buildings followed in rapid succession. They included the Supreme Court (page 202), housed rather insignificantly in a structure likened to an American schoolhouse of 25 years ago; the Home for Overseas Chinese; the Kuomintang Historical Relics Exhibition; the Officers' Moral Endeavor Association, and others.

WATER, FROM COOLIES TO METERS

Among the first public-utility undertakings to be tackled was the city water works. Construction was started in 1929, but not until 1933 was the work advanced enough to serve a section of the rising city. Up to that time rich and poor alike were obliged to depend upon the centuries-old system by which water was carried to the doorstep on coolie back. Today Nanking has some 4,000 meter consumers, and hundreds of thousands of poorer folk buy their supplies from the municipal water stations scattered throughout the city.

Lacking spring water, Nanking depends for its water supply upon the mighty, khaki-colored Yangtze, which rolls on past the city's front doorstep after having traversed the breadth of the country. Supplies are drawn from the river above the little port of Hsiakuan at a point where the danger of pollution is reduced to a minimum.

The river is led to a pumping station through sedimentation basins, where alum and bleaching powder are used, and to a coagulation basin, where it is held for four hours. After sedimentation the water is clean, but not yet safe. To kill bacteria, chlorine is added in the clear-water pumping house, after which the water is pumped to consumers through a system of cast-iron water mains.

Samples of water are sent daily to the municipal health administration for chemical and bacteriological analysis. Despite



Photograph by Pierre Verger from *Black Star*

"OLD GLORY" FORMS A PROTECTIVE CANOPY FOR AN AUTOMOBILE

Seeking to avoid being bombed and strafed, not only Americans, but foreigners generally, painted their national emblems on motorcars and housetops last autumn. Embassies, missions, and other buildings erected and used by non-nationals were similarly marked.

these precautions, however, foreign residents and a considerable proportion of the enlightened section of the Chinese population still do not consider the water safe for drinking purposes until it has been boiled or distilled. The capacity of the plant rose to 1,060,000 gallons a day, but this has been inadequate and it was estimated that the rapidly increasing population would require 30 per cent more in the near future.

As early as 1912 Nanking had its own power plant, but the electricity supply was hopelessly inadequate. A comparative rarity except for the wealthiest residents, electric lights flickered so much and so dimly that candle and oil lamps became an indispensable adjunct. People strove to remedy matters by making illegal connections—there was no meter system—only to find that the lights were dimmer and less reliable than before. Only in the small hours of the morning, when scarcely any power was being used, could the system be relied upon to provide decent illumination.

When Nanking was made the capital, conditions gradually improved, but it is only within the last few years that the

electric-light system became really dependable.

Indeed, there seemed to be no end to the herculean task of making over medieval Nanking into a modern city.

Unlike Tokyo, Nanking did not need an earthquake to assist the process of modernization, for, compared with pre-earthquake Tokyo, it was but a hamlet, and the problem was one of construction rather than reconstruction. Of the immense area enclosed within its 20 miles or so of city wall in 1927, less than a twentieth was covered by houses. The rest was an expanse of pastures and fields, as much of it remains.

AUTOS, RICKSHAS, CARTS

Nanking has neither a subway nor an "L," but the city's transportation facilities include 300 buses, more than 3,000 automobiles, some 15,000 rickshas, about 800 pony carriages, numerous motorcycles and bicycles, and countless carts drawn by horses, buffaloes, or oxen. In addition, millions of patient feet unceasingly pad along the streets and lanes within and without the city wall.



Photograph by Julius Eigner

SUN YAT-SEN GAZES DOWN UPON HIS FOLLOWERS

Just beneath the golden ceiling in the Memorial Hall of the new library, dedicated to the memory of the national hero, hangs this striking portrait. Under it are inscribed, in Chinese characters, the cardinal virtues set up by the ancient wise men—"Loyalty, filial piety, sincerity, love, face, devotedness, peace." These principles were stressed by Doctor Sun in his efforts to rebuild China.

To go by automobile from one end of the city to another, provided the journey does not take you outside the city wall, requires about 20 minutes and costs one Chinese dollar plus a 20-cent tip—about 35 cents in U. S. money. To traverse the same distance by bus requires nearly an hour and costs 60 coppers, or six cents U. S. currency.

Covering this distance by ricksha would consume about two hours and cost about 20 cents U. S. currency, but this is too slow even for the leisurely Chinese, who takes to the bus instead, unless he should find himself encumbered with baggage (page 201).

Bus fares are kept to a minimum to encourage their use. That the service can be run so cheaply is chiefly because heavy-oil Diesel vehicles are operated at about one-fifth of the cost here of a gasoline-driven vehicle.

THE PEDESTRIAN IS SUPREME

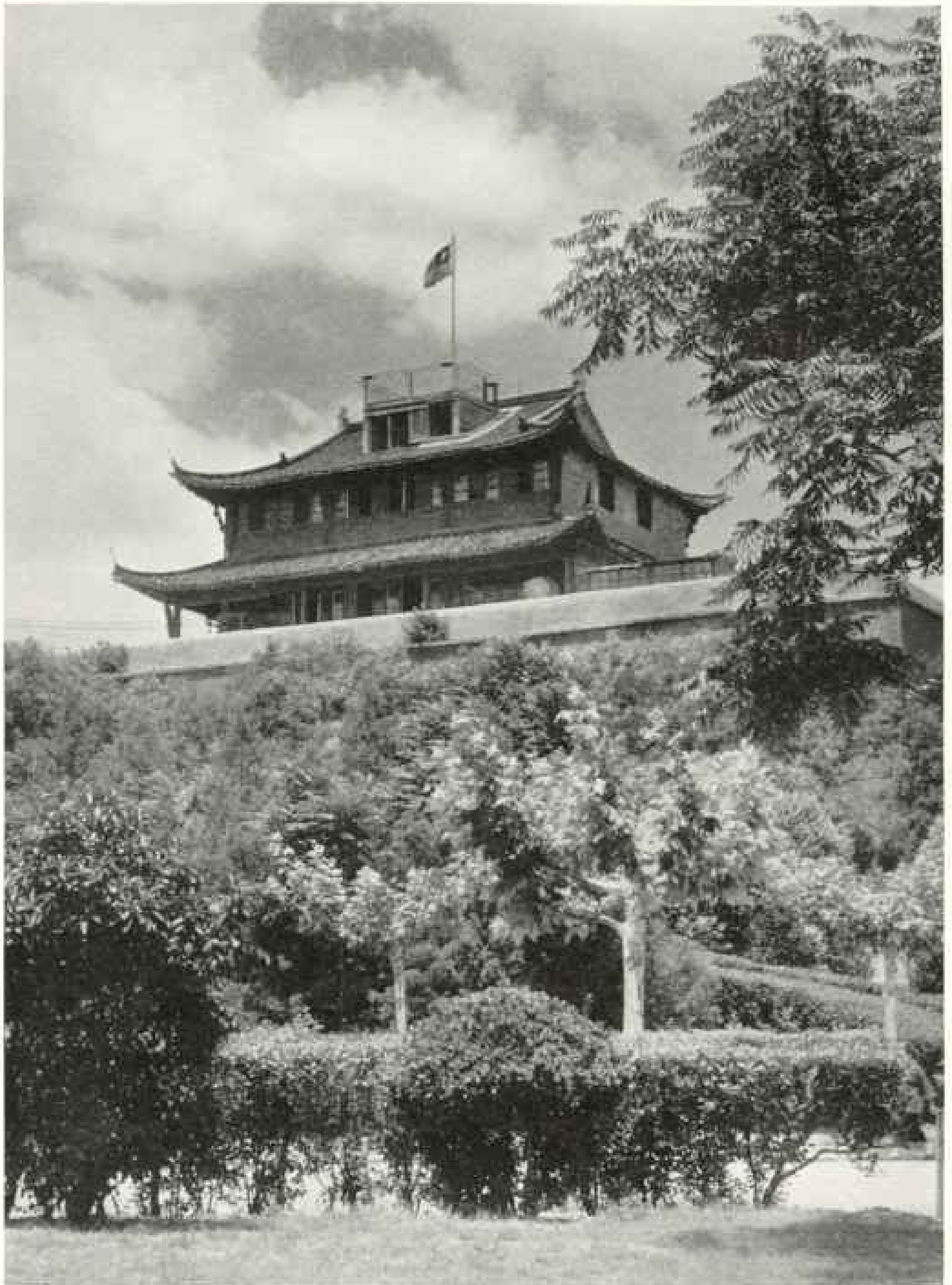
As one stands at a busy intersection, the wonder grows that the city's population is not decimated daily. Dogs, pigs, and buf-

faloos amble across the streets with an air of leisurely unconcern; pedestrians thread their way through the traffic as if blind and deaf—but by no means dumb in an argument with an exasperated chauffeur. There is no use honking away at a Chinese pedestrian; the only thing to do is to try to figure out where he is heading and then strive to keep out of his way.

The motor roads are macadamized. As elsewhere, they are under repair a good deal of the time. For ricksha travel or any other type of locomotion up to ten miles an hour or so they are ideal. However, faults in construction reveal themselves disconcertingly in bone-shattering bumps every few yards; automobiles speed up to 20 miles an hour at their peril.

But, once again, this bothers only these exasperating foreigners. If automobiles could travel 40 or 50 miles an hour, it would be impossible for pedestrians to cross the street at will! So really, argue the Chinese, rough roads are best.

Along the Chung Shan Road, one of the busiest thoroughfares in all China,



Photograph by Alfred T. Palmer

THE FLAG OF THE REPUBLIC WAVED FROM NANKING'S OLD DRUM TOWER

About 650 years ago Marco Polo saw the original tower which stood on this site. Ming Tai Tsu built this one about three centuries later while preparing for a battle with a force of rebels. He beat a huge drum, which could be heard afar as a signal to his soldiers. Airplanes, radio, and automobiles long ago made the building obsolete for military purposes and so it was converted into an observatory.



BUSES ARE CHEAPER AND QUICKER THAN THE OLD-FASHIONED RICKSHA

Rides from one end of the city to another, over the new wide thoroughfares, consume two hours in the man-powered conveyances and cost 20 cents. The more modern trip may be made in less than an hour and costs six cents (page 199).



Photographs by Alfred J. Palmer

NON-SKID PAVEMENTS COME TO NANKING!

Workmen put a dimpled surface on one of the new sidewalks, part of the building program which replaced miles of mud streets with concrete.



Photograph by Alfred T. Palmer

CHINA'S "NEW DEAL" BUILDS A PALACE FOR ITS SUPREME COURT

Structures of concrete such as this take the place of Nanking's famous Porcelain Pagoda, which vanished 75 years ago (page 190). "The Highest Legal Tribunal" reads the inscription in Chinese characters over the door. Erected in 1933, it is Western, even to the awnings and lampposts. The archway in the foreground forms the entrance to the compound—carrying out an old tradition that a building, public or private, must be enclosed by a low wall to be dignified.

nobody takes much notice of anyone else. The police officer nominally in charge of traffic leans against the lamppost and dreams of his Shantung village home. Drivers and pedestrians are equally preoccupied. Yet, somehow or other, all goes well.

About the only time a Chinese chauffeur applies the brakes—and then with a jerk that threatens to upset the vehicle—is when a pariah dog, known among foreign residents as a "wonk," crosses the road. To kill a dog would be extremely

displeasing to Buddha, who has forbidden the killing of animals. Human lives, it would seem, are held more lightly.

The Chinese notion that anything which does not belong to anybody in particular automatically becomes common property is well illustrated in the street life of Nanking. Broad as the sidewalks are in the city's main thoroughfares, it is difficult to thrust one's way through them. Women nurse their babies in public as they squat on the curb, ragged urchins play at a Chinese version of "shove halfpenny," old



Photograph by Julius Higner

INCENSE CLOUDS ADD TO THE MYSTERY OF A BUDDHIST TEMPLE

Poorer classes, always faithful followers of this ancient faith, flock to worship as of old. In their obeisance to the gods they burn candles, light incense sticks, and offer a few coppers. A believer may apply an elaborate system of merits and demerits to his conduct. This, at any time, will let him know his credit standing in his effort to gain a pleasant life in the hereafter. Ten points are allowed for making a road or digging a well. To tear down a tomb costs 50 demerits and to dig up a corpse, 100. Almost all possible good and bad acts yield set credits or debits.



Photograph by Julius Eigner

NOEMA SHEPHERD AND LESLIE HOWARD THRILL MOVIE AUDIENCES IN NANKING, TOO

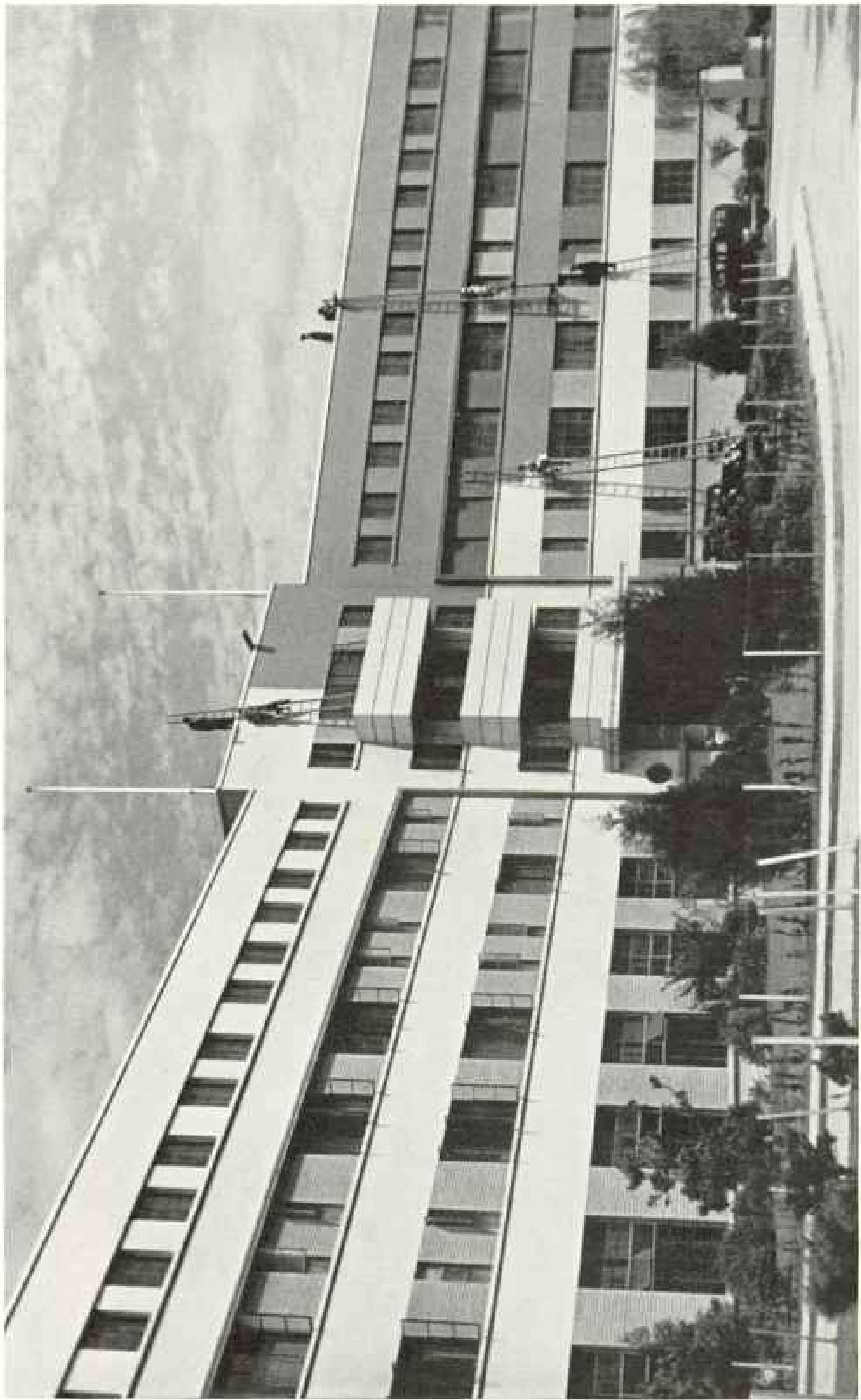
"Romeo and Juliet" was the headliner when this photograph of the State Cinema was taken. One of the capital's newest buildings, seating 7,000, it is as modernistic in design as most up-to-date theaters in the United States. There are about 53 Chinese studios, but most of them are not equipped to turn out elaborate productions. Miss Butterfly Wu is a leading Chinese movie star.



Photograph by Julius Eigner.

LUNCH TIME IN A NOODLE SHOP—CHOW MEIN IN THE MAKING

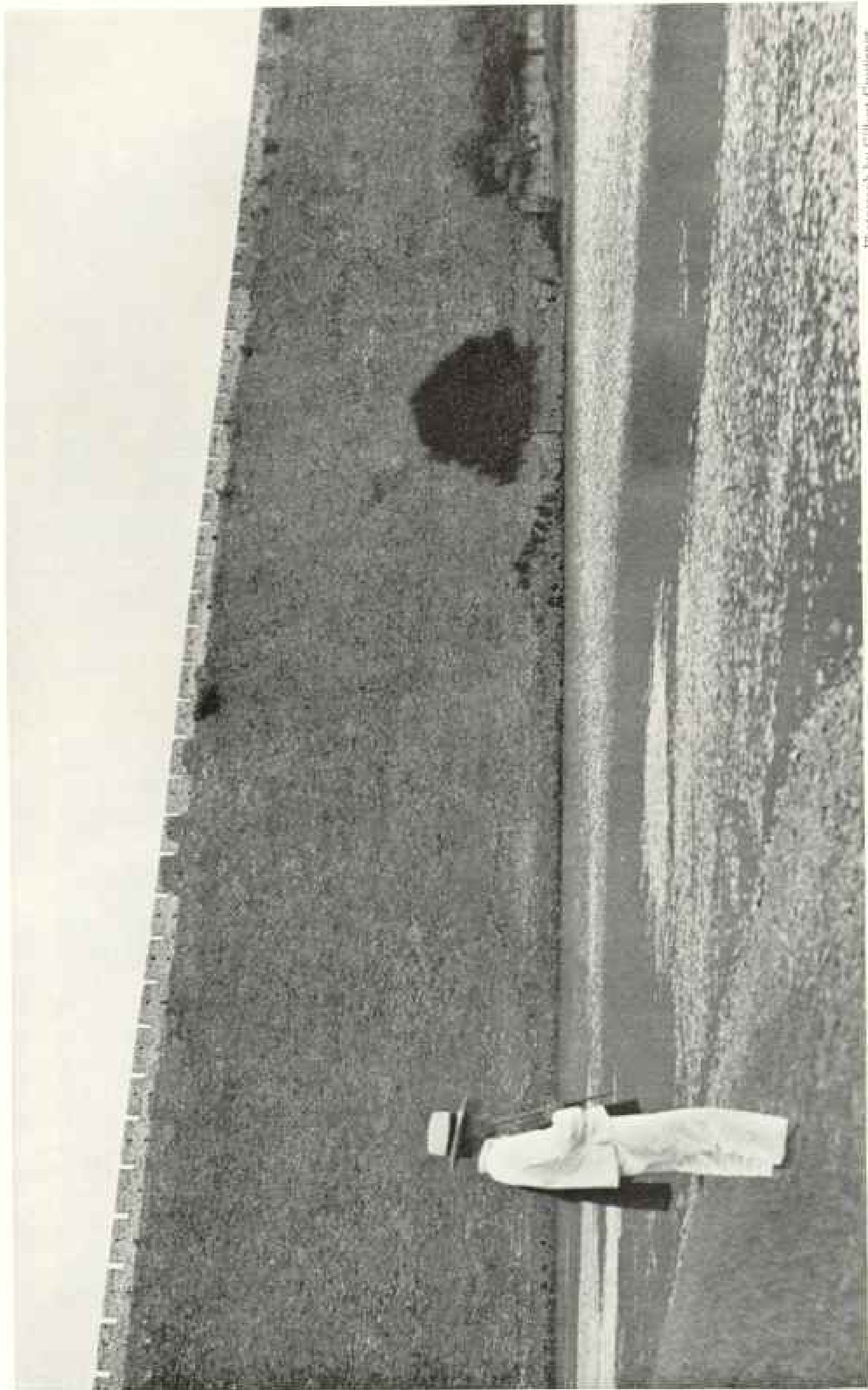
With the proper combination of flour, eggs, and salt, workers produce the long, narrow strips which are "mein" in Chinese. Later, when fried, they become "chow mein," and, if chicken is mixed in, "chicken chow mein" results. As popular in China as sandwiches in the West, this food may be prepared in almost as many forms. It is a symbol of longevity and often is presented as a gift to men on their 31st, 41st, or 51st birthdays. Although machinery has become a serious competitor, hand plants such as these, with their old equipment, survive (page 220).



Photograph by Pierre Verger from Black Star

BLACK PAINT CAMOUFLAGES A NANKING HOTEL AS AIR RAIDS THREATEN

Workmen coat the dazzling cement walls of the Metropolitan, one of the capital's newest hostels, making it less conspicuous both by day and by night. The art of concealment by coloring or screening, which gained impetus during the World War, has been carried to great lengths during the hostilities in China. Trees, artificial and natural shrubbery, and other materials hide troops of both sides, at the front and in the rear. Roadways and camps are kept from sight by similar methods.



Photograph by Gilbert Clouston

CRENELATED WALLS, 500 YEARS OLD, AGAIN PLAYED THEIR PART IN THE DEFENSE OF NANKING

This segment is part of a barrier some 20 miles long, ranging in height from 20 to 40 feet, often as thick as it is high. At some places it rises even higher. The boy playing the flute contrasts sharply with the rat-tat-tat of machine guns that resounded in December. Great holes were punched in the massive walls by siege guns.



DANCING, FROWNED ON ELSEWHERE, THRIVED AT THE INTERNATIONAL CLUB

Before the exodus last fall, the rule against public dancing helped make this modernistic center, fostered by the Government, a rendezvous of cosmopolitan society. Distinguished Chinese and foreigners are members. Formed in 1927, the club completed its new home less than three years ago.



Photographs by Julius Eigner

CHINESE AND WESTERN MANNEQUINS PEER OUT OF SHOP WINDOWS

Some Nanking stores have adopted this style of display, but it is not yet common. Such figures in Shanghai gained world-wide notice when bombs fell in its shopping center. The grotesque attitudes they assumed upon toppling over in ruined stores were depicted in news reels.



Photograph by Mrs. Biamon De Coo

"FILL 'ER UP," RINGS OUT IN THE SHADOW OF A PAGODA

A Nanking gasoline station shows that the enthusiasm for creating "atmosphere" is world-wide. The building, far from being an ancient shrine or memorial, is merely a reproduction, erected in 1934, to stimulate the sale of motor fuel and oils.

graybeards doze in the sun, and *amaks* exchange interminable gossip as they sit on small stools in the center of the street.

RICE MERCHANTS AND COFFINMAKERS
GIVE CURB SERVICE

These are trifling encroachments. Farther along the family bedding is hung across the street for an airing and the week's laundry flaps in the faces of the passers-by. Provision merchants spread their rice to dry on huge mats and coffinmakers ply their trade over half the sidewalk.

A favorite indoor sport among Nanking's houseboys is provided by the telephone, there being some 4,000 subscribers scattered throughout the city. If a foreigner wishes

to get a particular number he tells his houseboy, who dials or calls the number and converses for a few minutes with the servant who answers the telephone at the other end.

After firing off a number of routine questions relating to such matters as who one wants to speak to, why one wants to speak, what one's position is, and how much money one earns, the other boy eventually will break down and call his master.

There ensues a stern tussle over an important matter of "face." If the other boy's master is a number one *taipan* (head of a large business firm), or possibly even connected with the diplomatic service, he will not call his own master until he has



Photograph by Julius Eigner

AMERICA FOSTERED THE CORN, CHINA THE CONTEMPLATIVE AIR

As the author was taking a long rest in a wayside tea shop, off the beaten path in Nanking, he noticed this little fellow peering at him intently. He held this pose for more than an hour. They became good friends, even though the camera was ever mysterious.

heard the other master's voice. If the calling boy cannot allow such an insult to his own master, another long conversation takes place, during which the two boys try to convince each other that their own particular master is unquestionably "number one."

AN EMBARGO ON DANCING

Nanking is not lacking in social amenities, though here the New Life Movement sponsored by Generalissimo and Madame Chiang Kai-shek has imposed a series of embargoes, which include the prohibition of

public dancing. An exception was made, however, of the International Club, housed in a modern-style building erected by the Chinese Foreign Office as a social center where foreigners and Chinese may mingle in an informal way (page 208). Here a weekly tea dance was permitted and dancing also allowed after dinner four days a week. The music must stop at the stroke of twelve, however, except on Saturdays, when Nanking's Cinderellas are allowed an extra hour's leeway.

The crowds at the International Club on Saturday nights are truly cosmopolitan and there is a friendly, informal atmosphere lacking in Shanghai and in other treaty ports in China. The same may be said of the golf club thoughtfully provided

by the Foreign Office in a beautiful valley among the hills, about half an hour's automobile ride from the center of the city.

THE AMENITIES OF SINGSONG GIRL ENTERTAINMENT

Contrasting with these modern amusements is the more exotic entertainment offered by the Fu Tze Miao, or Temple of Confucius, famed as the haunt of "singsong girls," Chinese equivalent of the Japanese geisha. Here are numerous Chinese restaurants where food is served in a wide variety of provincial styles, from Cantonese

to Mongolian. There are also a few Western-style cafes, poolrooms, and a cinema.

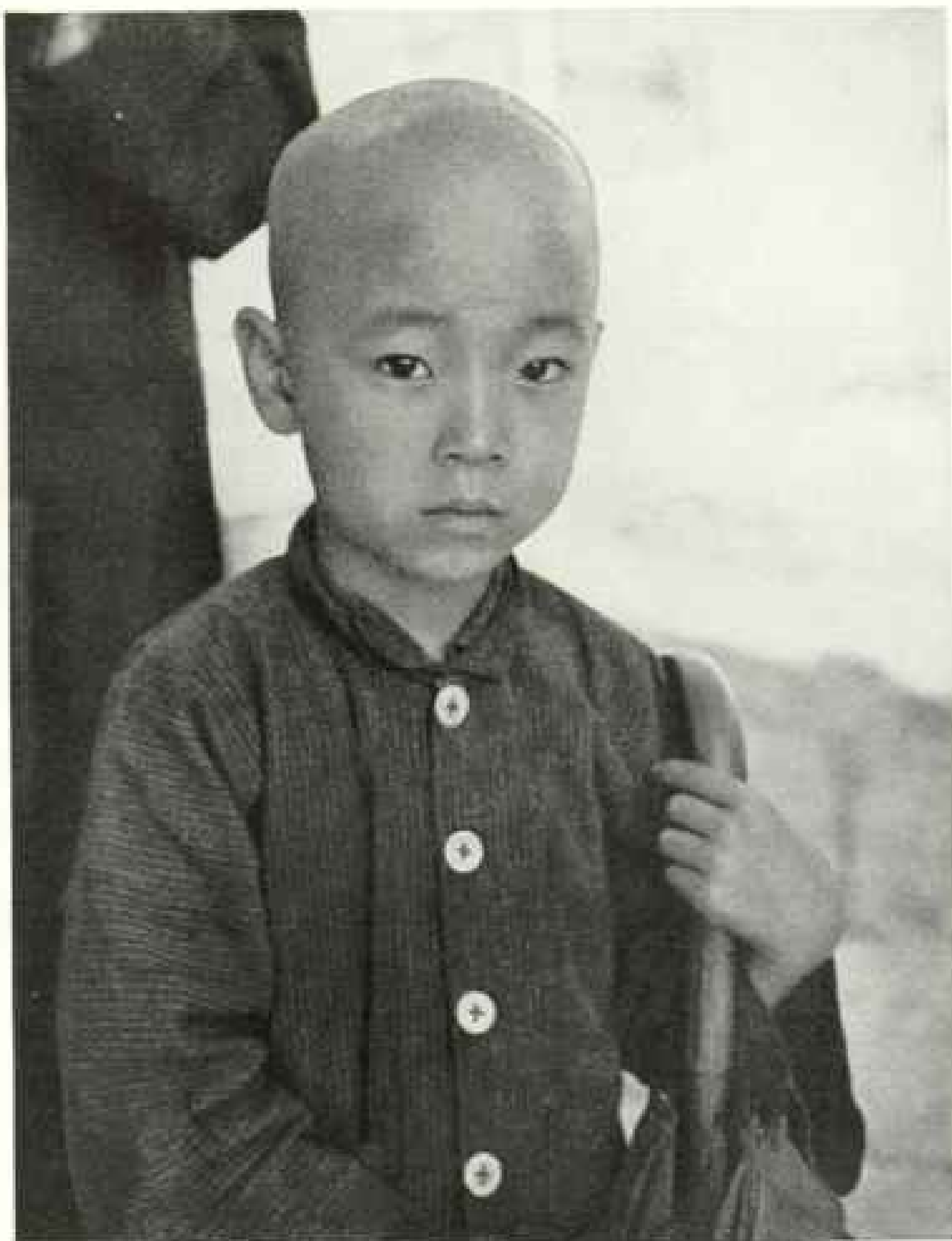
The business of getting acquainted with a Chinese singsong girl is complicated. Once I was invited by Chinese friends for dinner in one of the leading restaurants at seven o'clock in the evening. As we sat around waiting for food to be served, the important problem arose of which girls to invite to entertain us.

A servant brought red-colored invitation blanks on which the name of the girl, the name of the host, and the number of the dining room were to be inserted. Another attendant proffered a printed list giving the names of the girls available at call.

Distributed to all restaurants and cafes by an association which the girls themselves have organized, this list contained the names of all of Nanking's singsong establishments as well as of their personnel. Some of the names were decidedly intriguing, most of them being historical or poetical allusions.

MISS SECOND FLYING SWALLOW

Thus the Moon Terrace Palace advertised such attractions as Miss Second Flying Swallow (an allusion to the famous Lady Flying Swallow, the bewitching concubine of a Han emperor), Miss Precious Jade, Miss Jade Purity, Miss Orchid Fra-



Photograph by Julius Eigner

"I AM OLD, SO OLD I CAN WRITE A LETTER"

Jean Ingelow might well have been thinking of such a little fellow when she wrote the poem, "Songs of Seven." His grave mien suggests the wisdom of the ages. Armed with an umbrella, he was merely waiting along the wayside for a bus.

grance, Miss Pear Blossom, and so forth.

The Autumn Evening Pavilion offered the services of a bevy of girls rejoicing in such names as Moon Guitar, Spring Odor, Autumn Flower, Moon Magic, June Butterfly, and Chrysanthemum Beauty. One was even called Mary, a transliteration of two Chinese characters meaning "sublime romance."

Reading the names of these girls, my friends assured me, was like reading a beautiful poem.

After invitation slips had been dispatched to half a dozen of these fair maids,



Photograph by Julius Eigner.

THREE GENERATIONS BURN CANDLES TO HONOR THEIR ANCESTORS

Son, mother, and grandmother participate in the sacred family rites that are a part of every household. Departed parental spirits must not be neglected or they will withhold their blessing. Tapers and incense are burned daily.

the food arrived. Scarcely halfway through the meal, we were attacking with our chopsticks a delicious dish of sharks' fins when an attendant pulled the dingy curtain aside to announce the arrival of Miss Second Flying Swallow.

In she tripped, resplendent in a high-collared gown of flowered brocade which molded faithfully the graceful line of her willowy figure. All of the men rose at once to greet her, an act of chivalry seldom witnessed by their own womenfolk. The host introduced himself and then presented his guests. After Miss Second Flying Swallow had seated herself, eating and conversation were resumed.

Within the next half hour the Misses Sublime Romance, Spring Odor, and Chrysanthemum Beauty joined the party. There was a good deal of lighthearted badinage, apparently enjoyed immensely both by the coy maidens and the boisterous men, but there was no singing.

This first phase is called "getting acquainted." The second phase was to follow soon after. By 11 p. m. all of the girls had left, saying that they would sing now in such and such a place, and asking whether the men would not care to come.

THE HIGH COST OF SINGING

To go to a singsong house may cost as little as 40 cents for a glass of green tea. But since we were now "acquainted" with the girls, we were expected, as a matter of courtesy, to order a song. The lowest possible price for ordering a song is five Chinese dollars (\$1.50 in U. S. money), and usually \$20 will be paid.

A girl who has several such paying acquaintances is considered a topline attraction and may make as much as \$200 Chinese in a single evening. Of this sum the management keeps 40 per cent. All the money accepted by the girl must be handed over to the manager on this basis.



Photograph by Julius Eigner

FLAMING POSTERS HERALD "OPENING NIGHT"

Bustling Nanking is not unlike the rest of China in its love for the theater. A legendary performance is scheduled, for the illustration portrays Kwan Yin, Goddess of Mercy, sprinkling suffering mankind with the dew of heavenly forgiveness.

The top-ranking girls, who may net the management as much as \$100 Chinese in an evening, in turn receive a small salary and a free publicity campaign. They get a neon light sign outside the house and have their names printed at the top of the list.

After we had paid our \$20 and sipped our green tea for a time, Miss Sublime Romance appeared on the rickety stage in her ordinary street costume.

The band, consisting of a drummer, a castanet artist, and a fiddle player, struck up a tune and the girl started an aria from "A Nun Seeks Love," a Chinese opera which is one of the most famous vehicles of Mei Lan-fang, China's leading female impersonator.

A translation by Lin Yutang, Chinese writer, in his book "My Country and My People," follows:

A young nun I am, sixteen years of age;
My head is shaven in my young maidenhood.

For my father, he loves the Buddhist sutras,
And my mother, she loves the Buddhist priests.

Morning and night, morning and night
I burn incense, and I pray. For I
Was born a sickly child, full of ills.
So they decided to send me here
Into this monastery:
Amitabha. Amitabha.

I'll tear these monkish robes!
I'll bury the Buddhist sutras;
I'll drown the wooden fish,
And leave all the monastic putras.

I'll leave the drums,
I'll leave the bells,
And the chants
And the yells,
And all the interminable, exasperating religious
chatter.
I'll go downhill and find me a young and hand-
some lover.
Let him scold me, beat me,
Kick me, or illtreat me!
I will not become a buddha!
I will not mumble mita, prajna, para.

Nobody seemed to pay much attention
while the girls sang away in a high-pitched



Photograph by Alfred T. Palmer

EAST AND WEST MEET IN A BUILDING—AND ALL IS HARMONY

Planned by a Russian architect, the Ministry of Communications Building, finished in 1935, is the most impressive in the capital (page 197). The roof is suggestive of the imperial palaces of Peiping, but the design below is decidedly Western. The ministry housed here has played an important role in modernizing China, building up a mail-delivery system and extending telephone and telegraph services.

voice without a halt. Occasionally there were shouts of "Hao, hao!"—the Chinese form of applause.

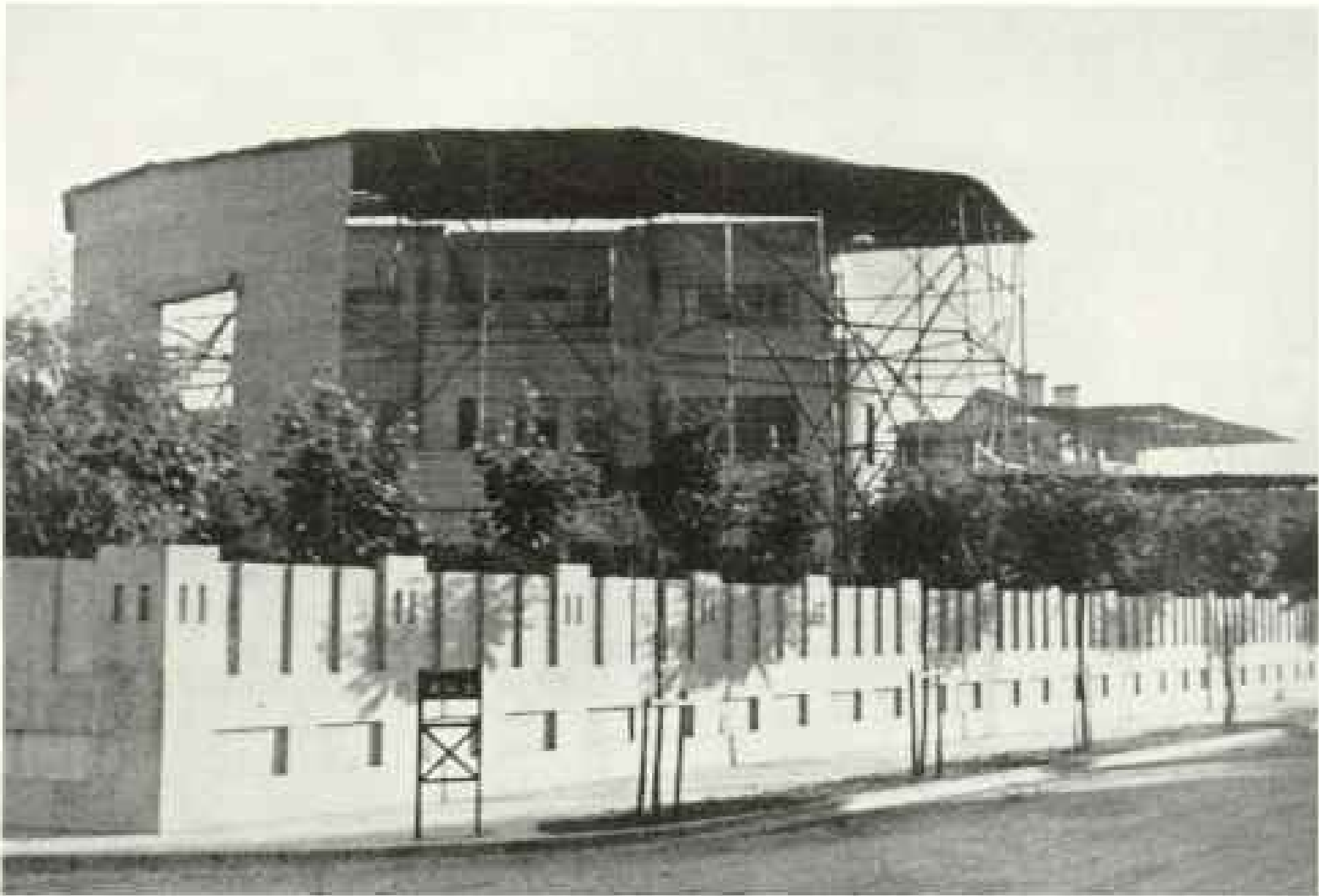
Miss Mary's performance lasted for less than 15 minutes. Before leaving the house to call on other friends, she came to our table and said goodbye, for, according to Chinese etiquette, we were now considered acquaintances.

REFORM BY TAXATION

In line with the puritanical tendency of the day in China, efforts have been made to cramp the style of the Nanking singsong girls. They are not forbidden

outright to entertain, for that would be un-Chinese and also would be flying in the face of a tradition which has its roots buried deep in China's past. Instead, the girls are required to pay such high taxes that only a favorite can permit herself the luxury of belonging to the singsong profession.

Modern Chinese go in for many varieties of Western sport. Some are content to carry a tennis racket or don a fancy sports costume and let it go at that, but these are exceptions. Practically all Western sports, with the exception of polo, wrestling, foreign-style boxing, weight lifting,



AWNINGS PULL UP OVER THE WHOLE HOUSE WHEN THE SUN GETS HOT

Many home owners in Nanking stretch huge mattings of bamboo over their roofs during the summer. Bamboo side walls help such air conditioning. Thus sunshades for individual windows are eliminated. Houses are not built to resist heat and cold to the same degree as in Western countries.



Photographs by Julius Eigner

ONCE A FAMOUS PORCELAIN CENTER, NANKING NOW STOCKS ENAMELWARE

This shop, in the homeland of china, responds to present-day demand and offers an "unbreakable" product, favored by thrifty housewives. Production of delicate ceramics and fans, for which the city once was widely known, has fallen on lean times (page 220).



Photograph by Julius Eigner

FOOT-LONG BREAKFAST ROLLS ARE HOLLOW AND FRIED IN OIL.

Peddlers open their pushcart shops at street intersections in the morning and offer the Chinese version of crullers or pretzels, called "oil sticks." Mobile stores, of which there are thousands in the capital, sell everything from socks, straw hats, and lemonade to a five-cent one-course dinner.

and rowing, are very popular with the younger set.

Besides the numerous athletic grounds, including a national stadium outside the city near the Sun Yat-sen mausoleum, Nanking has a number of public gardens, which also are a modern innovation. On holidays these parks are crowded to capacity.

One of the most popular resorts is the so-called Lotus Lake, skirting the outer ramparts of the northwestern city wall. Somewhat irregular in shape, this picturesque expanse of water is about the size of Central Park in New York City.

BOATING BY MOONLIGHT

On summer evenings when millions of pale-pink lotus flowers are in full bloom the air is fragrant with an indescribable sweetness. In hired boats revelers ply to and fro among the many islands of the lake, picnicking under the brilliant canopy of a subtropical sky.

Singing ancient Chinese airs and reciting the poems of Li Tai-po (page 218) and other famous bards, Nanking residents spend the sultry summer nights drifting over the lake's cool surface.

Considerably smaller, although perhaps even more romantic and fuller of local color, is the Mo Shu Lake, near the South Gate, outside the city. Covered by lotus, its banks fringed with weeping willows, the lake is dominated by a dilapidated old-style Chinese teahouse. Here has been preserved something of the glamour of imperial Nanking.

The lake received its name from the Lady Mo Shu, well-known beauty of the early Ming dynasty, who was the wife of one of the generals serving under the first Ming emperor.

Once when her husband was away on military service, she chanced to attract the attention of one of the royal princes, who immediately coveted her. Torn between marital fidelity and loyalty to the royal house, the lady could find no other way out than to throw herself into the lake (page 219).

A painting which is reputed to be the Lady Mo Shu's portrait hangs in the teahouse.

But the most impressive of Nanking's many scenic beauties is unquestionably Purple Mountain, just a few miles to the



Photograph by Alfred T. Palmer

NANKING'S STATE DEPARTMENT HOME IS MORE MODERNISTIC THAN WASHINGTON'S

Chinese motifs have been worked into the facade at the top of the new Ministry of Foreign Affairs Building, erected in 1934. Henry K. Murphy, New York architect, and adviser to the Nanking City Planning Bureau, has aided in the erection of most of the new government structures.

east of the city. Covered with pines, oak, and azalea shrubs, the mountain formerly was much favored by week-end hikers, mostly foreigners. In recent years, however, because of the ever-increasing surveillance in China, the upper slopes of the mountain have been barred off as a military zone.

Occasionally a courageous person advances the argument that even Hong Kong, which is fortified, allows the inhabitants of the Colony to enjoy the beauty of the heavily fortified peak without fearing that one in a million may try to probe into "military secrets."

"WHY CLIMB A MOUNTAIN YOU CAN VIEW IN COMFORT?"

But there seems to be little likelihood of bringing about a withdrawal of the ban. After all, it is argued, it is always these "foreign devils" who want to go one better than the Sons of Han. Why are they not content, like the Chinese, to sit in their vehicles and view the mountain in comfort from afar? What is this hiking business all about, anyway? Surely that is coolies' work!

The whole area outside the East Gate, including Purple Mountain, has been set aside as a national reservation where reforestation and skillful landscaping gradually are creating a quietly beautiful memorial ground which has been fitly compared to Washington's Arlington National Cemetery.

Crowning the slopes of Purple Mountain is the blue-tiled mausoleum of Dr. Sun Yat-sen (page 196). Here, within a lofty pavilion, lies the embalmed body of the great leader and on a few stated days in the year the public is admitted to look on his face.

The mausoleum was completed in 1930 at a cost of about \$1,000,000, U. S. currency, largely contributions from Chinese residents abroad.

Beyond the mausoleum is the old monastery and burial place known as "Spirit Valley," with its famous "Beamless Hall." Here are stored tablets in memory of some 24,000 heroes of the Chinese Revolution. This beautiful part of the memorial region, including the burial grounds and the pagoda which rises above with a climax of dignity and charm, was reconstructed under the direction of Henry Killam Murphy, a



Photograph by Pierre Verger from *Black Star*

RUINS OF JAPANESE PLANES TELL A MUTE STORY OF CONFLICT IN THE AIR

Shattered motors and other parts salvaged from the wreckage of bombers downed by Chinese aviators and anti-aircraft guns were placed on exhibition in "First Park," Nanking, last fall. They attracted the attention of soldiers and civilians alike.

New York architect (pages 194 and 195).*

After some years of travel and study throughout China, Mr. Murphy successfully developed a merger of Chinese architectural plan and design which preserved the rare beauty of the age-old lines and at the same time infused the best in modern construction and sanitation. He also instructed and trained a number of able young Chinese architects in this new school to carry on the work, which the National Government gratefully acknowledged by awarding him its highest decorations.

Another place which usually attracts many sight-seers, although different in char-

* Lu Yen-shih, architect of the Sun Yat-sen Memorial, who died in 1929, before its completion, joined Mr. Murphy's office immediately after graduating from Cornell, studied Chinese architecture three years, then returned to China and won an open competition for the Nanking Mausoleum and the Canton Auditorium.

acter and much farther from the city, is the Cliff of the Flowery Rocks, reputed to be the spot where Li Tai-po, celebrated Chinese poet (A. D. 705-762), jumped into the water while drunk and was drowned. There is no more likable character among the Chinese literary men than Li, who not only was a great artist, a friend of emperors and "first ladies," but also an immortal drunkard, a lover of Nature, and a fervent admirer of the eternal feminine.

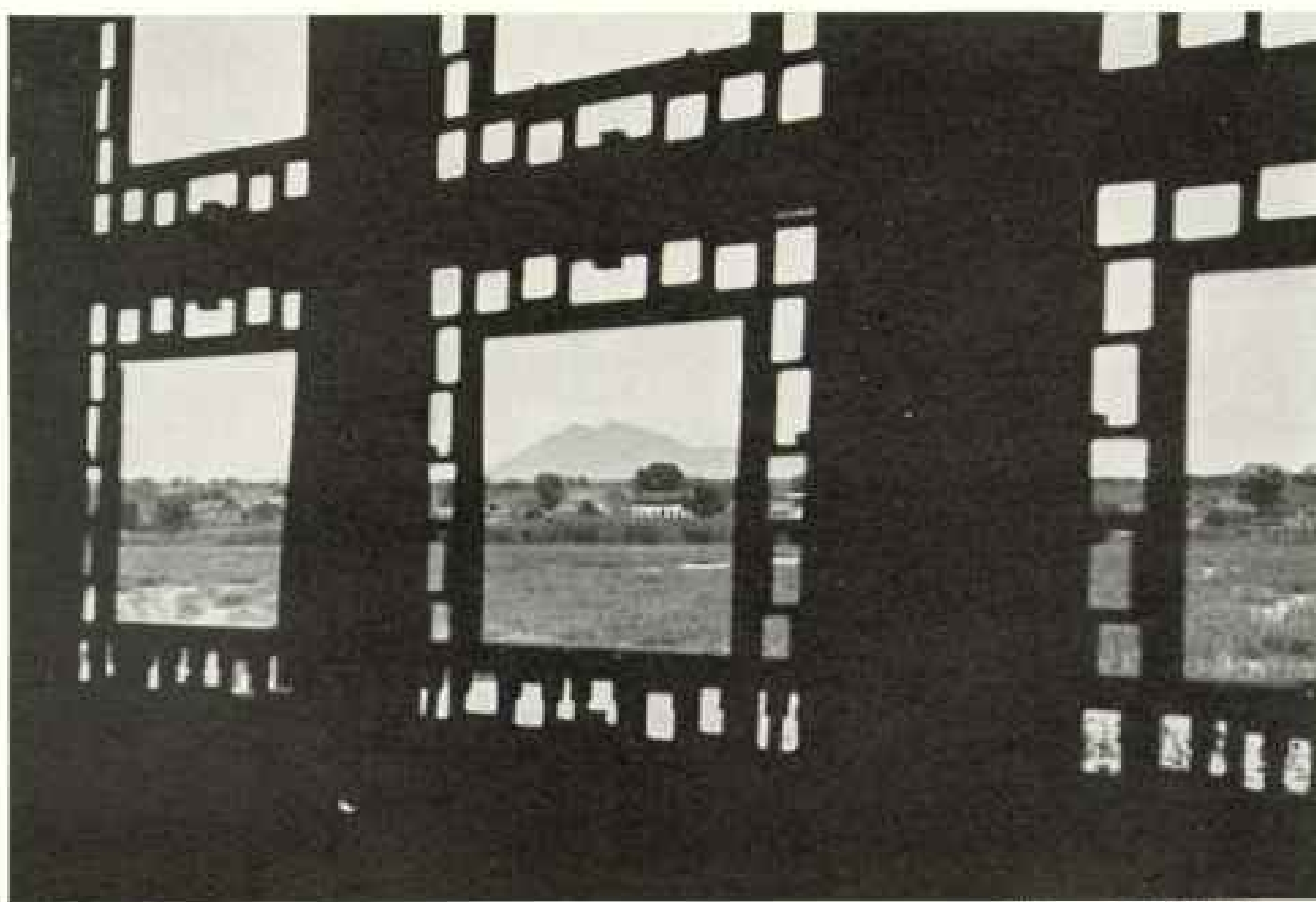
When he happened to be engaged in a drinking bout with congenial friends, Li would even disobey an imperial command to appear at court.

No wonder that the Chinese are extremely fond of him, for there is a Bohemian strain, however slight, in all of them. This trait they share with many other sentimental nations, including the Japanese and the Germans.



WAR STUNTED THE GROWTH OF NATIONAL CENTRAL UNIVERSITY, CONFINING IT WITHIN THESE PORTALS:

The domed Lecture Hall, scene of the National Congress of 1931, and other structures were to have been supplanted, but hostilities with Japan abruptly checked these plans. Near the National Library and the Sun Yat-sen Memorial a site had been selected for a splendid new group (p. 234).



Photographs by Julius Elgoer

PAVILION WINDOWS OVER MO SHU LAKE FRAME PURPLE MOUNTAIN

Once the private gardens of a Ming dynasty general, the grounds about the lake had become a favorite evening gathering place before the city began to be deserted last fall. The lake is named for Lady Mo Shu, whose tragic death took place here (page 216).

These "Flowery Rocks," so called because of their somewhat reddish tint, are situated about 18 miles to the southwest of the city. One finds there a low hill crowned by many pavilions and a high-gabled monastery. One side of the hill drops perpendicularly from a height of about 200 feet to the swirling Yangtze River below.

One fateful summer night some 1,200 years ago, so the legend runs, Li Tai-po was sitting here with a group of friends and drinking to his heart's content. Then the full moon rose and the party went down the now outworn steps to the water level and boarded a small boat.

Had Li but drunk a few cups less, he might not have taken this boat trip; yet, who knows, maybe it was ordained by fate. With his heart young and gay and full of memories of lovely ladies and the beckoning moon in a luminous sky, Li Tai-po reached for the moon's reflection in the cool water. He did not feel the chill. He reached for the moon, embraced it, and was drowned.

THE EPITAPH OF A POET-DRUNKARD

Nobody knows exactly where Li's grave is. A later poet has written the following elegiac poem in his memory:

By the River of Tsai-chi
There is Li Po's mound
Amid the endless plains of grass
That stretch to the cloud-patched sky.
Alas, there under the fallow field
The bones of him lie whose writing once
Startled heavens and shook the earth.
Of all the poets, unfortunate as they be,
There is none wretcheder, Master, than you.

Nanking has two modern movie houses where, for the most part, American films are shown, and a number of smaller cinemas. In addition there are about half a dozen theaters where night after night the glamorous pageant of China's history rolls by, where brave and treacherous generals, heroic and sensuous women, emperors and statesmen are brought back to life for the delectation of crowded audiences (pages 204 and 213).

Besides the two biggest "industries" of agriculture and government, manufacturing has been steadily growing.

The city has two cement factories, one large brick and tile factory, and even a small chemical plant. There are also numerous small machine shops, the huge repair shop of the Tientsin-Pukow Railway, lumberyards, publishing and printing

houses, one film studio, and furniture-making and food industries.

There are also many small home industries, mainly spinning and weaving. The making of tapestry and brocades, although declining in importance, was once one of the major handicrafts of the city. This old industry is said to have been introduced from Fukien some 500 years ago. Now that the well-to-do classes are taking rapidly to foreign clothing, however, this picturesque home industry tends to disappear.

TAPESTRY MAKING AND WEAVING

At the time of the first Ming emperor Hung Wu (1368), there were more than 7,000 tapestry-weaving machines in the city; today there are fewer than 200. About a third of them are not operated at all and the remainder work only spasmodically, between the Tomb Festival and the arrival of winter.

These machines, most of which are rather primitive, are operated by 93 families, nearly all of whom are members of the Nanking Weavers' Trade Union.

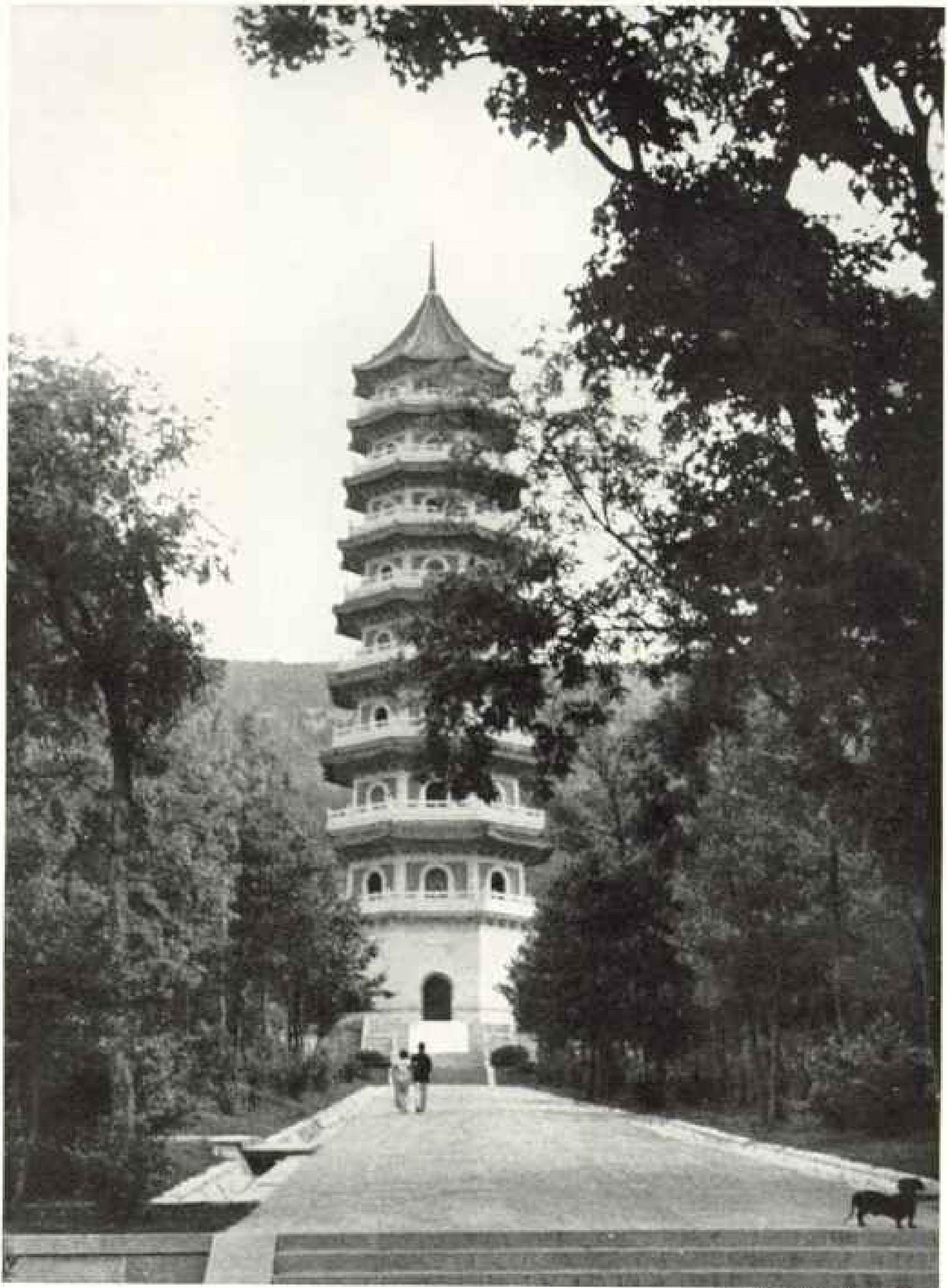
Another indigenous industry is the making of noodles, one of the staple foods of China, especially in the north. Their manufacture is carried on in small shops scattered throughout the city. Most of the work is done by hand, although more and more machines are being used. Dough is fed into a machine which presses it into thinner and thinner sheets and then cuts it into narrow strips (page 205).

Noodle connoisseurs claim that the machine-made noodles are not so good as the old-fashioned handmade variety, as the dough is not sufficiently well kneaded. Despite opposition, however, more and more noodles are manufactured by machinery.

Other industries for which Nanking has won fame are the making of fans and the manufacture of porcelain. Both of these industries were very well developed formerly, but now have fallen on lean times.

Nanking's chief exports are silk stuffs, sheep and dog skins, peas and broad beans, fans, feathers, rawhides, drugs, and salted turnips. Among the most important import items are cotton and woolen cloth, cigars and cigarettes, kerosene oil, and sugar.

In recent years Nanking surpassed and partly absorbed the trade of the two neighboring ports of Wuhu and Chinkiang. A large part of the merchandise formerly carried by junk on the Grand Canal was



Photograph by Julius Eignet

NANKING'S DEFENDERS FELLED MANY OF THESE OLD TREES AROUND CHINA'S "TOMB OF THE UNKNOWN SOLDIER"

And trunks and boughs that gave this pagoda its setting in Revolutionary Memorial Park were cut down early in December to provide a clear field for gunfire along the slopes of Purple Mountain. The 175-foot structure was built about five years ago in honor of fallen revolutionary soldiers. Many of the hoary trees around the Sun Yat-sen Memorial and the ancient emperors' tombs also were destroyed by military axes.



Photograph by Julius Elmer

LEARNING TO BECOME "HELPFUL WIFE AND WISE MOTHER"

Trained early in the ancient virtues of housewifery, this Nanking lass, hanging up the family laundry, may also absorb modern ideas of feminine independence. The perplexed young man of today, sighs one Chinese writer, seeks a wife "with new knowledge but old character."

diverted to the railway. This benefited Nanking, whereas Chinkiang, the main distribution point, lost heavily as a result.

Nanking probably could not be a major industrial city, such as Wuchang, the so-called "Pittsburgh of China." Manufacturing has been developing on a scale sufficient to supply the needs of a population of more than 1,000,000.

The authorities have given close study to public health, especially in the fields of epidemic prevention, medical attention, and street cleaning. It was necessary to start from the bottom, the main obstacle being

the apathy of a largely illiterate population accustomed to regard any sort of sickness as an act of Providence.

POLICEMEN COMPEL VACCINATION

Various clinics, including that established by the city hospital, provide free vaccinations all the year round. In addition, special vaccination campaigns are carried out in April and November, 64 vaccination squads making house-to-house visits and vaccinating each member of the family.

Each squad consists of one vaccinator and one policeman, the latter acting as an authority to enforce compulsory vaccination. In 1936, 141,893 people were thus vaccinated.

Malaria is a serious problem in Nanking; a number of per-

sons succumb to this disease each year. In February, 1934, an anti-malaria committee was organized. Mosquitoes were exterminated by using Paris green sprays over the surface of countless ponds and other bodies of stagnant water. The scope of this work was limited by lack of finances.

An Epidemic Prevention and Cleaning Committee was organized by the municipal government. Its work includes preventive inoculation against cholera and typhus, strict supervision and inspection of restaurants, groceries, and cold-drink shops, disinfection of well water by means of

bleaching powder, measures to clean streets, drainage of ditches and inspection of ponds, extermination of mosquitoes and flies, organization of temporary sanitation police squads, establishment of hostels for indigent sick, and emergency medical relief work and health propaganda.

WHERE STATISTICS ARE RARE!

The Bureau of Vital Statistics of Nanking gives the following figures for the 1935-36 period. These figures are all the more interesting because there are scarcely any statistics available in China.

Nanking's total population then was 1,013,320. The total number of deaths for this period was 17,806, making, roughly, a death rate of 17.6%, while the number of births was 23,148, representing 22.8%. The infant mortality rate was 174.2 and the birth rate by sex registration 109.1 males to 100 females. Analysis of deaths showed that 28.9% received old-fashioned medical care, 15.4% modern medical care, 8.1% both types of treatment, and 47.6% no treatment at all.

MOBILE MERCHANTS AND BARBERS

A problem was presented to the health authorities by the food peddlers, as these movable units have no fixed place for medical inspections. However, food peddlers



Photograph by Julius Elenes

STREAMERS TELL PASSERS-BY THAT THE SPRING SALE IS ON

Merchants of Nanking need no help from Westerners to advertise this annual selling event. For hundreds of years posters have darkened the streets of the shopping centers, announcing that wares are being disposed of "at a loss."

were required to register and were given instruction in sanitary measures. The movable street barber was subjected to the same regulations and prohibited from using dirty water.

There are in the city 30 hospitals, public and private, with a total capacity of 923 beds. No physicians, native-trained medical practitioners, dentists, dental technicians, or midwives are allowed to practice until they have obtained a license from the municipal government.

All the dispensaries selling Western medicine must have at least one pharmaceutical chemist or one pharmacist in attendance.



Photograph by Julius Figner

ALLIGATOR SKINS HANGING IN AN APOTHECARY SHOP CONJURE DRAGONS

Staghorn, tiger hearts, fossil bones, and snakeskins also are prescribed to cure one's ills in Nanking. Chinese medicine succumbs to modern science slowly, and remedies often are prompted by superstition. Toads relieve skin ailments because they have wrinkled hides!

Patent medicines put out by these dispensaries cannot be placed on the market without a permit.

Following the promulgation of the anti-opium decrees, an anti-opium hospital was established here for treating addicts. In 1936, 10,861 cases were received.

To combat the drug evil rigid control is being exercised with regard to the sale of narcotics. Every dispensary is required to submit a monthly report stating the amount of narcotics sold. This must correlate with the amount prescribed by the physicians. The sale of hypodermic syringes is subject to the same regulations.

At present there are 46 dispensaries selling Western medicine and 100 more shops of various kinds dispensing crude Chinese medicine.

Of a similar large scope is the educational program.

Among the higher educational institutions are the National Central University (page 219), which recently celebrated its

tenth anniversary, and the University of Nanking, founded some 50 years ago by American missionary bodies. Both of these have an enrollment of about 2,000 students.

Nanking's progress represented the spirit of a newly created and growing community, similar to the urge which moved the early American pioneers to seek new lands westward and, having found them, to make them fruitful despite difficulties and hardships. The younger generation, the ambitious, the ideal, and the energetic congregated in the city.

With the capture of Nanking by the Japanese in December the national program radiating from it as China's capital was abruptly halted. How deeply the new movement has been implanted, what traces of it will survive the occupation of Nanking and the removal of the capital to conservative Peiping, whether its leaders can keep it alive in the face of a new central government—these are questions which cannot be answered for months, perhaps for years.

THE INCAS: EMPIRE BUILDERS OF THE ANDES

BY PHILIP AINSWORTH MEANS

AUTHOR OF "ANCIENT CIVILIZATIONS OF THE ANDES," AND "FALL OF THE INCA EMPIRE"

HALF an hour after I had descended from the airplane which brought me to Cuzco, Peru,* its implacable, modernistic roar still sounded in my ears. Consequently, when I strolled into the huge Plaza of San Francisco where the great Indian market is held every day, I felt chronologically confused. In my ears the twentieth century whirred, but before my eyes was a scene that belonged to the sixteenth century at the latest.

Hundreds of Indians, mostly women, were carrying on a leisurely trade. I saw a few people of Spanish blood in modern dress walking in the arcades along the margins of the plaza, but everyone else in the scene was Indian. Perhaps the most striking indigenes of all were the llamas, those haughty and beautiful cousins of the camel. With their tall, pointed ears gaily decked with streamers of colored wool, and sometimes even with little bells of copper or of silver, they seemed to tread the earth with scornful pride.

Little by little the airplane roar yielded to the staccato, purring-clicking sibilance of a strangely other-worldly language rising into the thin, cold air around me. Presently I realized that it was Quechua, the ancient general tongue of western South America.

BARTER TRADE SURVIVES

Drawing nearer, I observed the trade going on in the booths. The first one I saw was partly modern in aspect, for a woman there was selling Woolworthian trifles in exchange for small coinage and, in the intervals between customers, she busied herself with an up-to-date portable sewing machine.

A few steps farther on, however, I came upon another booth which was altogether antique in appearance. A sturdy Indian woman was offering haunches of llama meat, and another was slowly, reluctantly, adding a potato at a time to a pile on the ground.

Both women were unhurried and serene, all their emotions being concentrated in their faces. The expression of the seller was one of determined avarice; that of the buyer was one of steadily increasing hesitancy (Plate VI).

I could see that very soon the buyer

would reach her limit and would take herself and her potatoes off to some other booth whose mistress had less lordly ideas about the potato value of a haunch of llama.

I was, indeed, witnessing an authentic barter trade such as was universal under the Inca Empire. My mind turned back to olden times when, between about 1100 A. D. (the Crusades were then stirring Europe to holy zeal) and the middle of the 15th century (when Gutenberg and his printing press were helping to inaugurate our modern age), the Incas gradually built up a solidly organized realm of amazing size.

I reflected that, in a period equal to that between the arrival of Columbus in the Antilles and our own Mexican War, a family of American Indians had created an empire worthy to be compared with the realms of Alexander, of Caesar, of Charlemagne, or of Napoleon; an empire, moreover, which outshone others because its benevolent and sagacious ruling caste, the Incas, strove successfully to make all their subjects prosperous and happy within the bourns of their Indian culture.

Speculation has attributed to the Incas and their subjects various fantastic origins. But modern science knows that both were American Indians who, by their exceptional ability in making use of their natural surroundings, succeeded in building up a great American Indian civilization.† The truth here, as so often elsewhere, makes a profound appeal to the imagination and to the universal desire for romance and heroism.

QUECHUA-SPEAKING LLAMA HERDERS

Please note, however, the phrase "the Incas and their subjects." The Incas were not a whole people, as were the Maya. In reality, about 1100 A. D., the Incas were a small tribe of Quechua-speaking llama herders dwelling on a cold and lofty plain some leagues southwest of Cuzco. Their homeland had a stark, grandiose beauty, as does every other region up and down the

* See the National Geographic Society's New Map of South America, issued as a supplement to THE NATIONAL GEOGRAPHIC MAGAZINE, December, 1937.

† See "America's First Settlers, the Indians," by Matthew W. Stirling, THE NATIONAL GEOGRAPHIC MAGAZINE, November, 1937.



Photograph by Alfred T. Palmer

IN THE CATHEDRAL AT LIMA LIES THE SUPPOSED MUMMY OF FRANCISCO PIZARRO

The prostrate form is clearly visible through the glass just below the crouching lion. Visitors usually see this somewhat grisly exhibit in the flickering light of a taper held by the verger, for all is dimness here. The inscription, translated, reads: "Captain General Don Francisco Pizarro, founder of Lima on January 18th, 1535, died June 26th, 1541. His remains were deposited in this urn on the 26th of June, 1891, with the consent of the Honorable Provincial Council of Lima and upon the initiative of the Alcalde (Mayor) Don Juan Revoredo." Pizarro was assassinated by followers of his executed rival, Almagro.

Andes, but it was unfit for agriculture and for the shaping of an improved mode of life.

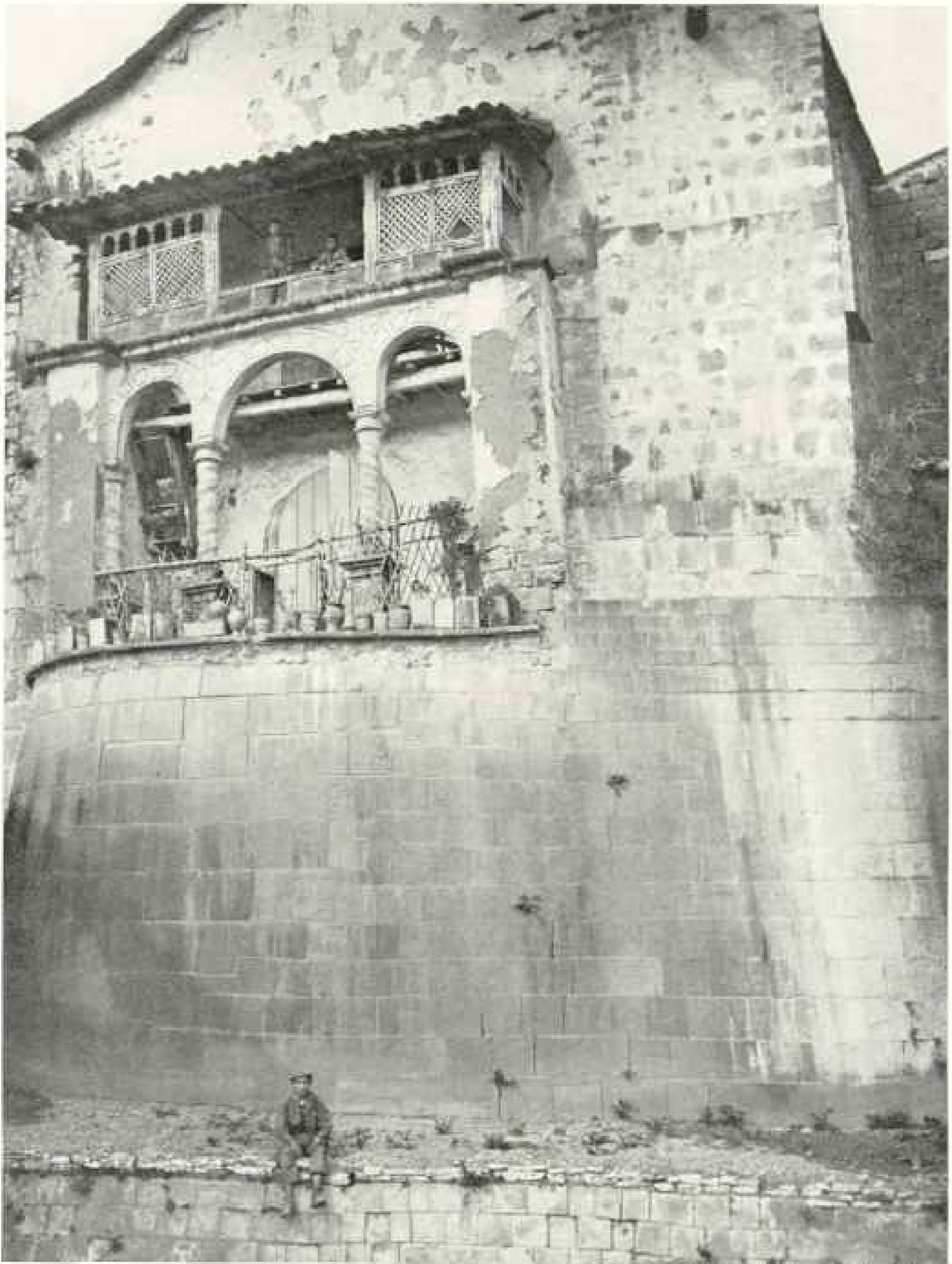
Although there was nothing outwardly to distinguish the Incas from hundreds of other little tribes, they already possessed an inborn genius for growth and organization. It stirred within them at about the time mentioned, filling them with a conviction that a "manifest destiny" awaited them.

Their first step towards dynastic grandeur was a tribal migration from their bleak homeland down into the fair and fertile valley of Cuzco (page 240), rimmed with sublimely soaring, snow-crowned mountains and watered by the headlong torrent of the Huatanay River.

Ancient legends of how it was done are numerous and quaint, but contradictory. The version preserved among the Inca caste itself, and transmitted to us by reliable Spanish chroniclers, is that the Inca tribe, led by Manco Capac and his sister-wife Mama Oello, made a slow, deliberate march upon Cuzco.

Arrived there, they made good their dominion over the folk already in possession of the valley by a picturesque and wily appeal to their credulity and superstition.

A beautiful lad named Roca was clad in a garment thickly covered with spangles of burnished gold and, thus arrayed, he appeared at the mouth of a cavern above



Photograph by Luis D. Giannini

PARTS OF THE MAGNIFICENT INCA TEMPLE OF THE SUN MAY STILL BE SEEN IN CUZCO

The Spanish Monastery of Santo Domingo was built on its ruins (page 243), but plainly visible at one end are the smoothly cut and fitted stones of the older edifice, the finest known example of curved-wall Inca masonry. Spanish-Moorish architecture and stuccoed walls above contrast strikingly with the simple strength of the Inca stonework below. A source of wonder is the skill with which this hard stone was cut into blocks of exactly the right shape and fitted without mortise or mortar to form the curving outer wall of the temple. Inside the temple, the farther side of this wall was covered with an enormous golden plaque representing the Sun. Surrounding a court were other structures, one dedicated to the Moon and done entirely in silver; others honoring the Stars, the Rainbow, the Thunder and Lightning.

Cuzco where the rays of the sun fell upon him and made him gleam dazzlingly.

Pointing aloft to that radiant figure, which seemed to be a part of the sun fallen to earth, the astute strategists persuaded the wonder-struck multitude that the shining boy was the Son of the Sun, to whom their entire allegiance was due.

Thus Sinchi Roca (War Chief Roca), who may be dated between 1100 and 1140 A. D., the first really historic ruler of the Inca dynasty, was accepted by the dwellers in Cuzco as a divine monarch sent to govern and protect them. By gaining their reverence and loyalty, Sinchi Roca formed the nucleus of what was to become a mighty empire.

As I have hinted, there were other legends concerning Inca origins; the version given here is that which seems most nearly authentic. A curious aspect of it is the incestuous marriage between Manco Capac and his sister, Mama Ocllo. It may have been a custom of the primitive Incas, as this legend implies; or it may be an element inserted into the legend much later when, the Empire having grown great and its rulers proud of their sacred blood, sister-marriage became obligatory.

At any rate, the Incas, from Sinchi Roca down to Pachacutec, the eighth Inca, seem not to have married their sisters; rather, they allied themselves with the daughters of powerful chiefs whose friendship they needed. Not until their might became so strong that such support could no longer enhance it did the historic Incas, beginning with Tupac Yupanqui, revive or initiate the practice of wedding their sisters to preserve the holy purity of their blood (page 249).

THE BUILDING OF THE INCA REALM

Only from an airplane high above the majestic mountain panorama can one clearly understand the magnitude of the empire-building accomplished by the Inca dynasty. From such a lofty viewpoint one sees the endless, tumbled ranges of the Andes, flanked on the west by a long strip of coastal desert crossed by occasional green bands marking the course of a westward-flowing stream, and on the east by a vast jungle world stretching away toward the Atlantic.

The huge area wherein the Incas shaped their empire was one of infinite diversity, comprising innumerable divisions and subdivisions separated by all but impassable

barriers: deep chasms carved by rushing rivers, leaping ranges of peaks to be crossed only by difficult passes where the air is thin and piercingly cold, deserts where all things shrivel under the onslaught of the sun.

Left to themselves, the innumerable peoples of the highlands and of the coast would never have coalesced into an empire. Each tribe, ensconced in its compact valley home, would have gone on indefinitely living on the produce of its fields and llama herds with no thought for the world beyond the mountains. True, sundry chiefs here and there, especially on the coast, succeeded in forming confederacies and kingdoms of some extent, but none knew how to build an empire on the scale that the Incas achieved (pages 227, 238, 242, 243).

We should not lose sight, however, of the fact that the Incas began their career in a very modest way. At the end of the reign of Sinchi Roca their realm was a small and close-knit kingdom which included Cuzco and the country around it. The southern frontier was La Raya Pass, at the head waters of the Urubamba River, into which, after rushing through Cuzco, the Huatanay River flows.

At this pass, in the Vilcanota Range, a defensive wall of uncut stones laid in clay was found to run east-west across the pass. In all likelihood it had marked the boundary, in pre-Inca times, between the Quechua-speaking people to the north of it and the Colla-speaking folk of the Titicaca Basin to the south. The wall itself and the rough-stone houses for its defenders may still be seen.

Small though it was, the realm which Sinchi Roca left at his death must have been perfectly organized internally, and even then the chief care of the ruler was to ensure the well-being of his subjects and thus make them his zealous supporters. To do less would have belied the sacred character to which he pretended.

"LEFT-HANDED ONE OF PIOUS ACTIONS"

The second Inca, Lloque Yupanqui (Left-handed One Who will be Renowned for Pious Actions), ruled from about 1140 to about 1195.

Having begun his reign by inspecting all parts of his realm and visiting all the *curacas* (chieftains) who were his vassals, this Inca passed beyond the Vilcanota wall and came to grips with the Collas (also called Aymarás), a sturdy folk who were creating

IN THE REALM OF THE SONS OF THE SUN



© National Geographic Society

Painting by H. M. Herget

"ONE OF THOSE NEW PROVINCES WAS SO POOR THAT THE INCA, JESTING,
EXACTED A TRIBUTE OF LICE!"

Three noblemen meet on the road and laugh at the latest court jokes. The lice tribute actually was imposed by ironic Inca Tupac Yupanqui (about 1448-1482). In the first of these paintings, based upon Spanish records and Inca relics, Mr. Herget shows a coastal gentleman in fine cotton robe, with golden earplugs and gold-headed staff of office; a highland official in vicuña wool tapestry tunic; and an eastern slope dweller all in feathers.



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ALDOP AND LORDLY AS THE SNOW PEAKS OF THE ANDES, AN INCA PRINCE RIDES TOWARD CUZCO ON THE SHOULDERS OF HIS MEN

Favored nobles bear the gorgeous, feather-adorned canopy, and sturdy retainers of lower rank are honored to carry the ornate throne on poles decorated with golden fox-heads. Priests come next, with their *quipus*, or knotted-cord records; then warriors in armor of polished bronze plates with javelins, war-clubs, painted shields, and handleless battle-axes. The ax motif is seen in the headdress of the prince, a member of the imperial family.



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RICH TRIBUTE FOR THE INCA, "SON OF THE SUN," FLOWS IN ON THE BACKS OF ILL-TEMPERED LLAMAS

Painting by H. M. Herget.

One beast has been loaded beyond the point permitted by llama union rules and in protest ejects from its mouth what a Portuguese chronicler quaintly described as "a wonderful stinking water"—even as its descendants do today when irritated. The tribute here consists of fine textiles and pottery, one piece of which has a portrait face; also an aryballus of *chicha*, or maize beer, borne on the back of the llama herder, who is paying his own taxes by driving this pack train for the State. Just ahead is the house of the man who looks after this particular stretch of road.



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RELAYS OF SWIFT POST-RUNNERS LINKED THE EMPIRE

Fresh fish from the sea for the Inca's dinner, word of troop movements, of new campaigns — all sped through the Andes by barefoot express, averaging seven miles an hour, day and night. Here a fresh courier waits at his stone posthouse for the knotted-cord record for his three-mile stint.



Paintings by H. M. Herget

"GIVE US, O SUN, THY PURE AND SACRED FIRE"

Resplendent in his flamelike robe, the *Vizcar Lamu*, or High Priest of the Sun, holds aloft a golden bowl shaped to concentrate the rays upon the tinder it contains and set it smoldering. With this he will light the ceremonial fire on the open-air altar behind him.



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Painting by H. M. Herget
ACROSS A DEEP RAVINE FROM THEIR FATHER'S PALACE, DARK-EYED DAUGHTERS OF AN INCA OFFICIAL GO DOWN TO A MOUNTAIN SPRING

After cooling their faces and filling their jars, the gay little girls, in cotton dresses embroidered in vicuña wool, will skip back across the shakyl-looking suspension bridge to the stone, thatch-roofed dwelling with its garden terraces. At about their age, eight to fifteen years, many virgins were consecrated to the service of the Sun and placed in vast, conventlike establishments, the houses of the Chosen Women (Plate VII).



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INCALAND GAVE THE WORLD THE "IRISH POTATO"

Native to Peru, it was introduced to Europe by the Spaniards. This farmer digs with his wooden foot-plow while his sister wields her hoe and his wife carries home a bag of potatoes. From his shoulder hangs a water gourd. Beyond, terraced farms climb the mountain slopes.



Paintings by H. M. Herget

IN THAT MONEYLESS EMPIRE ALL TRADE WAS BY BARTER

An impasse has been reached in this wordless drama of the market-place—a scene which is often duplicated in present-day Peru. The prospective buyer has piled up a heap of potatoes, but not enough, and the hard-eyed owner still clings to her haunch of llama meat.

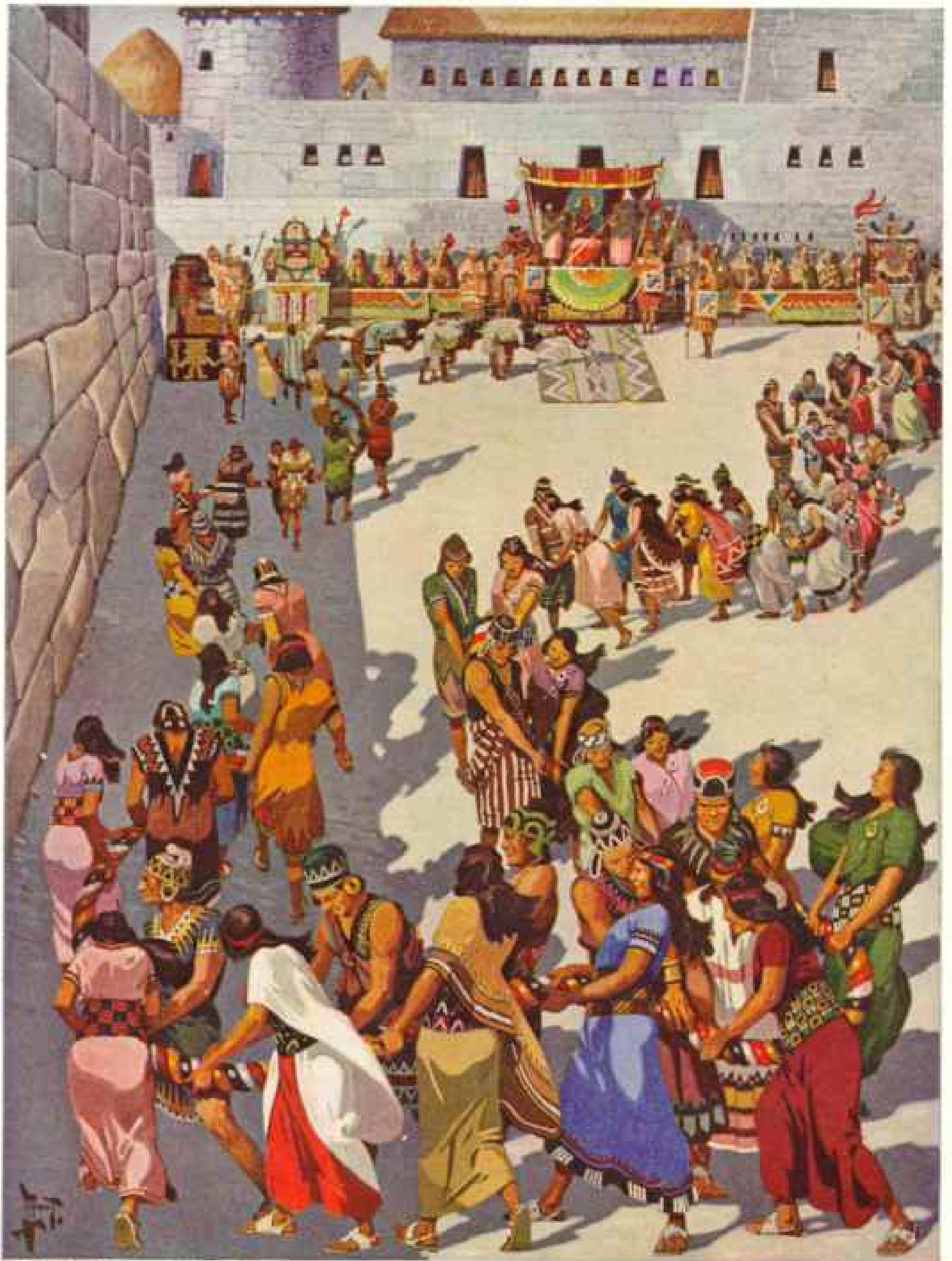


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UP THE STEPS OF THE TEMPLE OF PACHACAMAC A HIGH PRIEST BEARS THE GOLDEN IMAGE OF THE SUN

Painting by H. M. Herget

Behind him walks the assistant high priest carrying a sacred drink in two gold cups. Then come the Chosen Women of the Sun, courtiers, soldiers, and minor priests. Beyond, all the inhabitants lie flat on their faces. The Incas' armies had just conquered this old and holy coastal city of Pachacamac and, instead of abolishing the existing religion, they cannily combined it with their own.



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Painting by H. M. Herget

A GIANT SERPENT OF MANY-COLORED ROPE IS BORNE BY A WILDLY SNAKE-DANCING THROUGH THROUGH THE HOLY SQUARE AT CUZCO

It stops with its pinnalike head in front of the brilliantly bedecked imperial throne of the Inca, who is flanked by high priests and the mummies of his ancestors. Mummified in flexed position, these Incas of earlier days made comical bundles about four feet high and looked as if they were solemnly sitting. They were brought out in state from the Temple of the Sun and ranged here to watch the annual dance.

a state not dissimilar to the Inca's own. By skillfully combining diplomatic blandishments with martial force, Inca Lloque Yupanqui brought into his realm the northern half of the Titicaca region. He then proceeded to organize it in accordance with the Inca policies of merciful rule and of justice for all.

Thus he made the newly won territories an integral part of his realm. At his death Incadom was equal in extent to Massachusetts, Connecticut, and Rhode Island together.

Mayta Capac (Diligent Great One), who ruled from about 1195 to about 1230, continued his father's policies and his conquests. On reaching the ruins of Tiahuanaco, near the southern end of Lake Titicaca, Mayta Capac beheld the vestiges of an architectural style far superior to the construction of rough stone laid in clay, hitherto the only one known to the Incas. He saw, as we may see today, superbly cut and carved stones held together when necessary by copper clamps let into sockets shaped for their reception (page 250).*

The practical lessons to be derived from this superior technology—which had been practiced some centuries before by the people of the Tiahuanaco Empire (A. D. 600-900)—were not thrown away upon Inca Mayta Capac. He seems to have had a veritable genius for engineering and architecture. From the methods of building which he studied at Tiahuanaco arose a vastly improved Inca architecture.

Likewise this great engineer was the first Inca to build a suspension bridge of stout aloe cables swung from massive piers of masonry (Plate V). The fame of this bridge spread far and wide, much increasing his already high prestige among the tribes.

Mayta Capac also was the first Inca to cross the maritime cordillera and to lead his army down into the coast country. There he had to contend not only with men but also with the hot, dry, dense air of the lowlands.

To the large-lunged mountain folk the coast is very trying, and so Mayta Capac began to use a system which was later brought to high perfection by his successors. He divided his large army into sections, each of which served only a short time on the coast and afterwards went back to the mountains to recuperate.

* See "The Heart of Aymará Land," by Stewart E. McMillin, in *THE NATIONAL GEOGRAPHIC MAGAZINE*, February, 1927.

By a characteristic combination of military and diplomatic tactics, Mayta Capac brought a part of the civilized population of the southern coast into the Empire.

Typical of his policy was his treatment of the wizards who had long been practicing their arts in that region. Instead of trying to suppress them and thereby driving them underground, he recognized them as a professional class whom the people might consult freely. Doubtless he argued that their spells might do a little good and that they certainly were not strong enough to do much harm.

In a relatively short reign, from about 1230 to about 1250, the fourth Inca, Capac Yupanqui, continued his father's conquests on the coast and so increased the realm that at his death it was equal to New England, New York, and New Jersey combined. He improved the internal organization and in general ruled wisely.

CHANCAS WERE FORMIDABLE FOES

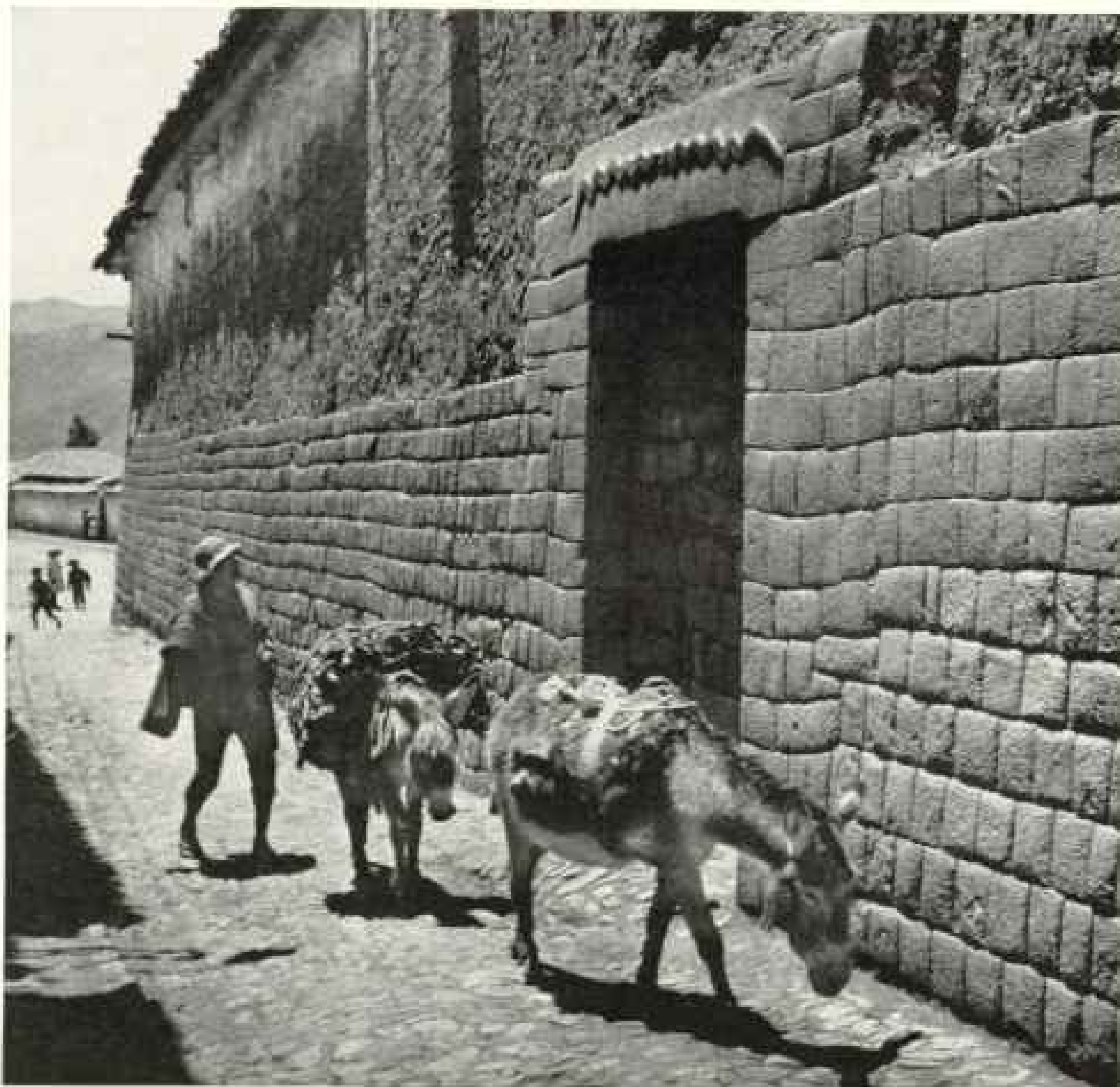
Inca Roca, about 1250 to 1315, wishing to expand his empire in a northerly direction through the highlands, found the way barred by the most formidable foe the Incas had yet encountered.

These were the Chancas, a people of forest-country origin who had come up into the highlands north of Cuzco from the eastern jungles. They were terrifically fierce, inordinately ambitious, and madly courageous. Inca Roca early became aware that they were implacable foes of his house: for, in his encounters with them, he was far from successful. Thus the Chancas became a black and menacing cloud on the northern horizon of Incadom.

Nor was his son, Yahuar Huaccac (He Who Weeps Blood), a man fit to confront a peril so grave as that personified by the Chancas. This, the sixth Inca, who ruled about 1315-1347, seems to have been cursed from his childhood onward either by some malady or else by some other evil influence. We know, at any rate, that he was the only Inca who was feckless and cowardly.

Modern psychologists would probably explain him in terms of an inferiority complex because of unfortunate events in his extreme youth. However that may have been, the Chanca menace increased mightily in his time.

Finally it became evident that something drastic would have to be done. The Chan-



Photograph by Jacob Gayer

CENTURIES HAVE PASSED, BUT INCA WALLS STILL STAND

Above the doorway writhes in stone the totemic serpent of the ancient rulers. This typical Inca street in Cuzco was probably an important thoroughfare, as it led directly toward the Temple of the Sun (page 227). The lower part of the wall, of cunningly fitted stones, was reared by subjects of the Sons of the Sun; the upper part is of later construction, recalling that the Spanish conquerors built the upper stories of Cuzco on ground-floor Inca walls.

cas were at last definitely on the march. With hideous yells and frantic brandishing of weapons they were moving furiously southward, intent upon capturing Cuzco. Had they succeeded—and they very nearly did—Inca-dom would have been utterly crushed and all its hard work undone.

Prince Hatun Tupac, son and heir of the inefficient Inca, was the man sorely needed to oppose an enemy so redoubtable. First receiving in a dream mysterious counsel from a deity who announced himself to be the Creator-God, Viracocha, the prince assembled the best and bravest of Inca manhood to be the nucleus of his army, and to

them were added half-reluctant allies from other parts of the realm. At the head of these forces the prince marched to the broad plain of Anta and there awaited the enemy.

THE QUELLING OF THE CHANCAS

Presently the Chanca horde came swooping down the pass into the plain, their trumpets and drums resounding defiantly, their voices shrieking warlike cries. The battle was joined, and for many hours the lines of struggling warriors swayed back and forth, plying star-headed clubs, javelins, slings, and knives of flint or bronze.



Photograph by Ewing Galloway

DIGGING UP MUMMIES IN INCA RUINS IS GRUESOME BUT PRODUCTIVE RESEARCH

Prized possessions were buried with the dead, so many articles shedding light on the daily life of these people have been found at Pachacamac—knitting utensils, a boy's sling, earthen jars, pieces of fine vicuña-wool fabric, ornaments of gold, silver, or shell. The earth around the temple is sown thickly with bodies, for apparently all wished to lie in holy ground. They were mummified in a flexed, sitting position (Plate VIII). Pachacamac, an ancient coastal city, was conquered by Inca armies from the Andes (Plate VII).

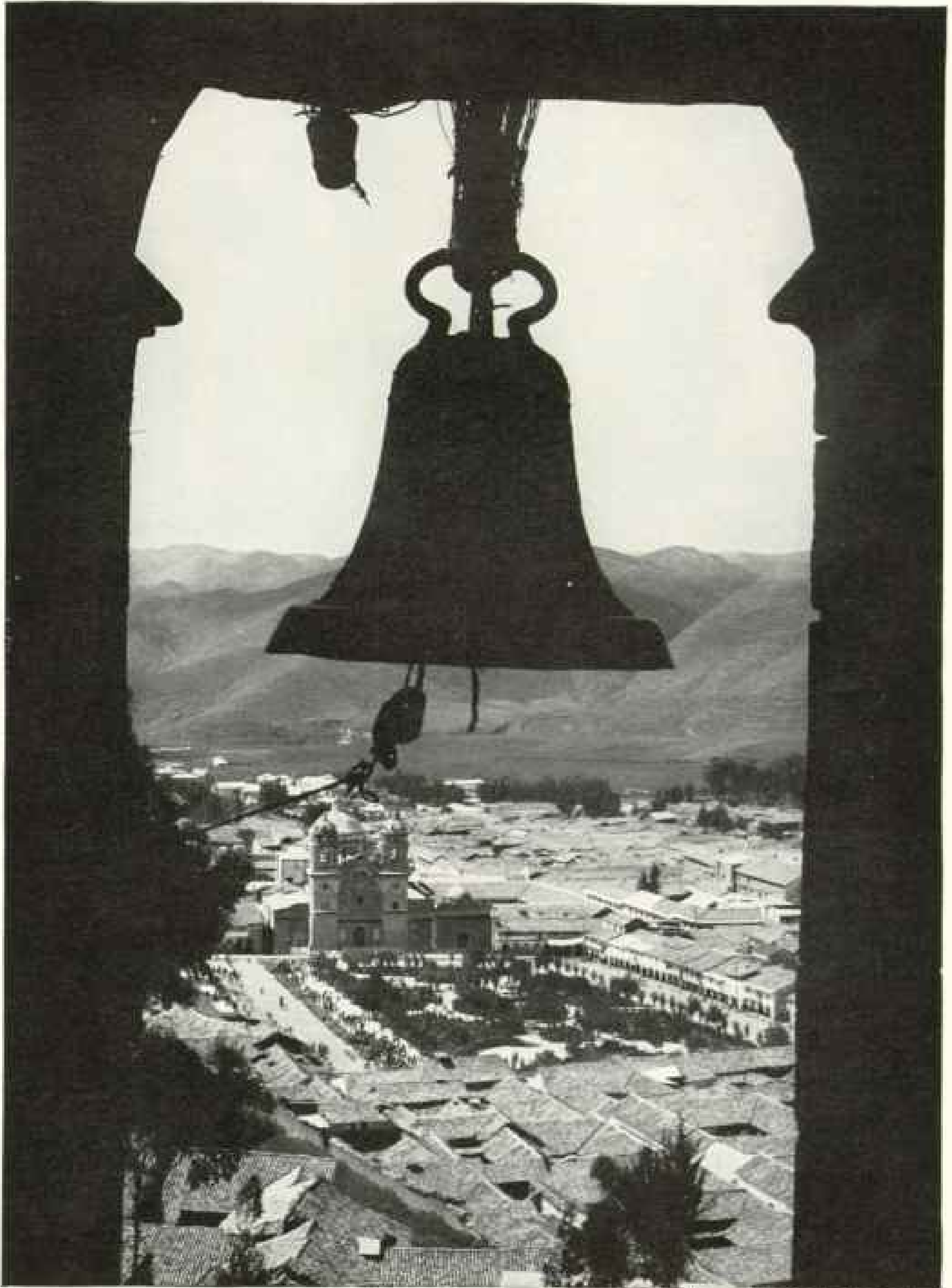
Prince Hatun Tupac was in the forefront of the combat, exhorting his men and himself slaying many a foeman. At last the tide turned definitely in the Incas' favor and the Chancas began to retreat. Only then did the prince's hesitant allies, who had been waiting to see whom fortune would approve, join in with the Inca troops. As these new contingents came up, the prince and his men, in their triumph, shouted to the enemy, "Behold! The very bushes and rocks of the plain are becoming soldiers to defend our Father the Sun!"

To the Chancas it seemed to be so in very truth. Their retreat became flight

and their flight became headlong rout. Prince Hatun Tupac had saved the day and so assured the future of his dynasty. Thereupon, in grateful remembrance, he took the name of his counselor, the god Viracocha, and by it he is best known in Inca history.

A VICTORY PARADE

The conquest of the Chancas by the Inca Viracocha was solemnly celebrated in Cuzco. A superb triumphal pageant was held in Coricancha, the Temple of the Sun. Captains of the victorious army, soldiers, and citizenry all took part. In their midst



Photograph by Martin Chambé J.

OLDEST CITY IN SOUTH AMERICA IS CUZCO, PERU, ANCIENT CAPITAL OF THE INCAS

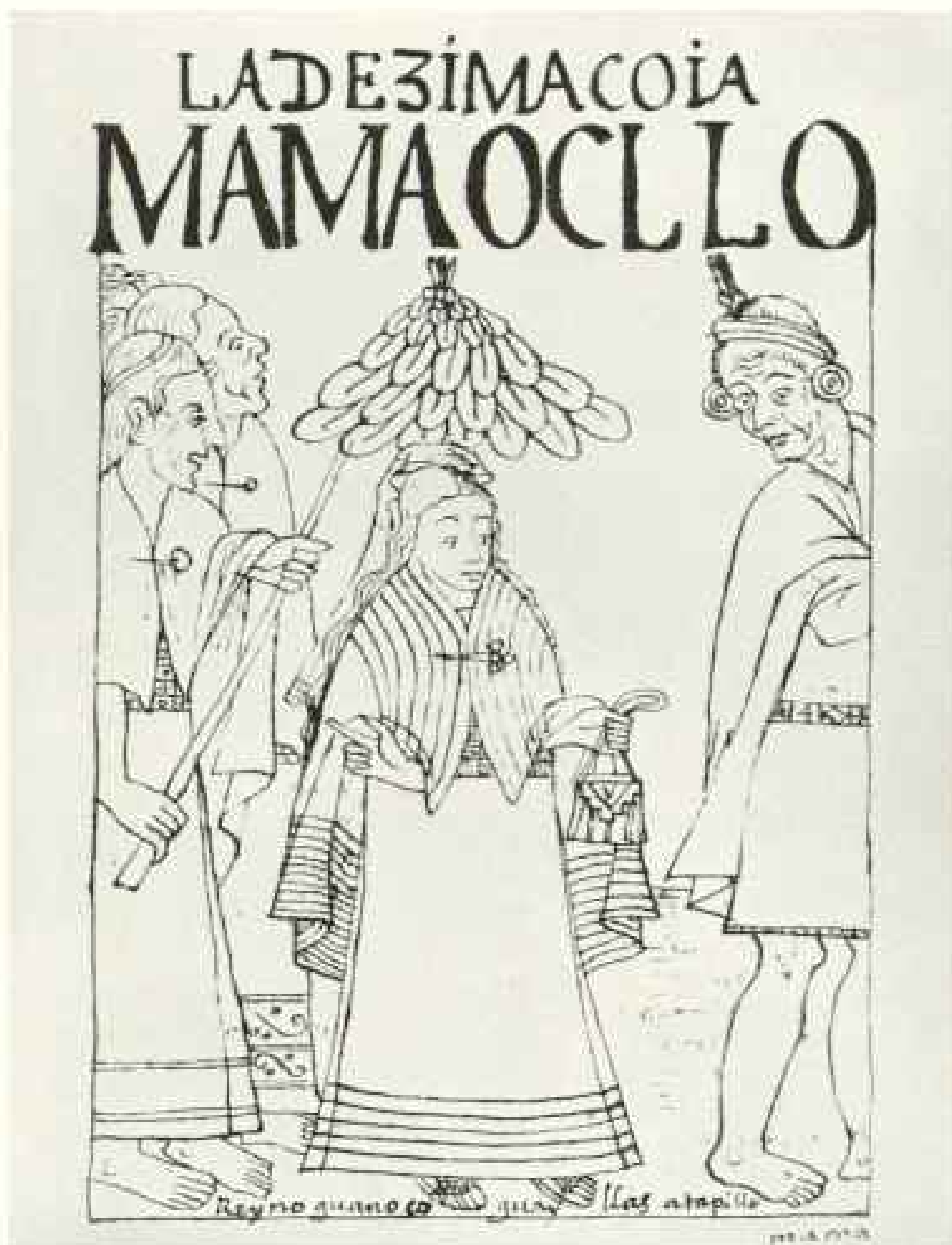
Its name signifies "navel," emphasizing its central and dominating position. Today this city of 30,000 is a glamorous blend of old and new. Indians with llamas and burros plod past Inca walls and venerable Spanish churches—while radio loud-speakers flanking the plaza blare "Rolling Down to Rio." This square, seen from the belfry of San Cristóbal Church, was larger in days of Inca splendor. The 17th-century Spanish Cathedral is just out of the picture to the left, and the structure at the far end of the square was the Church of the Company of Jesus, being now part of the University of Cuzco.

were countless Chanca prisoners and their women-folk.

Lances bedecked with gay plumes, multi-colored shields, massive war clubs with gleaming bronze heads shaped like stars, served as panoplies for the scene. Wildly jubilant music, frantically joyful dancing, and piercing shouts of thanksgiving combined into a paean of praise to the god Viracocha and to his imperial namesake.

Borne in a golden litter, the Inca entered the temple last of all. At his coming the prisoners were forced to throw themselves flat on the ground. Over the pathway formed by their prostrate bodies the Inca and his greatest nobles marched to the altar chanting a verse whose refrain was "My enemies I tread upon."

Here we have a very different aspect of the Inca statesmanship from the merciful and generous one to which we are accustomed. There was, however, good reason for it. The Inca Viracocha had just overwhelmed the most formidable enemy his house had ever known. Puma-eyed and proudly vengeful, he thus signalized, for all the Andean world to see, the invincible character of the Inca dynasty.



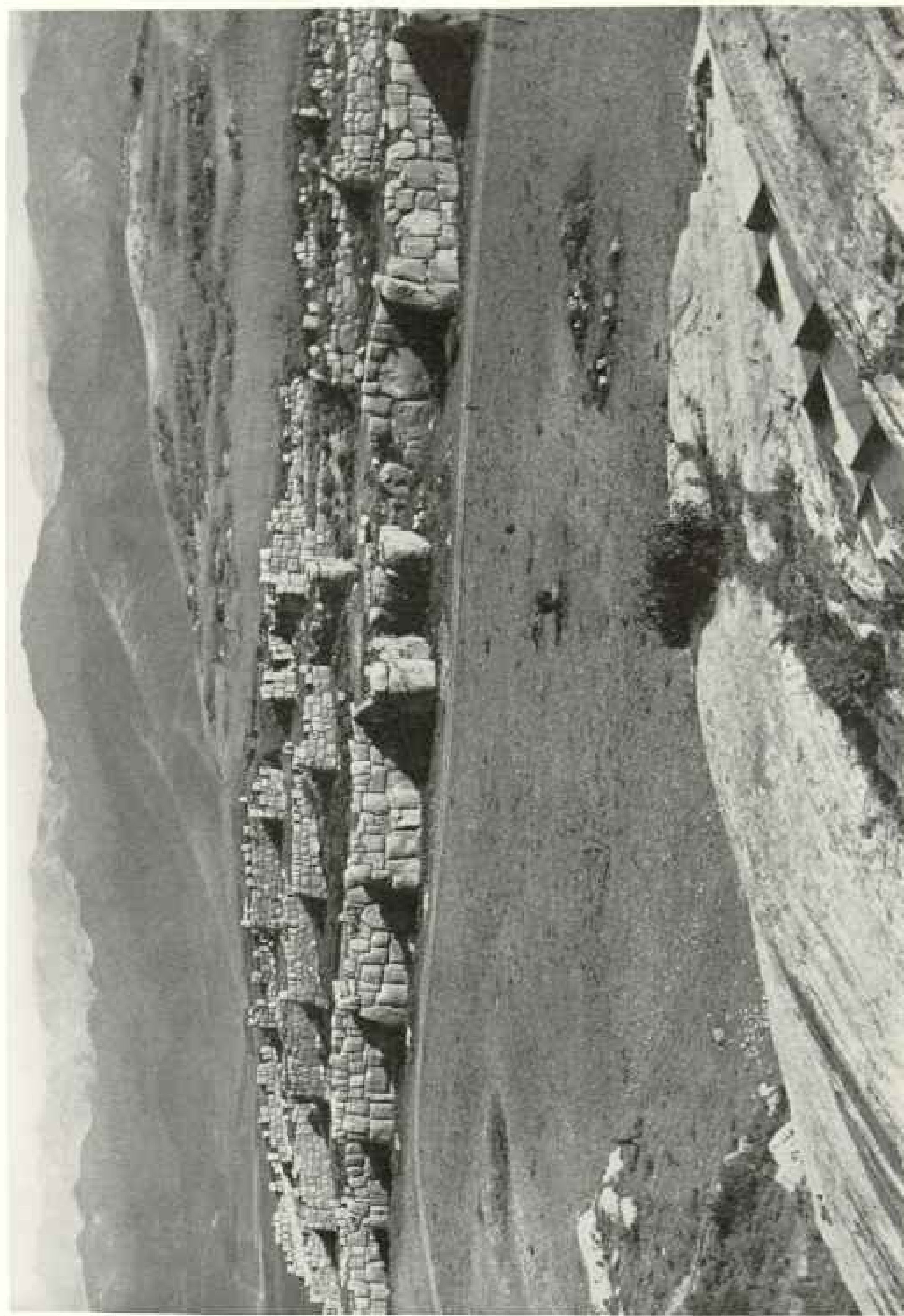
From The Royal Library, Copenhagen

THIS INCA EMPRESS "WAS OF A HAPPY MOOD AND SENSITIVE,
AND VERY JEALOUS OF HER HUSBAND"

So says the quaint old manuscript of Don Felipe Huamán Poma de Ayala, for which the above illustration was made more than three hundred years ago. The chronicler, a Peruvian, half Indian and half Spanish, describes this "tenth Coya (Empress) Mama Oello" as "a remarkable and beautiful woman," with a plump little body and a tiny face, who "loved possession, had many jewels, and died in Cuzco at the age of 115 years." That her jealousy was not misplaced is indicated by the chronicler's statement that her husband was said to have had "150 children outside of marriage." The Empress, who is pictured standing under a feather sunshade held by one of her aged servants, was both the sister and the wife of Inca Tupac Yupanqui. She is not to be confused with the first Mama Oello, half-mythical mother of the Inca dynasty (page 226).

This was all the more necessary because of the fatal weakness which his father, now forced into ignoble retirement, had displayed. By this terrible warning the Inca Viracocha foretold the fate that awaited all who opposed the Inca family too long and too resolutely.

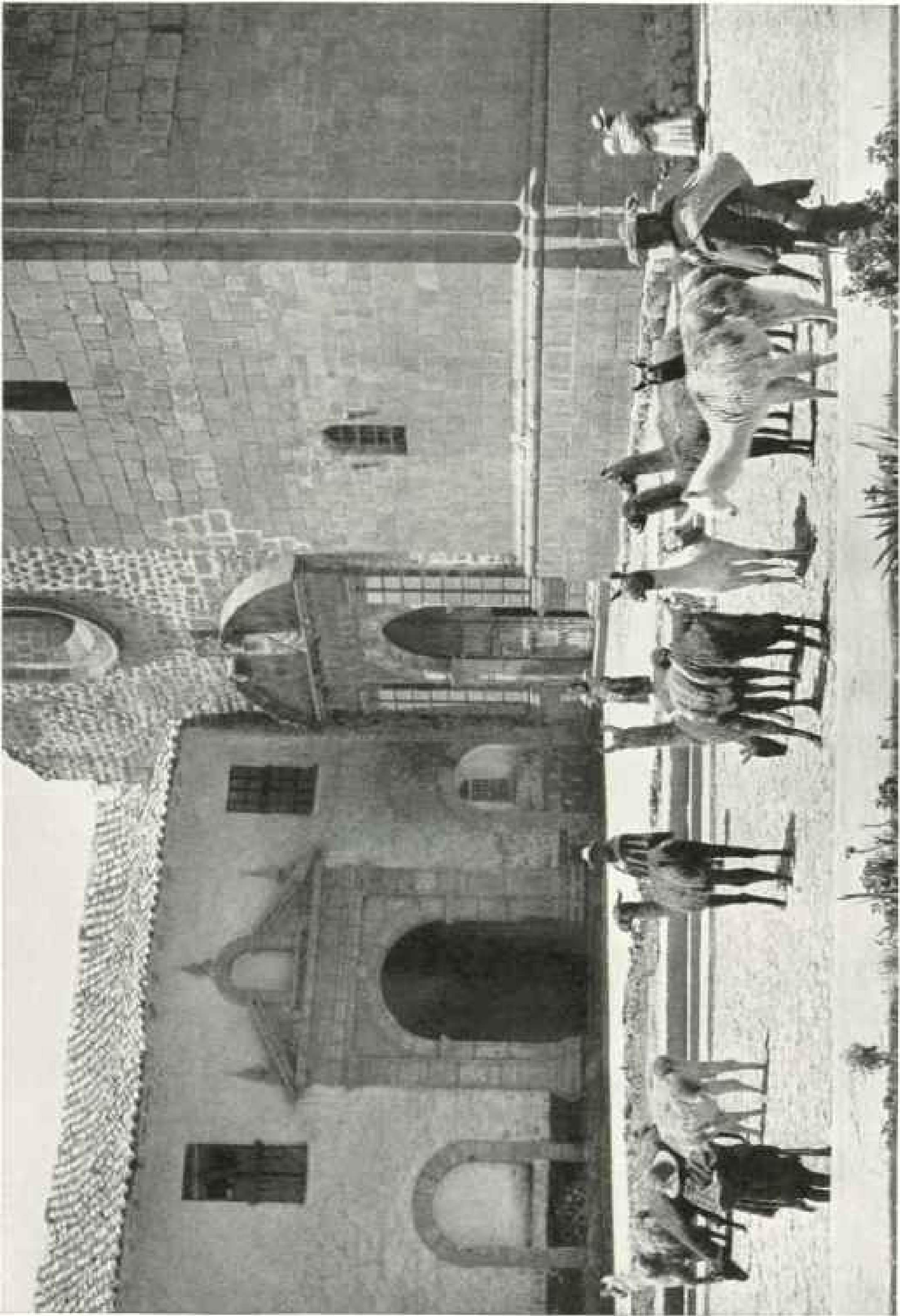
It may be truthfully said, however, that



Photograph by Martin Chambi J.

“THE SEAT OF THE INCAS” OVERLOOKS THE MASSIVE STONE WALLS OF SACSAYHUAMAN

Tradition says that seated upon the rock from which this picture was taken the ruling Inca used to watch the building of the citadel. The rock's smooth side (lower left) forms a natural slide for modern Indian boys. The zigzag walls of the fortress enabled defender to catch attackers in a cross fire.



Photograph by Ewing Galloway

CUZCO'S MONASTERY OF SANTO DOMINGO WAS BUILT ON THE RUINS OF THE INCA HOLY OF HOLIES, THE TEMPLE OF THE SUN

Here, as so often in Cuzco, a Spanish building contains many stones cut in the time of the Incas and later re-used by their conquerors. In like manner one now finds, in this church and in several others, Christian services being conducted amid surroundings which recall the old pagan sun worship of the Incas.



Photograph from Publishers Photo Service

SHE SPINS AS SHE GOES, WHILE BABY BOUNCES BEHIND

A typical *Chola* (half-breed) mother wears clothes that are only partly Indian. But her method of spinning the vicuña wool is unchanged from Inca times when the wonderfully soft and fine fabrics made from this material were much worn by the Empire's nobility (Color Plate I). The vicuña, a graceful, llama-like animal, is now becoming somewhat rare and exportation of its wool is discouraged. A vicuña-wool overcoat on sale at Washington, D. C., not long ago was priced at \$350.

the normal mood of the Incas was far more gentle. Granted that they used martial methods when necessary, they nevertheless treated their subjects well and constantly fostered their welfare once their own supremacy was assured.

The reign of the Inca Viracocha, about 1347-1400, marks the beginning of the great period of Incadom. Conquests were made in the southern highlands down to and including Tucumán (in northwestern Argentina) as well as in the country beyond the

Chanca region in the north.

Aside from all that, moreover, society and social institutions and also the material aspects of Inca civilization in general were being improved throughout the realm which, at the Inca Viracocha's death, was equal to the sum of New England, New York, New Jersey, Delaware, Maryland, and eastern Virginia.

THE INCAS'
GOLDEN AGE

The Inca Pachacutec (All-Teacher), son of Viracocha, ruled about 1400-1448. He it was who brought the Empire to its finest flowering.

Taking to heart the lesson of the Chanca war, he resolved to prevent further incursions into his realm by the savage folk dwelling in the woodlands east of the Andes. Accordingly, he built a long line of fortresses along the eastern

frontier, the most noteworthy of which is the great citadel of Machu Picchu, excavated and cleared by the National Geographic Society-Yale University Expedition led by Hiram Bingham in 1912-1915.*

* See, "In the Wonderland of Peru," "Story of Machu Picchu," and "Further Explorations in the Land of the Incas," all by Hiram Bingham, in *THE NATIONAL GEOGRAPHIC MAGAZINE* for April, 1913; February, 1915, and May, 1916, respectively; "Staircase Farms of the Ancients," by O. F. Cook, May, 1916, and "Air Adventures in Peru," by Robert Shippee, January, 1933.

Anyone who beholds the grandeur of planning and the magnificence of construction there displayed will come to understand at least a part of the material splendor of the Inca civilization at its best period (pages 253, 256, 258).

Neither Pachacutec nor any other Inca was merely a brutal conqueror. He fought valiantly when he had to; but he greatly preferred pacific methods. In either case he was always successful in the end. Moreover, once the submission of a hostile chief was won, the Inca proceeded to win his devotion, also. The vanquished was honored by being given a high post in the administration of the Empire and his dependent officials were tendered positions equivalent to those which they had previously held.

Whenever possible, each tribe or state was taken into the Inca realm as a going concern, without loss of prestige to anyone who faithfully upheld the overlordship of the Sapa Inca, Sole Emperor; and the defeated people were thenceforward protected and encouraged exactly as were all his other subjects.

As a further means of strengthening the empire inwardly, sons and kinsmen of the great vassals were brought to Cuzco where, in company with youths of the imperial



Photograph by Martin Chanbl J.

AT A ROADSIDE CHICHA STAND SHE LIFTS THE FLOWING BOWL

Chicha, the ubiquitous drink of Inca land, is sometimes made from maize which has been chewed up, spat out into a jar of brackish water, and allowed to ferment (page 246). These native women of Quiquijana, Peru, are imbibing the intoxicant from baked-clay dishes while eating a meager lunch, mostly oranges. The wide-brimmed hats, chief pride of native femininity, are decorated in brilliant red, yellow, and blue.

caste, they were educated at the House of Teaching in both military science and the peaceful arts.

Beyond question the reign of Pachacutec was the true apogee of the Inca Empire. At his death it was equal in extent to our Atlantic States from Maine to South Carolina, inclusive. From northern Peru down into Bolivia and northwestern Argentina its enormously diversified territory of highlands and coastlands spread, a work of empire-building which can be grasped only if we visualize a Roman Empire consisting of a



© Kurt Severin

ONE WAY TO DRINK CHICHA IS TO LAP IT DIRECTLY FROM A SNAKELIKE INCA CHANNEL CUT IN THE ROCK

This rare stone near the old fortress of Sacahuaman (page 242) is still used by descendants of the Incas' subjects on such festive occasions as weddings and birthdays. Chicha, the strong maize beer of the country, is poured into the upper hole, runs down, and is drunk by the people directly from the canal. This unusual process frequently results in quick inebriation. The writhing, serpentine shape of the groove suggests the totemic serpent often seen in Incaic remains (page 238).



© Kurt Seaton from Black Star

AGE-SEAMED BUT AGELESS ARE THESE HARD-WORKING HANDS

They belong to a venerable Aymará woman, busily weaving a bright-colored woolen poncho at her home on the shores of Lake Titicaca. But they might just as well be those of a subject of the Incas of four centuries ago, for methods of weaving have changed not at all. Now, however, sheep wool is available to supplement that obtained from the native llama, alpaca, and vicuña (page 244).

series of Switzerlands bordered on one side by a long coastal Sahara and on the other by a Congo-like wilderness of tropical forest.

The supreme authority of the Inca flowed down through many grades of administrative officials, the humblest of whom had supervision over ten families, in a spirit of fatherly guidance. It reached into every household in the land, and saw to it that all wants were filled, that life, though laborious in just degree, was happy and free from care.

FAMILY THE UNIT OF INCA SOCIETY

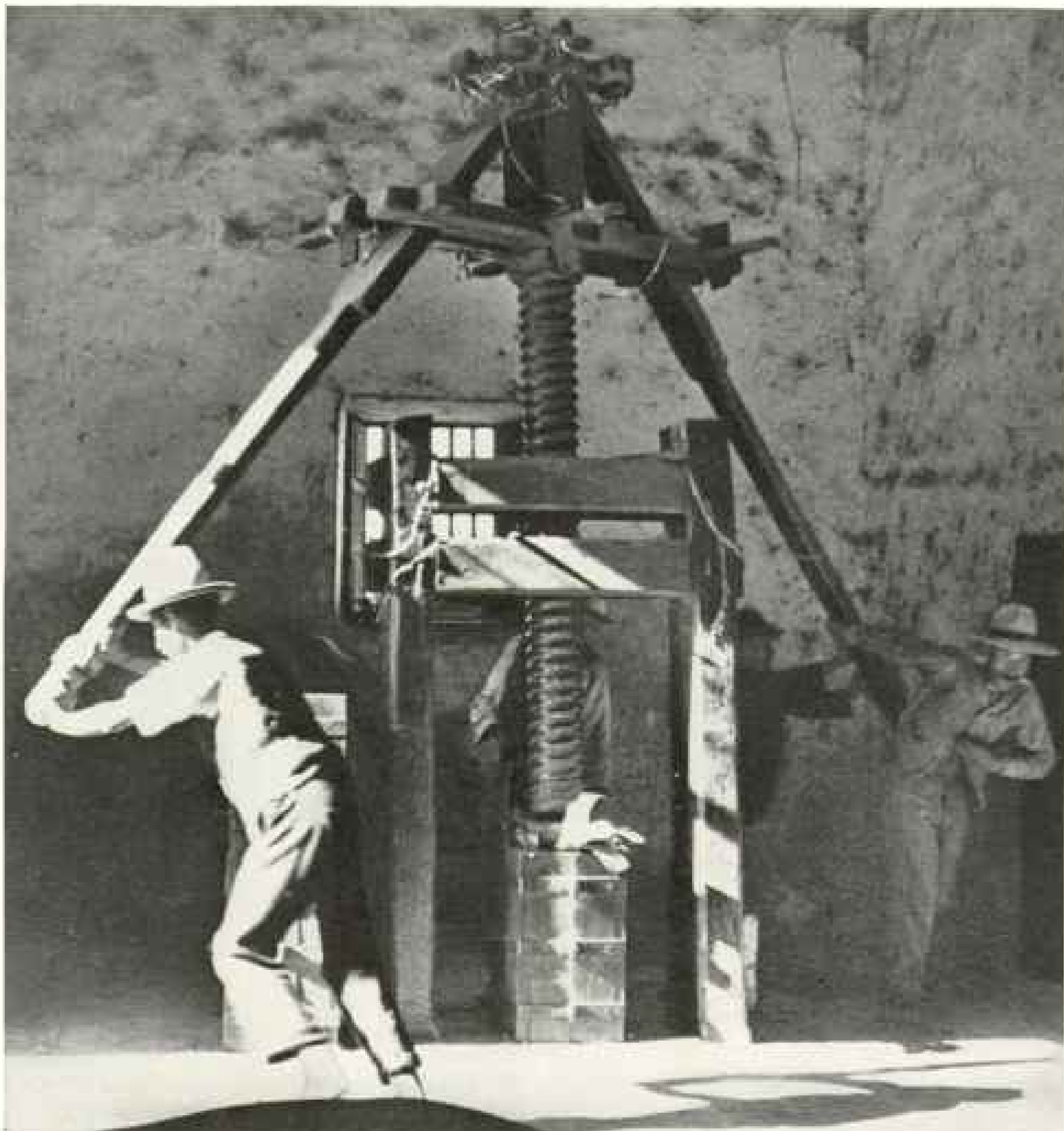
The unit of society was the household, not the individual. Its head, called *puric*, or full-grown man, performed the heavy labor with aid from his wife and their older children. Neither the very young nor the elderly and old were called upon for manual toil. The *puric* alone paid to the State the tribute due. It was justly apportioned and

took such forms as a part of the produce of each family's toil in the fields or as a reasonable stint of work performed by each *puric* upon roads, irrigation channels, terraces for agriculture, or other public works.

Or, if a man chanced to be specially skilled in some handicraft, the result of his labor during a certain time was paid into the government's storehouses, whose function it was to provide for all the needs of society.

The whole land flourished. In hundreds of villages throughout its broad expanse periodical fairs were held where business was conducted by exchanging one kind of goods for another. The people knew neither the complications nor benefits of money.

Adjacent to every village were its fields, some on the flat floor of the valley, others on the masonry terraces along the hillsides. Their walls exist still, making beautiful and intricate patterns in the landscape (page 252). Water bubbled and whispered



© Kurt Seydel from Black Star

MANPOWER PRESSES COCA LEAVES, FROM WHICH COMES COCAINE

Many such screws of heavy, ironlike wood were made in Spanish colonial times. They are used for reducing the raw material for the drug to compact, transportable form. The habit of chewing the leaves of the coca shrub is widespread among Indians of the Andes to increase their physical endurance. In pre-Spanish times wheeled machines and such devices as this were unknown.

through carefully made irrigation channels fed by streams or by springs, and along their banks grew flowering plants. Hedges of fantastic cactus or of blooming shrubs marked the limits of each tribe's lands.

Here and there a white granite temple gleamed, an altar or a sundial carved from one mighty block of stone upon its summit (Plate IV and page 258). At appropriate places rose the mansions of local officials, bowered in feathery trees and adorned by radiantly colored blossoms (Plate V).

Wise men preserved from father to son

the oral traditions and the knowledge of nature accumulated through many generations. Likewise, to make life pleasant, not alone for the highly placed but also for the humble, there were bards, singers, and dancers who graced by their special skills the ceremonial life of the court and the festivals of the people.

There were, naturally, contrasts between the way of life among the great and that among the ordinary folk. This becomes apparent when we study the marriage customs. The Inca himself and all his caste

were polygamous, a multiplicity of wives and of concubines being regarded as a delectable privilege suitable only to the great.

A part of Yahuar Huaccac's inferiority complex is made manifest by his special addiction to carnal delights: in his enormous harem he could display prowess in this respect if in no other. All the Incas, to be sure, had hundreds of mates, and the Chosen Women, dedicated to the Sun, were accustomed to yield themselves to the Sapa Inca, Son of the Sun, whenever he willed it. The First Wife, however, was *Coya*, or Empress, all her days.

Although the legendary first Inca, Manco Capac, is said to have married his sister, Mama Ocllo, it is reasonably sure that all the historic Incas down to and including Pachacutec took as their first wives ladies belonging to the families of the great chiefs, whom the Sapa Inca thus signally honored.

WHOLESALE MARRIAGES

Among the lowly, on the other hand, marriage was monogamous. Moreover, it was universal. Spinsterhood and bachelorhood were practically unknown. Marriage was a civil rite rather than a religious one. At stated intervals the chief of each village assembled before him all the youths and maidens who wished to be married. Arranging the men in one row and the girls in another, he married each couple in turn as they came up to him.

This seemingly arbitrary method was not so cold-blooded and mechanical as it may seem at first; for, in Inca-land as elsewhere, love had its way, and we may safely assume that there was a certain amount of jockeying for position in both the masculine and the feminine lines of the about-to-be-wed, so that the right couple in each case finally stood before the marrying chief.

Having acquired his wife, the young puric, aged 25 or so, led her to his little stone or adobe house where appropriate ceremonies were held by the kinsfolk of both. Afterwards, the young wife aided her husband in growing potatoes, the most important crop, for our potato is really a Peruvian edible; she also tended the maize and other crops (Plate VI and page 257).

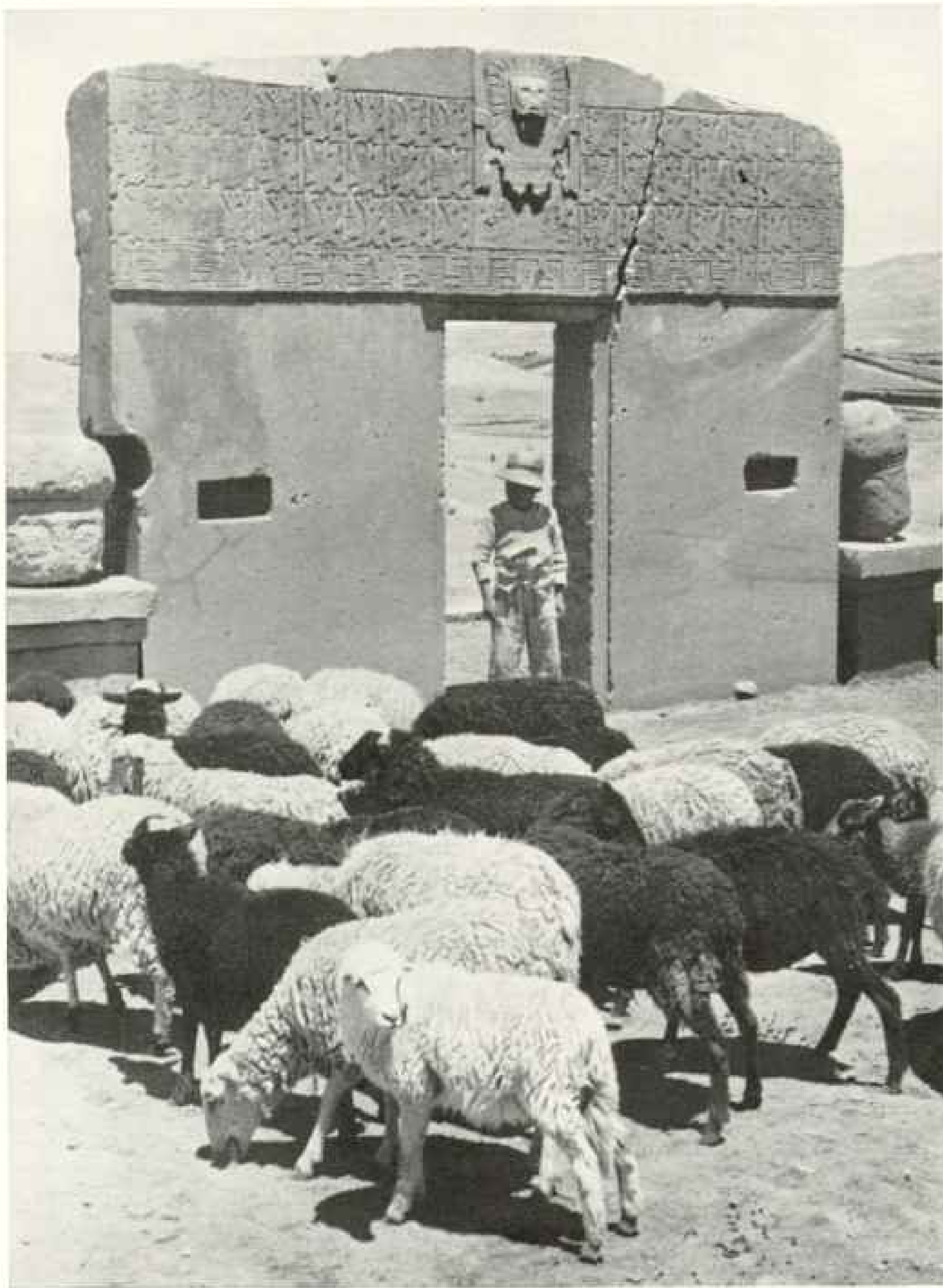
Chicha, a maize beer singularly unpleasant to our refined notions, was brewed in the first place, and still is, by being chewed by old women who spat the masticated kernels into a jar of brackish water, where they fermented for eight days (page 246). This



Photograph by Martin Chambi J.

SAD MUSIC FROM A BULL'S HORN!

This musical native of Cotabambas has an advantage over his ancestors of Inca days. Cattle then were unknown in Peru, and if the Indians wanted a trumpet they had to make one of clay or of a large shell.



Photograph by Robert Geertzmann from Black Star

SHEEP GRAZE IN THE RUINS OF TIAHUANACO, MUTE REMINDER OF PRE-INCA TIMES

One of the oldest monuments of prehistoric South America is this massive monolithic gateway in Bolivia, near Lake Titicaca's southern end, estimated to be more than 1,000 years old. When the Incas came into the land they found the city in ruins and nothing was known of its inhabitants. From a study of the skillful stonework here they greatly improved their own architectural methods (page 237). Above the gate is carved the figure of a god or ruler with tears coursing down his cheeks. Facing toward him are 48 other figures, part man, part bird. The Incas had no sheep; these animals were brought in by the Spaniards.

undainty liquid, however, was strained and otherwise treated by the wife until it became a drink of considerable potency and charm, such as even finicking modern folk can swallow, if need be.

When children began to be born to the puric and his wife, the always benevolent government allotted additional land for the support of each child.

The process of parturition was accompanied by none of the superfine luxury which modern mothers know; for, then as now, the Indian mother merely retired behind a hedge or into her house, there to give birth alone without aid from midwife or physician.

Under these conditions infantile mortality was probably high; but at least the survivors were uncommonly tough.

EMPEROR AND PHILOSOPHER

Such was life in the Inca realm at its best time. This is the period which Mr. Herget so truthfully shows us in his admirable paintings herewith.

Pachacutec's days were passed in the austere majesty of massive masonry palaces, at Cuzco and in many other places. Huge courts were thronged with colorfully clad retainers whose sole ambition was to lay down their lives for him. Flowers, brilliant featherwork, superb tapestries of vicuña wool in lustrous hues, vessels and ornaments of gold, and all that was fairest of the handicrafts of his subjects adorned the stately niche-lined apartments where he dwelt when not campaigning at the head of his armies.

Fortunately, many of these things have survived from his day into ours and may be seen in museums in Peru, Ecuador, and Bolivia, as well as in our own country and in many another of which Pachacutec never heard.

Aside from all his surrounding splendor, the Emperor Pachacutec was a great soul, a noble philosopher whose heart held charity for his fellow men. Many of his sayings have been preserved for us by Indian and Spanish chroniclers. Among them are these:

Envy is a worm that gnaws and consumes the entrails of the envious.

It is very just that he who is a thief should be put to death. Adulterers, who destroy the peace and happiness of others, ought to be declared thieves, and condemned to death without mercy.

Judges who secretly receive gifts from litigants ought to be looked upon as thieves, and punished with death as such.

The noble and generous man is known by the patience he shows in adversity.

The physician herbalist who is ignorant of the virtues of herbs, or who, knowing the uses of some, has not attained to a knowledge of all, understands little or nothing. He ought to work until he knows all, as well the useful as the injurious plants, in order to deserve the name to which he pretends.

Drunkenness, anger, and madness go together; but the first two are voluntary and to be removed, whereas the last is perpetual.

CRIME AND PUNISHMENT

Such words as these, stern but fundamentally magnanimous, reveal to us that the Incaic mind was not wont to compromise with wrongdoing. Crime and punishment were not, indeed, unknown among the subjects of the Sons of the Sun. After all, they were human beings.

If vagabonds and other mischievous persons were flogged with a sling for a minor offense and hanged by the feet until they were dead for a grave one, there was also a strong humanitarian note in the law's differentiation between a robbery from malice aforethought, for which the perpetrator was duly punished, and a robbery committed to obtain food badly needed. For this, chastisement was inflicted, not upon the thief, but upon the official whose duty it was to forestall need so grievous!

The prisons maintained by the Incas for punishing criminals of all classes, especially traitors and nobles who shirked their high duties, were terrible places filled with poisonous snakes and other horrors; but, so the old chroniclers tell us, they were almost always empty of human inmates.

Pachacutec also was a daring original thinker. Before an assembly of the priests of Inti (the Sun) he once reasoned out the existence of a god still higher than the Sun. He pointed out the manner in which that luminary always follows a set path, performs definite tasks, and keeps certain hours as does a laborer. He showed that the solar radiance can be dimmed by any passing cloud. The sun must, Pachacutec argued, have a master who is master also of all created things.

He ended by proclaiming to the priests the omnipotence of the counselor of his father, the Supreme Deity, the Creator-God Viracocha. He ordained, however, that the worship of Viracocha should be confined to the ruling caste, as being too subtle and sublime for ordinary folk, and he commanded that the people be taught that Inti was the greatest of the gods.



© Aerial Explorations, Inc.

ALMOST TO THE TOPS OF THE PEAKS CLIMBED THE ELABORATE STAIRCASE FARMS
OF THE ANCIENTS

These well-preserved terraces on the mountain walls of the Urubamba Valley near Cuzco fed the Inca city of Pisac, the ruins of which lie at the upper right. Similar irrigated hanging gardens supplied food for other cities, including Machu Picchu (page 256). The modern town of Pisac lies at the upper left, on the level floor of the valley. Note the regular line of the river, which is still confined to its bed by stone dikes built before the Conquest.

Thenceforward, when addressing the Sun, the Incas always spoke to him as to a kinsman; but they prayed to Viracocha with deepest humility.

When this great Inca died, about 1448, his empire was at its real zenith. He and his generals had conquered all the great coastal kingdoms up to the Gulf of Guayaquil, as well as the wilder and more backward folk, worshipers of the puma, of the dog, and of other strange or repellent deities, in the highlands behind the coast.

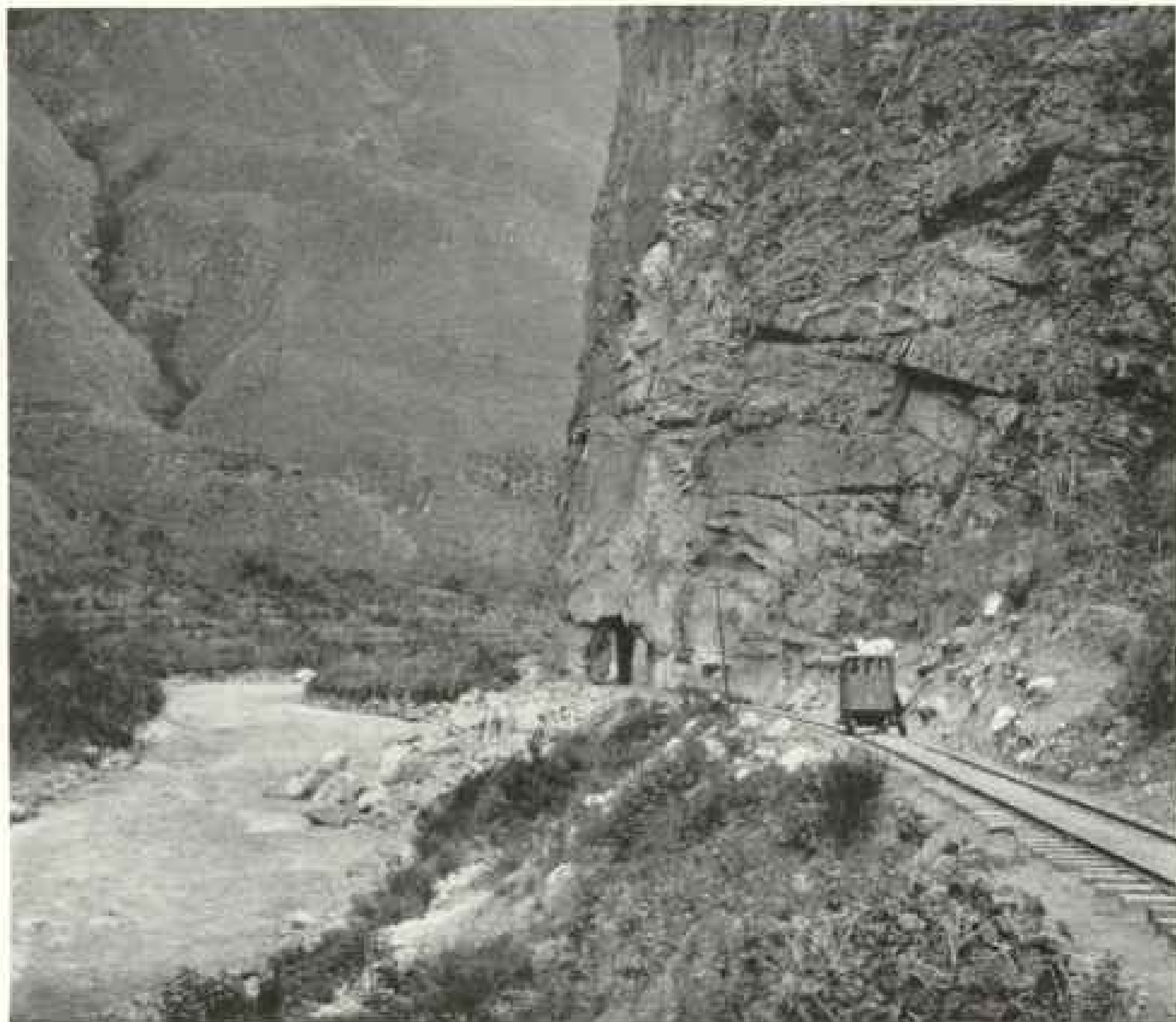
COURIER MAIL AND PARCEL POST

This mighty and diversified realm had been created by a development of the relayed-army technique which Mayta Capac had begun (page 237). It was lashed to the

supreme authority of the Sapa Inca by a splendid system of roads, paved, and provided with steps where necessary.

Over these highways sped *chasquis*, or post-runners, each of whom ran a distance nicely calculated to permit him to go at top speed all the way from his own posthouse to the next, bearing a *quipu* (knotted-string record), a verbal message, or even a water-tight basket in which fish from the sea swam in salt water until they reached the imperial kitchen (Plate IV).

Over these roads huge armies could be marched quickly. Even the deepest chasm ceased to be a barrier, for marvelous suspension bridges of thick aloe ropes fixed by massive masonry piers on either bank leaped across them.



Photograph by Jacob Gayer

AUTOMOBILES ON RAILS WHISK VISITORS THROUGH AWESOME GORGES TOWARD THE INCA CITADEL OF MACHU PICCHU

Those who can afford it charter such an *autocarril* with driver at Cuzco and ride out to the ruins in about three hours, as this is faster and more convenient than going by regular trains. Here the Government-owned Cuzco-Santa Ana Railway skirts the rushing Urubamba River and dives through a tunnel at the base of a towering cliff. About a dozen miles downstream from this point and two thousand feet above the river stands the astounding fortress-city of the Incas (page 256).

The Sapa Inca was borne along the roads in his magnificent litter which rested on the shoulders of specially trained bearers, while noblemen proudly carried the poles which upheld the gorgeous canopy.

Whenever the imperial litter halted, the multitude of the Inca's subjects cried aloud: "Most high Lord, child of the Sun, thou art the sole and beloved Lord. The whole earth truly obeys thee."

Naturally enough, the privilege of traveling by litter was reserved to the very highest persons, to the Sapa Inca himself and his empress, to the governors or viceroys of the four grand provinces which made up the Realm of the Four United Parts, as the Empire was officially styled, and to specially favored conquered kings or conspicu-

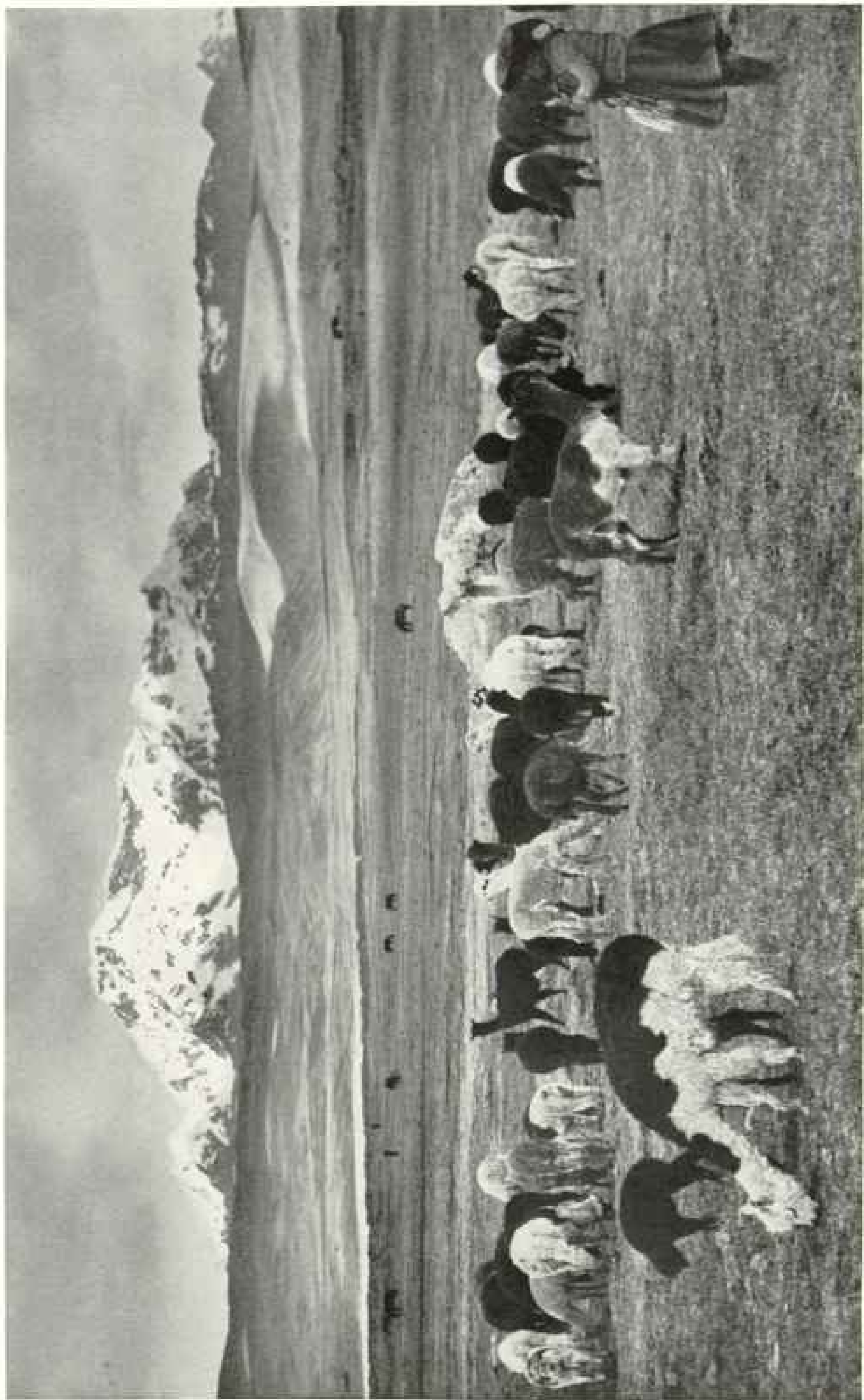
ously successful generals whom the Inca wished to honor.

Everyone else, no matter how high his rank, walked (Plates I and II).

"WIRELESS" MESSAGES BY FIRE

For special emergencies when greater than usual speed was required, there were beacon fires upon mountain-tops which, by means of a system of signaling now unknown, were used to transmit messages over enormous distances in an incredibly short time.

Such were the bonds of transport and of administrative control. They sufficed to hold the empire of Pachacutec solidly to his person. The Inca could not suspect that, after his time, the Empire would grow



Photograph by Martin Chusid J.

LLAMAS AND LONGER-WOOLED ALPACAS GRAZE IN THE CHILL SHADOW OF AUSANGATE SNOW PEAK AT LAURAMARCA, PERU

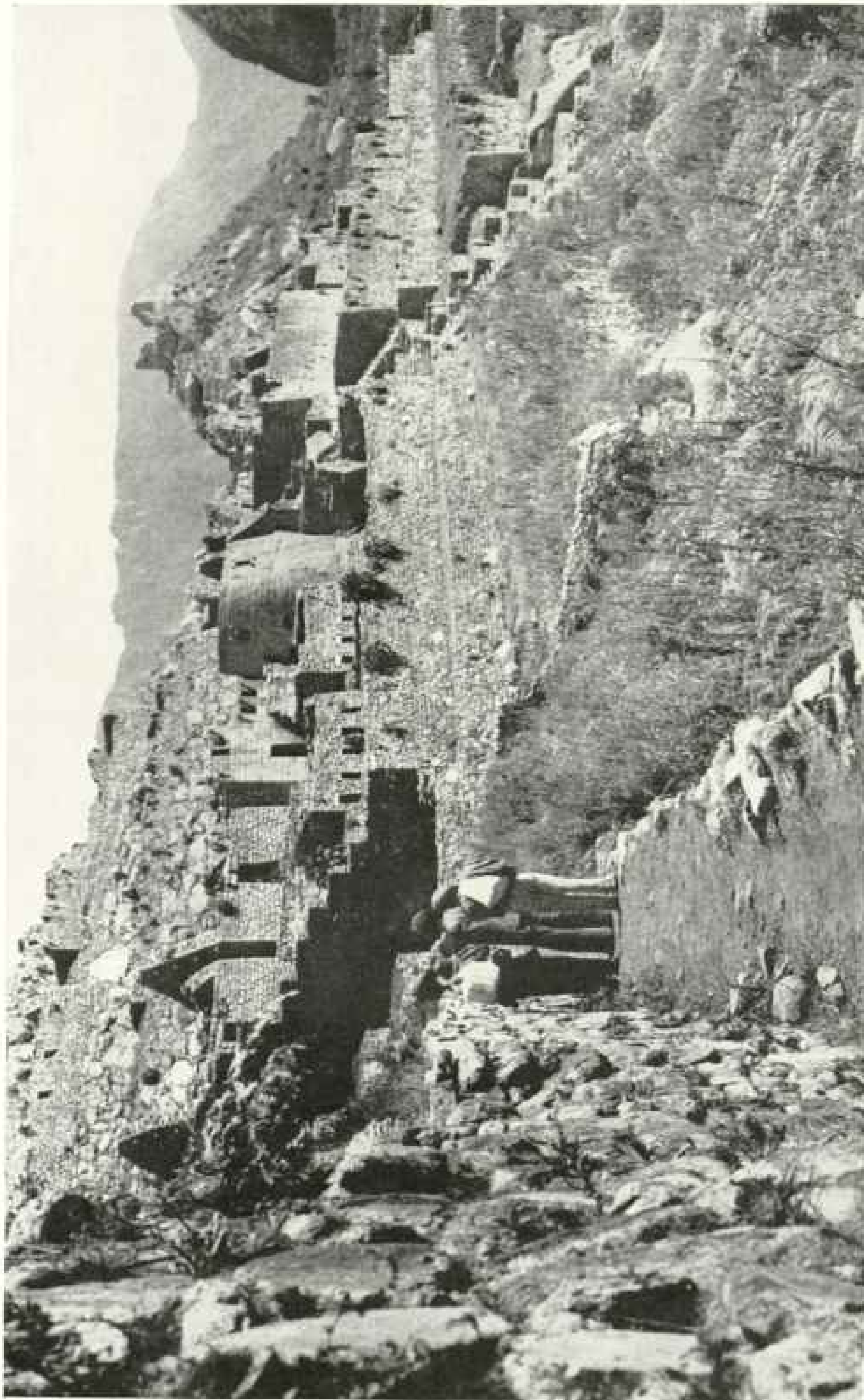
Without the strange, somewhat camel-like llama and its relatives, such a highly developed civilization as that of the Incas could hardly have existed. The llama, though grudging and temperamental, provided wool, meat, and transportation for goods, as it does to this day (Color Plates III, VI, and pages 243, 259, and 263). Finer and more abundant wool is obtained from the long-coated alpaca, but the best of all comes from the vicuña, small, fleet, softly tan colored, and growing scarce. The guanaco, sometimes hunted as game, is a wild form somewhat larger and more graceful than the llama.



Photograph by Anthony Turner.

WAILING PANPIPES AND THROBBING DRUMS FILL THE CLEAR, THIN AIR WITH PULSATING RHYTHM.

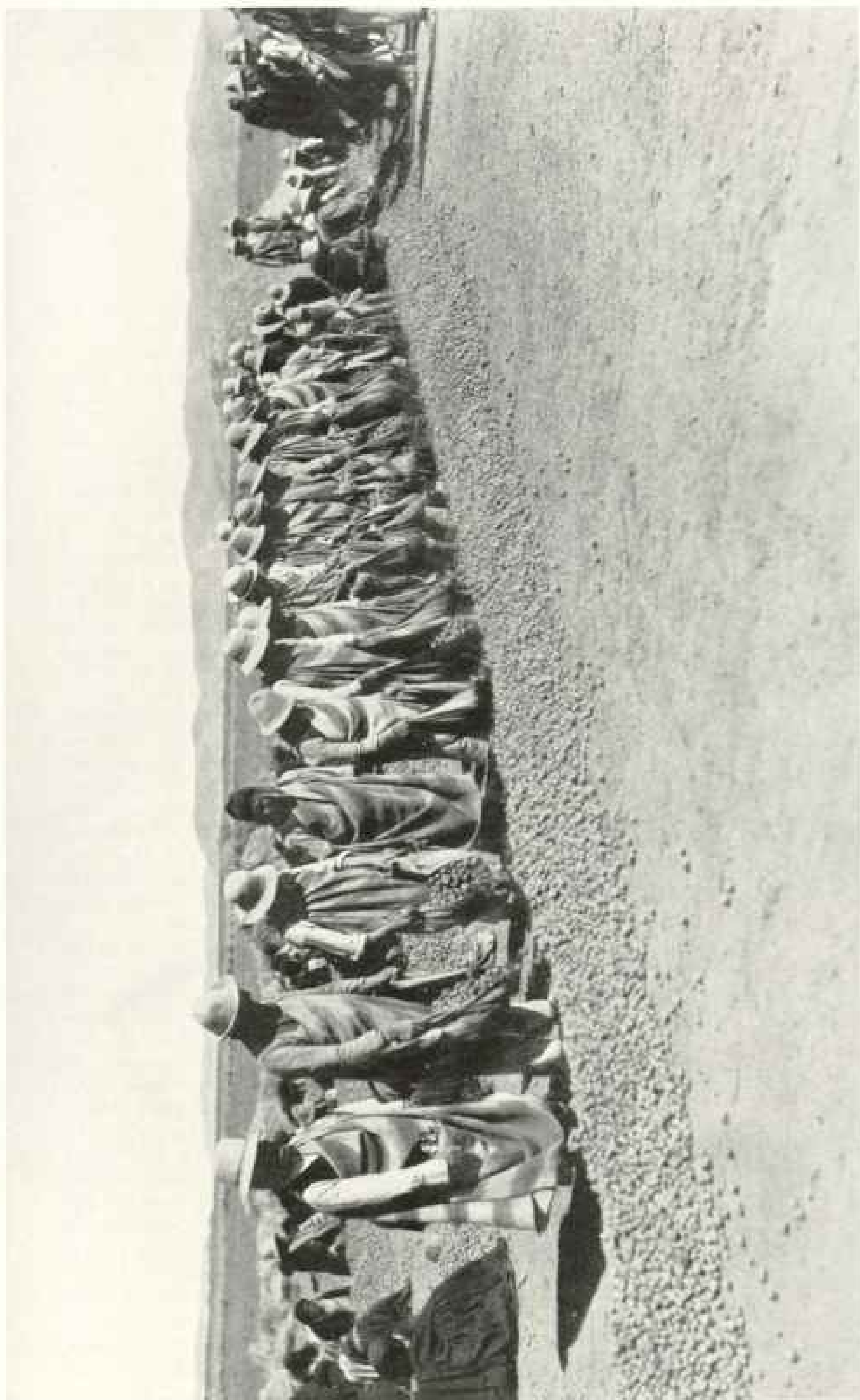
Such music in a Bolivian village square carries the listener back to the days of the Incas as it rises to frenzy pitch and sweeps the whole population into a whirling, swaying dance (page 264). Slightly different from the Quechuas around Cuzco, these Indians are Aymaras, descendants of a once warlike tribe subjugated by the Sons of the Sun and welded into their Empire.



Photograph by Frank H. Fisher

HIGH ON A MOUNTAIN TOP STANDS THE LOST CITY OF THE INCAS, THE MAGNIFICENT BORDER CITADEL OF MACHU PICCHU.

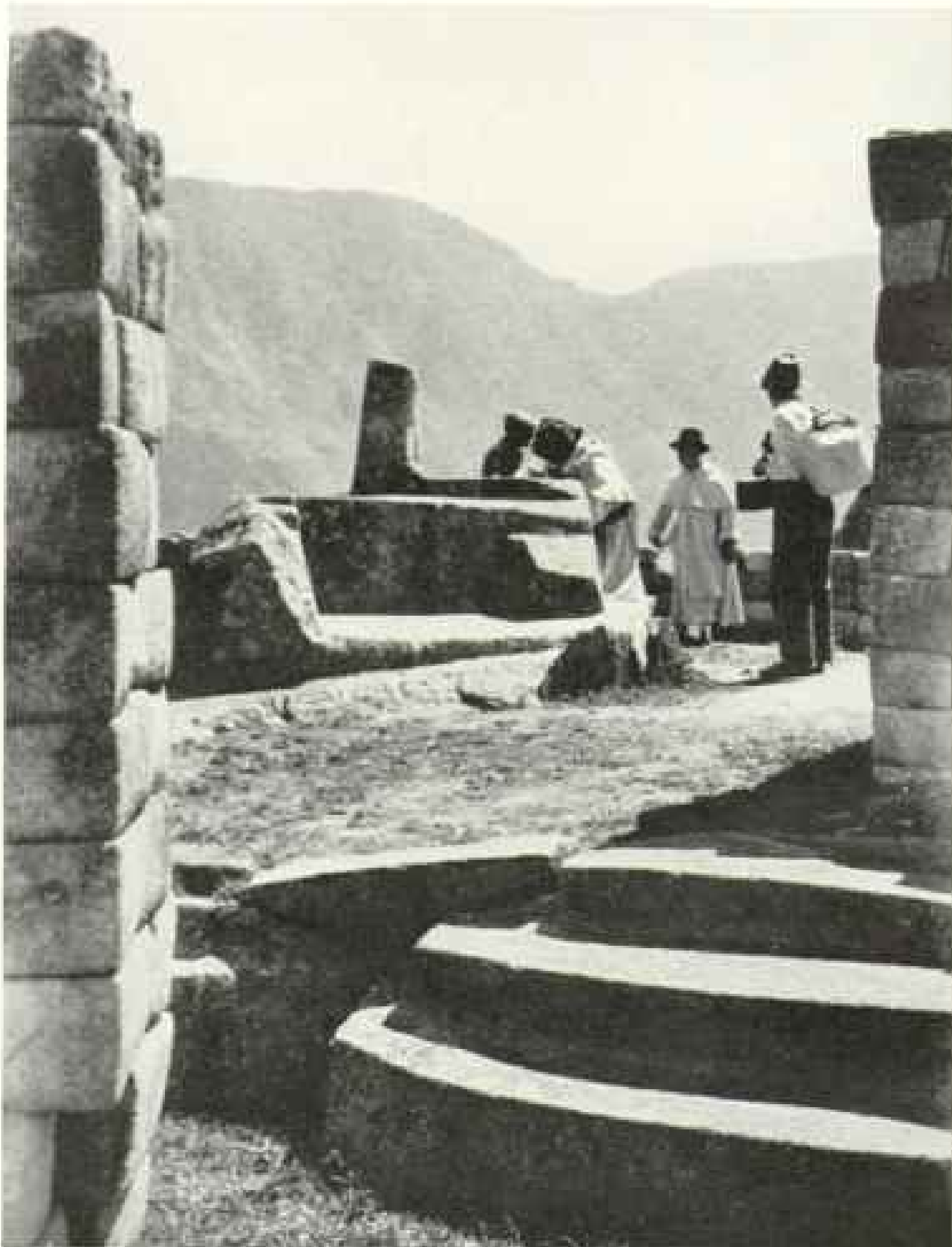
Probably built to guard the Empire from invasion by sylvan savages, the fortress-city was uncovered in 1912 by a joint expedition of the National Geographic Society and Yale University under the leadership of Hiram Bingham, later U. S. Senator from Connecticut. Since that time the lush, possessive vegetation has had to be cleared away several times. On the eminence at the right stands the temple with its sundial (page 258), overlooking the crumbling city and its surrounding peaks, which were terraced almost to the top with vegetable gardens. Roofs are gone because they were made of thatch.



Photograph by James C. Sowers

POTATOES LITTLE LARGER THAN GOLF BALLS GROW IN THE HIGH ALTITUDES OF THE ANDES

At a big Bolivian ranch on the Altiplano between the ranges, a line of bluntnosed, bearded Indians piles the little tubers in a long row preparatory to sorting. Some will be used immediately and others will be stored (Color Plate VI and page 249). The lower edge of the skirtlike blanket makes a convenient carrying rack.



Photograph by Franklin Fidler

MACHU PICCHU'S "TOWN CLOCK" WAS ITS STONE SUNDIAL

It stands in a courtyard of the temple, overlooking the ruined fortress-city (page 256). Since its uncovering by the National Geographic Society-Yale University Expedition of 1912, Machu Picchu has received many visitors. The Peruvian Government keeps it cleared of vegetation and has even built a small hotel or resthouse on the ridge (page 244).

too great for efficient government by such methods.

Nevertheless, when he came to die, he seems to have been filled with melancholy forebodings, and his death chant has a note of sadness in it:

I was born as a flower of the field;
As a flower I was cherished in my youth,
I came to my full age; I grew old,
Now I am withered, and I die.

KNOTTED-STRING "WRITING"

Although the Incas and their subjects never imported hieroglyphic writing from

Middle America and never invented it for themselves, they had an effective substitute in the *quipus*, or knotted-string records. Crude though these quaint instruments seem at first glance, they were in reality subtle and intricate, being used by specially trained masters both for arithmetical calculations and for narratives.

Quipu-ology was a third-year subject in the four-year course at the Teaching House, where the ruling caste youths were educated. Even to-day one may see many a llama herder counting his flock by means of a simplified survival of the ancient knot-record.

For studying the movements of sun, moon, and stars, and for determining the seasons of the

year, the Incas used several methods. One was the sundial, to be found in every temple. Carved, as a rule, from a large boulder, its upper surface was flat save for a stout column of the same stone, which was carefully shaped when the dial was made. The shadow cast by this gnomon, besides marking the hours and seasons, was the object of much esoteric learning now lost to us.

Again, groups of towers were used whose shadows told the learned men about the equinoxes and the solstices and so aided them in appointing the days for the festi-

vals which were held throughout the year. It was all seemingly simple as compared with modern calendars and astronomical observatories; yet it served the ancient Peruvians well, and thus they measured time nearly as accurately as we do.

Nor was the agricultural technique of the Incas and their people less well adapted to their needs. The plowing season was solemnly inaugurated every year by the Inca in person, using a golden plow on certain Fields of the Sun above Cuzco. Moreover, in the garden of the Sun Temple, Coricancha, now the Monastery of Santo Domingo in Cuzco (pages 227 and 243), all food crops, flowers, and shrubs, and even all insects and butterflies, were imitated in delicately wrought gold, as if for the encouragement of Nature herself.

Ordinary farmers employed plows of heavy wood, with footrests and handles (Plate VI). The work of preparing the furrows was done by human strength alone, for the haughty and intractable llama, though he will carry up to 100 pounds on his back, has never yet permitted himself to be harnessed as a draft animal; and, if his load is too great, even by a trifle, to please him, he will, in the words of an old chronicler, "turne round his head and ejecte from his mouthe a wouderful stinking water" (Plate III).

Like their modern descendants, the husbandmen of Inca days knew the value of fish heads as fertilizer, and they of the coast also made use of guano brought from the bird islands off the shore. For weeding and tending the growing crops a variety of simple but effective tools was used. Their like may still be seen on many an Indian farm.

A HERITAGE OF ARCHITECTURE

It is in their architecture, however, that the applied science of the ancient Peruvians may best be seen today. Whether it be in the stupendous megalithic masonry of Fort Sacsahuaman, above Cuzco, or in the beautifully regular courses of the best walls at Machu Picchu and countless other sites throughout Incaland, we see the result of endless patience and of astonishing structural skill.

All building was done, we must remember, with no machines beyond the inclined plane, the crowbar, and perhaps a rudimentary form of the pulley.

For the rest, the Incaic masons depended

on stone or bronze knives, infinite amounts of human strength exerted in polishing and grinding with sand and water, and on concerted pulling of materials along the ground by large numbers of men. It is extremely doubtful that even the crudest form of rollers was used or known of.

Yet everyone agrees that the best architecture of ancient Peru is impressive. In the early days of rough stones laid in clay, a style which continued to be used in common structures, it was crude enough. But, as we have noted, Mayta Capac learned at Tiahuanaco superior methods of construction, and his successors continued the progress which he began. Under Pachacutec the present glorious curved walls at Coricancha (the Temple of the Sun in Cuzco), at Pisac, at Machu Picchu, and at many other places, marked the final stage of architectural development.

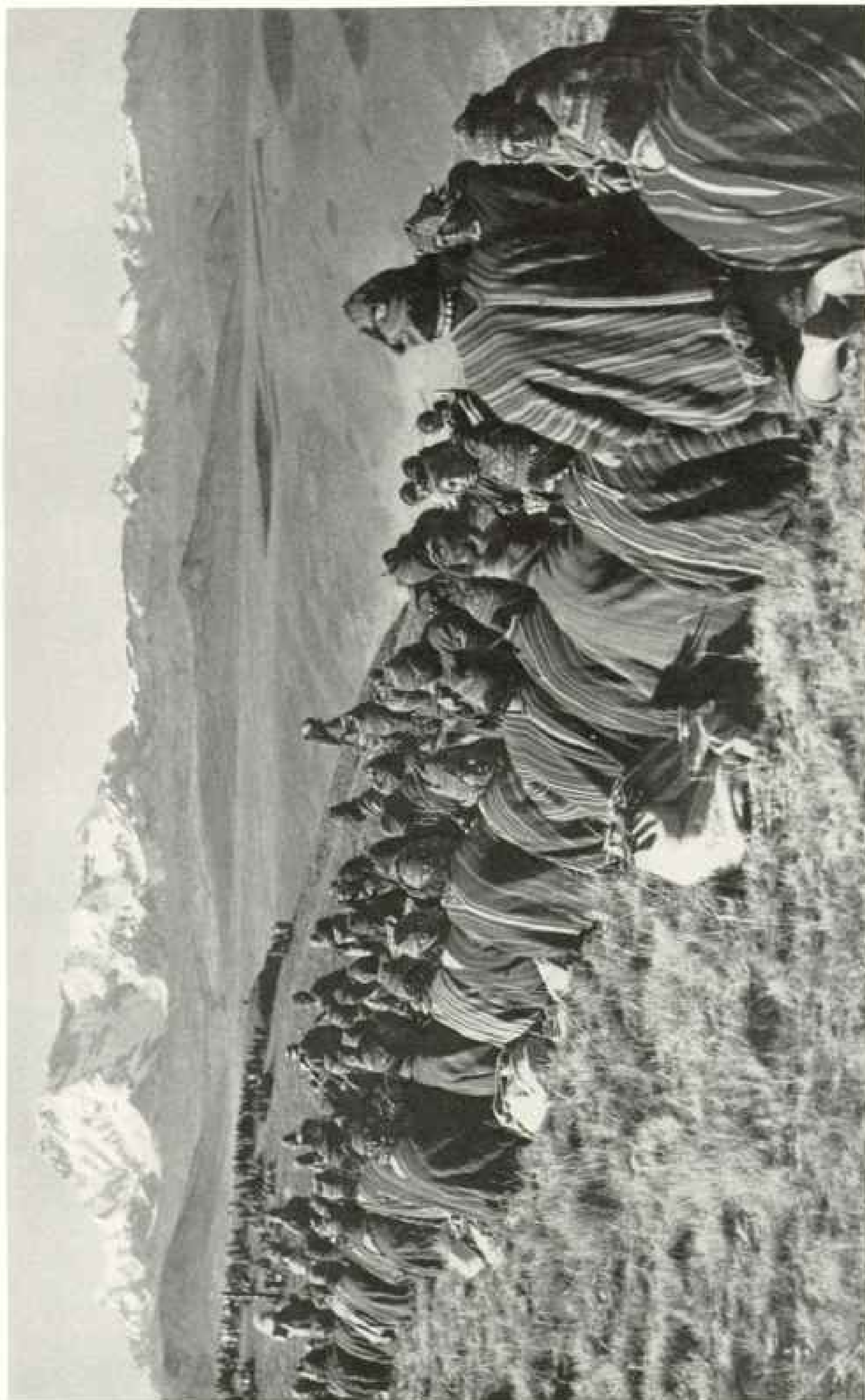
Lacking the carved ornateness of Mexican and Maya buildings, the structures made in the Inca period depend for their effect on balance and proportion. Tapering doorways with monolithic lintels, similar windows and niches, serve to break up surfaces which would otherwise be too plain to be sightly.

INCA "COLONIAL POLICY"

On the coast, where sun-baked clay was the chief material for building, stepped pyramids with gaily painted terraces supported the temples and the mansions of the great chiefs (Plate VII). Humbler folk lived in gabled houses of many colors. In both coast and highlands roofs were made of thatch; but, to judge by a few surviving examples, it was so exquisitely made as almost to rival the masonry.

Characteristic of the merciful sagacity of the Incas was their system of "colonies," based on an amazing knowledge of the importance of geographic factors. Either a tribe long accustomed to Inca rule was moved to some newly conquered region, where they taught the inhabitants the ways of the Inca house, or a newly vanquished people was moved *en masse* to a district whose denizens would be their teachers. In either case the physical quality of the place to which the colonists were to be sent was always as similar as possible to that of their homeland.

To acquire the knowledge of geography necessary for such a procedure, the Incas used relief maps, executed in colored clay,



Photograph by Martha Charnel J.

HUNDREDS OF NATIVES GATHER ON THE HILLS AT OCONGATE, PERU, FOR A CHRISTIAN RELIGIOUS FESTIVITY.

Whether worshipping the Sun or the white man's God, these highland Indians have always been deeply devout. Cathedral-like in the distance rises the snow peak of Ananigato (page 254). This concourse of Indians is a colorful sight, with reds, greens, yellows, and blues predominating in woolen mantles woven on crude hand looms (page 247).



Photograph by Martin Charnoff.

A PART OF THE INCA HERITAGE IS THE RHYTHMIC DANCE TO WAILING MUSIC OF PIPE AND DRUM

The throbbing tempo sets simulated feet stepping and mantles swaying in the street at Tinta, Peru. In similar fashion these Indians' ancestors under the Inca Empire danced in the opulent evening in the light of *Mama Quilla* the Moon (page 264). Note the warm woolen clothes, and the ear-flaps of the knitted cap worn under the hat. The wind is often cold in the Andean highlands; thus it is easy to see how the Incas came to worship the warmth-giving sun.



Photograph by Martin Chanda J.

FUEL SEEKERS COMB THE COUNTRYSIDE FOR ANYTHING THAT WILL BURN

Native youngsters bring in piles of brush to heat the ovens of Cuzco's bakeries, for firewood is scarce and there is no native coal. Both wear sandals made from worn-out automobile tires; the one at the right has more patches than pants and the other wears a home-made hat of wool beaten into felt with paddles, then crudely shaped.

whereon the natural features of each part of the realm were clearly indicated.

In the time of the Inca Tupac Yupanqui, about 1448-1482, Incadom was further enlarged by the conquest of a large portion of what is now Ecuador. This Inca, son of the great Pachacutec, began his career in the east, however, rather than in the north. His father had stopped forever invasions from that direction by means of his series of frontier citadels; now the son determined to do a little invading of the eastern wilds.

During long preparation he assembled a fleet of more than 250 war canoes, gaily adorned with carvings, canopies, and banners, and in them he and a great following journeyed down the Amaru Mayo (Serpent River, now the Madre de Dios) as far as its junction with the Beni.

The sylvan savages were poor folk from the Inca's point of view, and the only tribute which he could wring from them after much desperate fighting took the form of macaws, monkeys, honey, and beeswax. Besides, the climate of their land was noxious in its dampness and heat to men ac-

customed to the free, thin, cold air of the mountains. Consequently, the Inca contented himself with making a merely theoretical conquest in that region.

PROVINCE PAID TRIBUTE IN LICE

Later, after having conquered and Incaized the best parts of the Kingdom of Quito (Ecuador), and after having humorously exacted a tribute of lice from a certain province which seemed to produce nothing else, the Inca Tupac Yupanqui again took to boats (Plate I).

He built a great flotilla of rafts of buoyant balsa wood. These craft were pointed affairs, each having a hut with a hearth in it amidships, and a mast with a square cotton sail near the bow. They could carry a surprising number of fighting men and a considerable cargo of weapons and supplies. Their like may still be seen on the Guayaquil estuary.

The naval expedition of Tupac Yupanqui sailed from Tumbes, in northernmost Peru, and was gone for nearly a year. It is thought, with good reason, that it visited the Galápagos Islands.



Photograph by Martin Chuzzle J.

DRUDGERY HAS BOWED THE NATIVE'S HEAD, BUT LEFT THE HAUGHTY LLAMA'S HIGH

Both are burden bearers, but the man often has the heavier load; as his proud, camel-like companion refuses to carry more than just so much (page 239). Usually they are driven in packs, but some deign to be led on a rope. A third burden bearer of the Andes is the donkey, brought by the Spaniards, small, patient carrier of the heavier materials.

This maritime excursion is unique in Inca annals. As a rule, neither the Incas nor the other folk of ancient Peru were expert on the sea. Coastwise trading ventures on rafts and fishing voyages off the coast in boats of other quaint but cumbersome types were the nearest they ever came to mastering the Pacific Ocean.

The Coya, or Empress, of Tupac Yupanqui was the aforementioned Mama Ocllo, who was certainly his sister. By her he had several sons and daughters, as well as many score of children by his very numerous secondary mates (pages 228 and 241).

THE TWILIGHT OF INCA POWER

The heir of Tupac Yupanqui was the Prince Titu Cusi Hualpa, better known as the Inca Huayna Capac (Young Chief Rich in Virtues), who ruled from 1482 to 1528 or 1529. His reign was largely taken up with struggles to increase his realm by extending it down into Chile and by further subduing regions in what is now Ecuador. He was obliged also to try, often unsuccessfully, to maintain discipline throughout his realm.

The Empire had grown too large to be administered as well as Pachacutec had done. When we consider that it was equal in size to all our Atlantic States combined, and that its territory was far more diverse than is that of those States, we can readily understand the disruptive forces which were beginning to crack the mighty fabric.

A HAREM OF SEVERAL THOUSAND WOMEN

That the Inca Huayna Capac himself fearfully realized the overgrowth of his realm is made evident by his last will, inscribed in some mysterious incipient form of writing upon wooden rods or tablets.

In that document he divided the Empire between his legitimate heir by his sister-wife, the Prince Inti Cusi Hualpa, better known as Huáscar, to whom he gave the southern four-fifths of the realm, and his favorite but bastard son, Atahualpa, whose mother was almost certainly a daughter of the last independent king of Quito, so that there was a certain measure of justice in bequeathing that kingdom to her son.

Filled with dread of the future, partly

caused by the first faint rumors of white-faced and bearded strangers who rode on fierce and huge llamas and who commanded the lightning, the Inca Huayna Capac sought what solace he could find in his harem of several thousand women.

At last, sick and affrighted, he died in his palace at Quito. His body was taken in state to be buried at Cuzco, but his weary heart was laid to rest in his beloved Quito. This rearing of the Inca's corpse is strangely prophetic of what was soon to befall the Empire itself.

THE COMING OF PIZARRO

As might have been expected, Huáscar and Atahualpa speedily went to war with one another to gain the ancient supremacy. When, a few years later, Francisco Pizarro (page 226) led his tiny band of Spanish adventurers into the land, Huáscar was already a prisoner, and his half-brother was enjoying a usurped and transitory grandeur as Sole Inca.

The story of how Pizarro captured him by a trick, wrung from him the promise of a roomful of gold (worth well over \$3,000,000) by way of ransom, and finally condemned him to death after it had been honorably paid, has been graphically told by Prescott and by many others.

At length, in 1533, Atahualpa, whom all eye-witnesses describe as a grave and majestic monarch, handsome in person and very proud, was garroted amid the disconsolate wailing of his women and vassals.

With him died not only the Inca Empire but also an entire and unique politico-social philosophy and a civilization based upon the happiness of all. Money lust and gold hunger entered Peru along with Christianity, and the long struggle began between the just and fair intentions of both the Church and the King of Castile, and the determination of all too many individuals to wring as much wealth as possible from the Indians in the shortest possible time.

THE INCAS' SPIRIT STILL WALKS

Inca civilization was not, as many suppose, utterly obliterated. Rather, because of the liberal attitude of the Roman Cath-

olic Church, of the kings of Castile, and of the best men among the conquerors, it was blended with Spanish colonial civilization. The same thing happened wherever Spain ruled—in Central America, in Mexico, and in our own Southwest.

Today, in what was Incaland, the descendants of the Incas' subjects still constitute some 65 per cent of the total population; about 30 per cent are people of mixed blood; and the remainder are of pure Spanish blood. Civilization is compounded of about equal proportions of Indian and Spanish elements with, of course, a considerable addition derived from ultramodern international culture, including automobiles, radios, and airplanes.

Thus it comes about that, to this day, in many a remote Andean village, while the soft, opalescent evening is closing in, we may become aware that an Indian concert is in progress in the square. Drawing near, we see that the instruments are pure Inca in kind: flutes, Panpipes, clay trumpets, drums, and rattles. They combine to build up a pulsating music at once exciting and contagious, filling the mind with thoughts of bygone times.

THE DANCE OF THE MOON

Moment by moment knots of Indians come to the dance, until the whole adult population of the village is treading an antique and stately measure under the silver-bright radiance of Mama Quilla, the moon. The insidious but imperative lilt of the orchestra commands their every motion (pages 255 and 261).

A steady increase of fervor begins; it mounts and mounts until the square is filled with wildly whirling skirts of women and swaying forms of mantle-draped men. At last a veritable frenzy is attained which lasts until the dancers drop exhausted and the wailing, throbbing melody dies away like a sigh on the cold night wind.

Departing, we realize that we have witnessed something which Pachacutec must often have seen in the Golden Age of the Incas, long ago; and we can almost convince ourselves that his spirit, brooding and wistful, has been among us.

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

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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 Expedition.

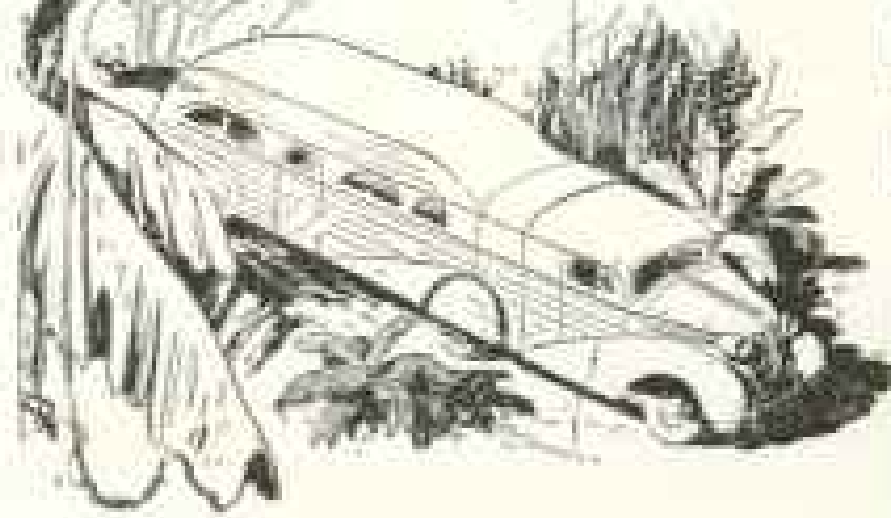
The Society granted \$25,000, and in addition \$75,000 was given by individual members, to the Government when the congressional appropriation for the purpose was insufficient, and the finest of the giant sequoia trees in the Giant Forest of Sequoia National Park of California were thereby saved for the American people.

The Society's notable expeditions in 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 civilization dwellings in that region, The Society's researchers have solved secrets that have puzzled historians for three hundred years. The Society is sponsoring an ornithological survey of Venezuela.

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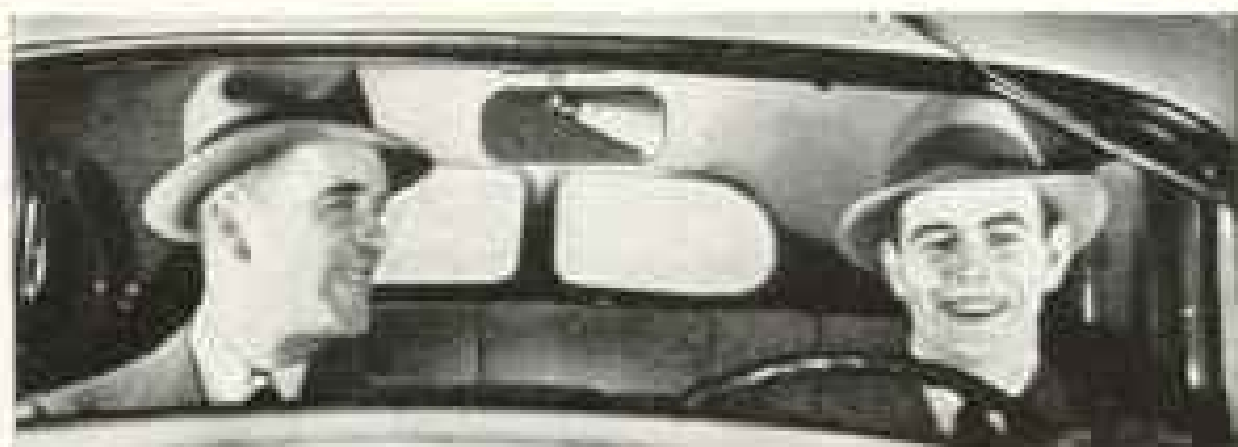
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beautiful example of
car styling."

WHEN you buy a car—do two things:
check *actual prices*, then check
what you get for your money!

You'll be amazed at how much *extra value*
Plymouth's **LOW PRICE** brings you!

Be sure to **DRIVE AND RIDE** in the new
1938 Plymouth. Do it soon...you'll find it a
fascinating new experience!

NOW is the time to get 1938's biggest buy.
Check the new value of this new Plymouth.
See your Dodge, De Soto or Chrysler dealer
—soon! **PLYMOUTH DIVISION OF CHRYSLER
CORPORATION**, Detroit, Michigan.

**MAJOR BOWES' AMATEUR HOUR, COLUMBIA
NETWORK, THURSDAYS, 9 TO 10 P.M., E. S. T.**

PRICES ON ALL MODELS

Delivered in Detroit, including
Federal taxes. Local, State
taxes not included.

BUSINESS MODELS

Coupe, \$645; 2-Door Sedan,
\$685; 4-Door Sedan, \$730.

DE LUXE MODELS

Coupe, \$730; Coupe with
Rumble Seat, \$770; Con-
vertible Coupe, \$850; 2-Door
Sedan, \$775; 2-Door Tour-
ing Sedan, \$785; 4-Door Se-
dan, \$865; 4-Door Touring
Sedan, \$815.

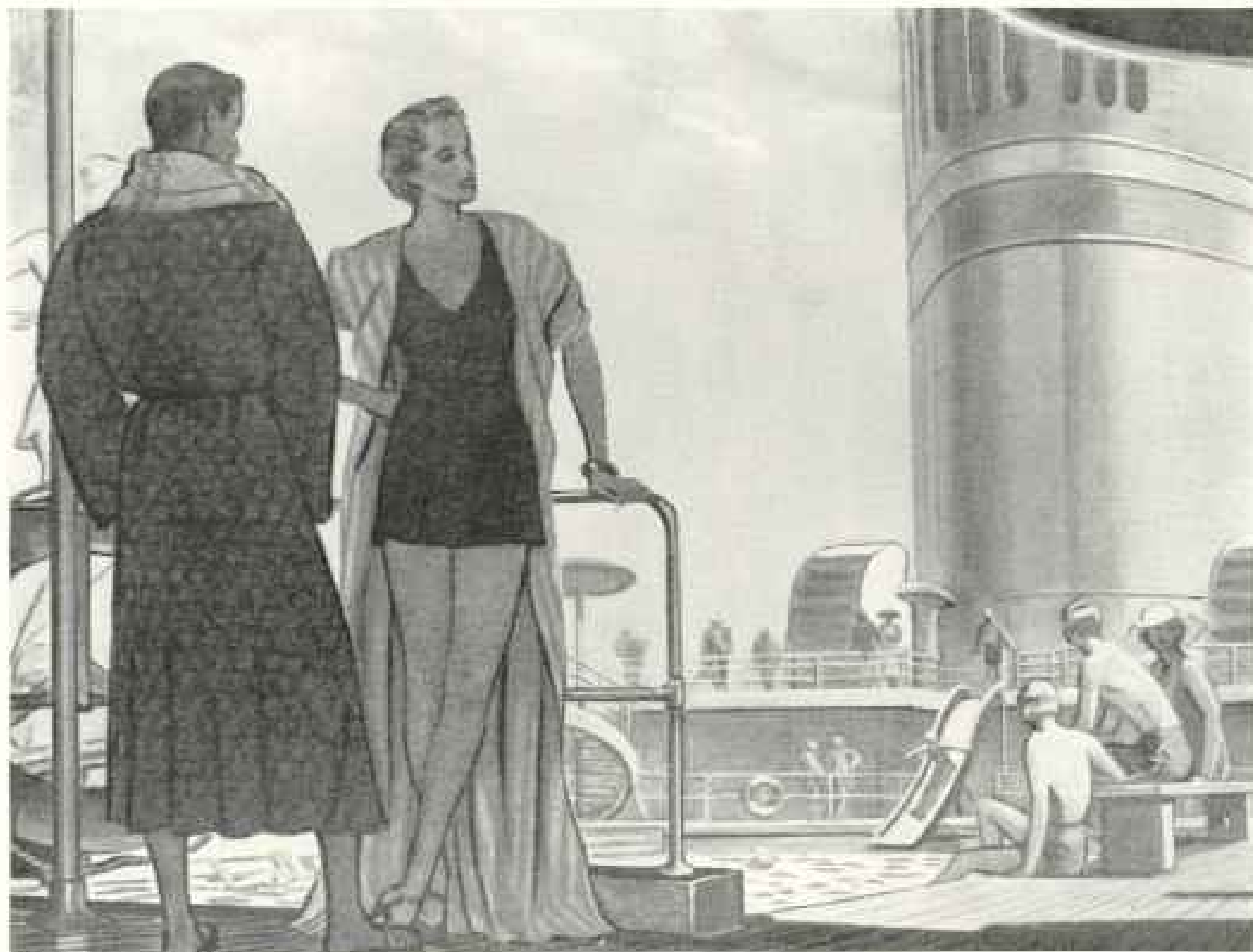
For delivered prices in your
locality, see your Dodge, De
Soto or Chrysler dealer.

SEE THE 1938 PLYMOUTH



"Mention the Geographic—It identifies you."

Winter takes a Lido holiday



LIDO DECK—Conte di SAVOIA



The Thermometer Tells the Story! . . . 69° is a fairly normal room temperature on a typical Southern Route crossing . . . though it may be freezing at home. Ask your Travel Agent for our illustrated weather-map booklet giving comparative statistics.

WINTER goes a-summering on the Southern Route! Though the calendar wears a frosty look, it knows no power to change the bright skies, the blue waters, the friendly temperatures . . . as your Italian liner approaches mid-ocean, skirts the Azores, pauses at Gibraltar and moves serenely on into the placid Mediterranean.

"Lido" takes command! Thanks to the beneficent weather . . . and thanks many times over to the design and construction of

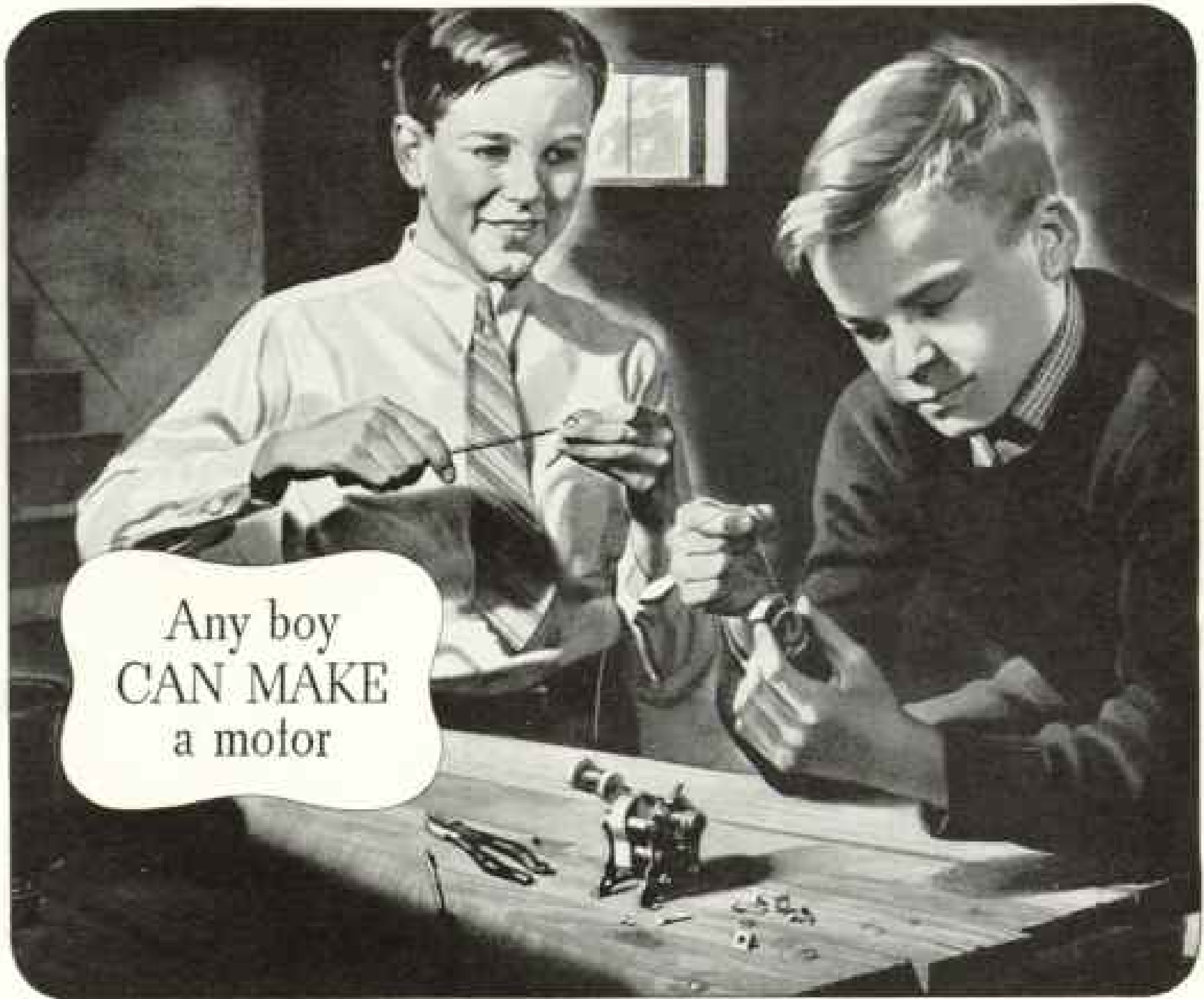
Lido ships . . . your Winter crossing is transformed into a beach-revel of warmth and sunshine. For this is the open-air way to all Europe, especially in the cold months. Board the great Rex, the gyro-stabilized Conte di Savoia or the charming Roma, for an express voyage. Or treat yourself to the leisurely nine or ten port itinerary of the popular Vulcania or Saturnia . . . if you can afford the time to see more on your way to Europe.

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."



Any boy
CAN MAKE
a motor

Fitting them to the world's work is a man-size job

FOR a thing so important to modern life, an electric motor is an amazingly simple device. Just a few pieces of steel and iron, wound with coils of wire. Any bright boy can follow instructions and make one that will run.

Yet the most romantic story ever told could be written about the electric motor. It runs practically every mechanical device in use today. It turns the wheels of industry — carries

people to work from the suburbs to the topmost floors of tall buildings. The daily lives — even the livelihood — of most of us depend in some way upon it.

The job of fitting electric motors to the world's work is an exacting one. What makes it complicated is that every task, to be done efficiently, requires a certain kind of motor. Westinghouse, for example, offers over 20,000 different

types, sizes and ratings. If none of these is exactly what is needed, a special model will be built to order.

The electric motor is "bread and butter" to Westinghouse — and to just about everyone else. Fully conscious of its responsibility, Westinghouse research continues each year to seek improvement in motor design — so that the world's work may be done better, faster, and at less cost.



Westinghouse

The name that means everything in electricity

"Mention the Geographic—It identifies you."

NASSAU IN THE BAHAMAS

Swimming *all winter* at world-famous beaches; fishing, sailing, golf, tennis, polo—cooling rum swizzles on the terrace of a fine hotel or at a famous bar—visits to Blackbeard's Tower and Fort Charlotte, guarded by its colorful Zouave sentries—native sponge markets, tropical flowers and a temperature that seldom falls below 68°!



THE "Carinthia"

...FAMOUS WORLD CRUISE LINER SAILS EVERY SATURDAY

Whichever week you decide to go there's a convenient Cunard White Star sailing in the famous world cruiser, Carinthia. Six-day cruises permit a daylight day and evening ashore in Nassau. Stop-over privileges, for those desiring a longer stay, and 13-day all-inclusive tours at surprisingly low rates. No passport required.

SCHEDULE OF SAILINGS

SATURDAY	3 P. M.	February 5	. .	CARINTHIA
SATURDAY	3 P. M.	February 12	. .	CARINTHIA
SATURDAY	3 P. M.	February 19	. .	CARINTHIA
SATURDAY	3 P. M.	February 26	. .	CARINTHIA
SATURDAY	3 P. M.	March 5	. .	CARINTHIA
SATURDAY	3 P. M.	March 12	. .	CARINTHIA
SATURDAY	3 P. M.	March 19	. .	CARINTHIA
SATURDAY	3 P. M.	March 26	. .	CARINTHIA

6 DAYS
\$75 UP

One-way fares \$65 up; Round-trip fares with stopover privileges \$95 up

Ask your Travel Agent or consult Cunard White Star Line, 25 Broadway, or 638 Fifth Avenue, New York . . . or Nassau, Bahamas, Information Bureau, 30 Hochfelder Plaza, New York.

CUNARD WHITE STAR

"Mention the Geographic—It identifies you."

Style in steel

YOU may think twice about a car's safety—but you look at them all for style, as well. That's how the Unisteel Body by Fisher wins you over... Your own eyes show you it's outstandingly smart. Your good sense tells you it's superlatively safe... For in its construction, steel is fused soundly to steel, forming a sturdy, solid steel unit... Within this glorified steel structure is luxurious comfort—wider seats, full-vision windows, room to lounge... Fresh air is always on tap, in fair and stormy weather, thanks to Fisher No Draft Ventilation, while noise and heat and cold are strangers to this shock-proof body with effective insulation standing guard... You'll find this smartly styled, impressive masterpiece in steel on the new General Motors cars—the *only* cars with the Unisteel Turret Top Body by Fisher.



The popular suggestion, "Better buy Buick," is based on many features—and among the most important is its Unisteel Turret Top Body by Fisher.



Body by *Fisher*

ON GENERAL MOTORS CARS ONLY:
CHEVROLET • PONTIAC • OLDSMOBILE
BUICK • LA SALLE • CADILLAC



Red Lodge HIGH-Road to Yellowstone Park

Open but one short year to Northern Pacific Rail travelers, the newest entrance into Yellowstone, Red Lodge...via the glorious HIGH-Road that skirts the mountain tops for many miles...has been praised by thousands as "one of the most glorious sights in the world."

You'll hear it compared to parts of the Alps; you'll not find words to express your awe and wonderment over its scenic panoramas of mountain peaks, lakes, forests and falls. This dramatic Yellowstone tour starts from Red Lodge, Montana, which is reached by through Pullmans on the Northern Pacific. For the maximum of thrilling sight-seeing, go in Red Lodge, out Gardiner or Cody Gateways.

May we help you plan your vacation to include this outstanding trip? Any Northern Pacific agent will be happy to help you. Or the coupon below will quickly bring complete details.

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101 Northern Pacific Railway, St. Paul, Minn.
Send me information, please on: (Check data desired)
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 California Rainier Park Pacific N. W.
 Rocky Mt. Trade Ranches
 I am interested in Escorted Tours
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 Address _____
 City _____ State _____
 If student, state grade _____

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**"AMERICA'S NEWEST
 TRAVEL THRILL!"**

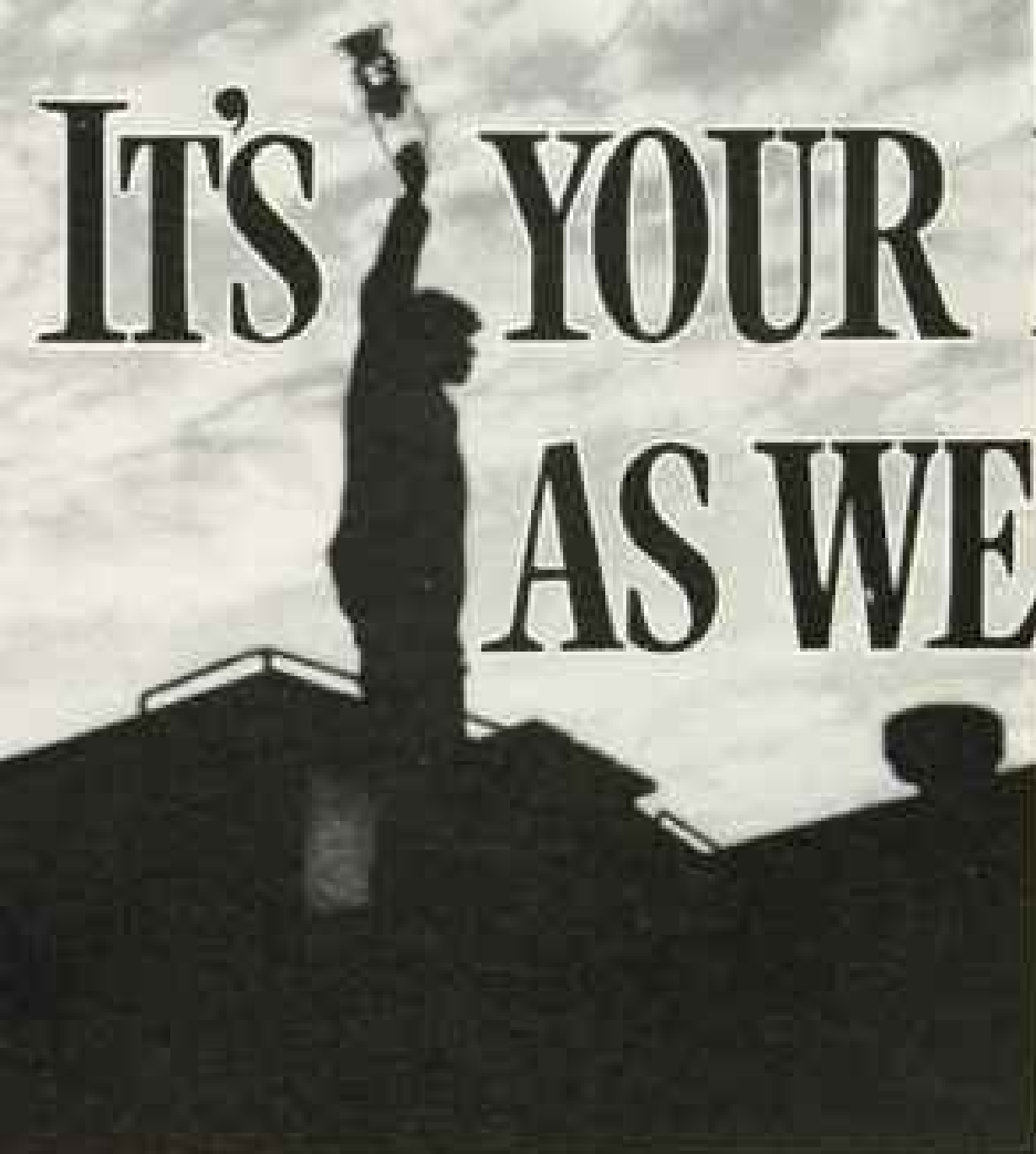


Red Lodge
 HIGH-Road...
 literally "atop
 the world" for
 many miles,
 pathway to the
 clouds.

Route of the Air-Conditioned

NORTH COAST LIMITED

IT'S YOUR FUTURE AS WELL AS OURS



A JOB for every man who wants to work—a time when every farm and factory and mine will be busy producing things which people need—

That's not impossible in the nation that has made the most spectacular growth in history. Every reason argues the nation will continue to go ahead.

Sure of this, the American railroads have, even in lean and trying times, steadily built toward the day when increased commerce will need and profit by finer transportation than it has ever had before.

So the railroads have doggedly pressed for better service, laying heavier rails, straightening curves, cutting down grades, increasing the average speed of freight trains almost fifty per cent—producing transportation more cheaply and more efficiently year by year.

The record of the past decade clearly demonstrates the determination of the railroads to keep their service abreast of America's needs—and their *ability* as well.

But if America is to have the tools she needs to prosper, railroads must earn enough to continue this progress.

Since 1933, prices of the things railroads buy have gone up; wages have increased; taxes have risen—while the average level of railroad freight and pas-

senger charges has steadily declined.

Advancing production costs in other industries have been accompanied by increased consumer prices.

The average charge by the railroads for hauling a ton of freight one mile was, on the contrary, actually 10 per cent less in 1937 than in 1932—26½ per cent less than in 1921, shortly after the end of government operation, when the downward trend of rates began.

As a result, they have been compelled to cut down forces and curtail purchases of the 70,000 different items which railroads buy. That means less work, less business, less prosperity in industries and communities in every corner of the land.

And that's what we mean when we say it's your future as well as ours—that's why you have a vital interest in seeing that the railroads earn enough to help bring about increased employment and a broader prosperity.



ASSOCIATION OF
AMERICAN RAILROADS

WASHINGTON, D. C.

"New England
satisfies all my
vacation desires"

Rugged sea coast,
green valleys, gorgeous
mountains, tumbling
brooks, sparkling lakes
historic villages, su-
perb motor highways,
hidden country lanes,
fascinating mountain
trails, secluded coves,
restful farm homes,
exclusive hotels and
gay summer colonies—
all these can be found
in New England where
every vacation desire
can be satisfied.

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Send for free booklet to plan your New England trip. It's filled with pictures and vacation facts. Tells how you can save money, too. A big magazine value, but free while the supply lasts. Tear out coupon now.

NEW ENGLAND COUNCIL
Statler Building, Boston, Mass.

Please send me my copy of the New England Vacation Booklet G-18.

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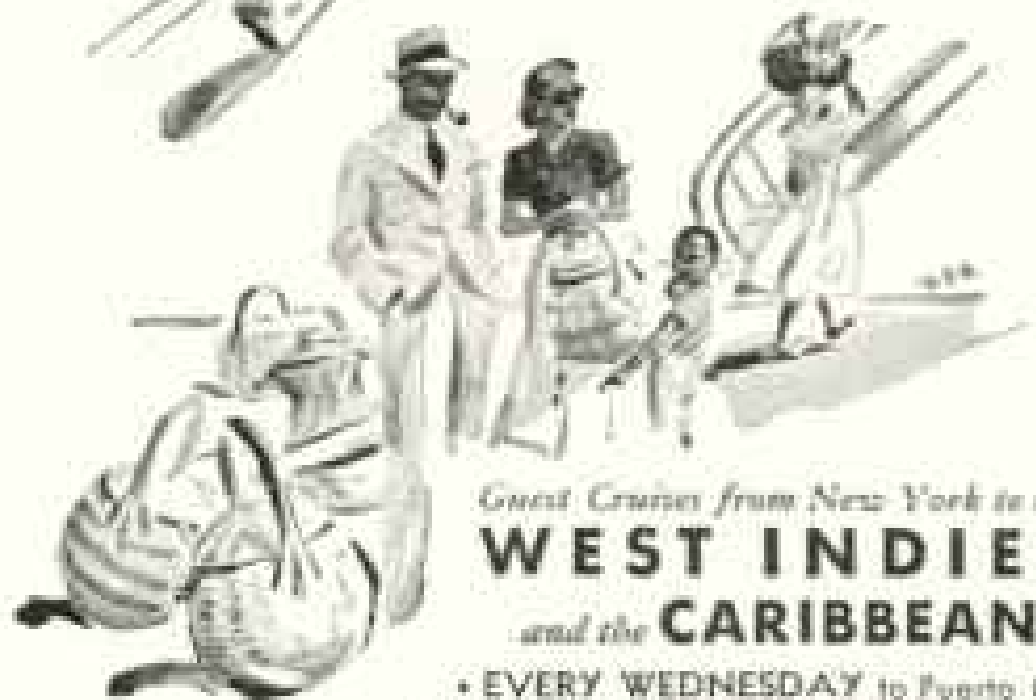
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Include New England again in your 1939 World's Fair plans.



"I've never enjoyed a
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You'll hear it often as your spotless, turbo-electric liner especially built for tropical service heads for the blue Caribbean... You'll hear it repeatedly as you play—rest—tan in the sun on broad sports decks, and regally dine in spacious salons. You'll hear it from the smart, travel-wise shipmates who share your pleasure and your company in the gay, informal shipboard life of the Great White Fleet... or ashore in fascinating tropical ports.



Guest Cruises from New York to the **WEST INDIES** and the **CARIBBEAN**

• **EVERY WEDNESDAY** to Puerto Colombia (Barranquilla), Cartagena, and Santa Marta in Colombia; South America; with 2 calls at Kingston, Jamaica, E.W.I. 14 days... \$185 up.

• **EVERY SATURDAY** to colorful Costa Rica, including two calls of gay Havana and the Panama Canal Zone. 15 Days... \$210 up.

Orchestras, grand music, outdoor swimming pool.
All outside restaurants, mechanical ventilation.

Ask about weekly cruises from Philadelphia to Guatemala—19 days \$255. Other Guest Cruises weekly from New Orleans.

Apply any Authorized Travel Agent or **UNITED FRUIT COMPANY**,
Pier 3, N.R. or 632 Fifth Ave., N.Y.C.; 111 W. Washington St.,
Chicago; 321 St. Charles St., New Orleans; Pier 9, North Wharves,
Phila.; 201 Tremont St., Boston.

Great White Fleet



Who buys Hammond Organs? Thousands of Hammonds have been sold. They are being played in palaces and cottages. Great symphony orchestras—the Philadelphia Orchestra is one—own and use Hammond Organs regularly. More than fifteen hun-

dred are in churches of nearly every denomination, ranging from lofty cathedrals to tiny missions. Other hundreds have been bought by conservatories, schools, colleges, hotels, restaurants, radio stations, hospitals, lodges, etc.



Is it difficult to install? The Hammond fits in a four-foot square. Installation is merely a matter of connecting to an electric outlet. Two men can carry the Hammond anywhere.

Answers to your questions about the Hammond Organ

Can many different instrumental tones be played? Yes—just by touching various "stops" you can change the tone. Flutes, violins, wood winds and hundreds of other voices are available.

Why are pedals used? Pedals make an organ easier to play. Organ chords do not keep on sounding after the fingers are lifted. But with a single pedal note you make the music sustained.



How are the tones created? In the conventional organ the tones are created by vibrating columns of air in pipes. But the Hammond originates its tones as minute, pulsating currents of electricity. This modern principle makes possible an instrument remarkably compact and rugged, which cannot get out of tune.



Is the Hammond Organ easy to play? Many claim the Hammond is easier to learn than the piano. Anyone who plays the piano can, almost immediately, play rich and interesting music on the Hammond Organ.

Why are two keyboards used? Two manuals allow you to use two different tones at the same time—brilliant contrasts that make rich and satisfying music out of even the simplest tunes.

Can I afford a Hammond Organ? Yes—the Hammond is in the price range of fine pianos. With a small down payment, you can buy it out of income. The Hammond dealer in your city will be glad to play the



Hammond for you. *Go to him now.* Or write to The Hammond Organ, 2959 N. Western Ave., Chicago. In Canada, address Northern Electric Co., Ltd., Montreal. **\$1250** and up L. O. B. Chicago.



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and I'm on my way!

"YES, SIR! I'm independent! From now on, Lincoln National Life pays me money every month—for the rest of my life! And I'm headed for the Mediterranean, and points East!"

Every day, men of modest income are setting out to do the things they have always wanted to do. They have leisure and money simply because they had the foresight to provide a retirement income from an ordinary, average salary.

You can afford it

A few dollars, set aside regularly, through the Lincoln 5-Star Annuity Plan, safeguards your family's future, and also enables you to retire at any age from 50 to 70, with a guaranteed income.

Investigate this simple, easy solution of *your* financial independence now. Full details are explained in an interesting booklet, "I'm Fixed—How Are You Fixed?" which is free for the asking. Fill out the coupon below and send for your copy today.

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THE LINCOLN NATIONAL LIFE INSURANCE CO.

FORT WAYNE, IND. — Dept. G-2

Send me my free copy of your 5-Star Annuity booklet "I'm Fixed—How Are You Fixed?"

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Address _____

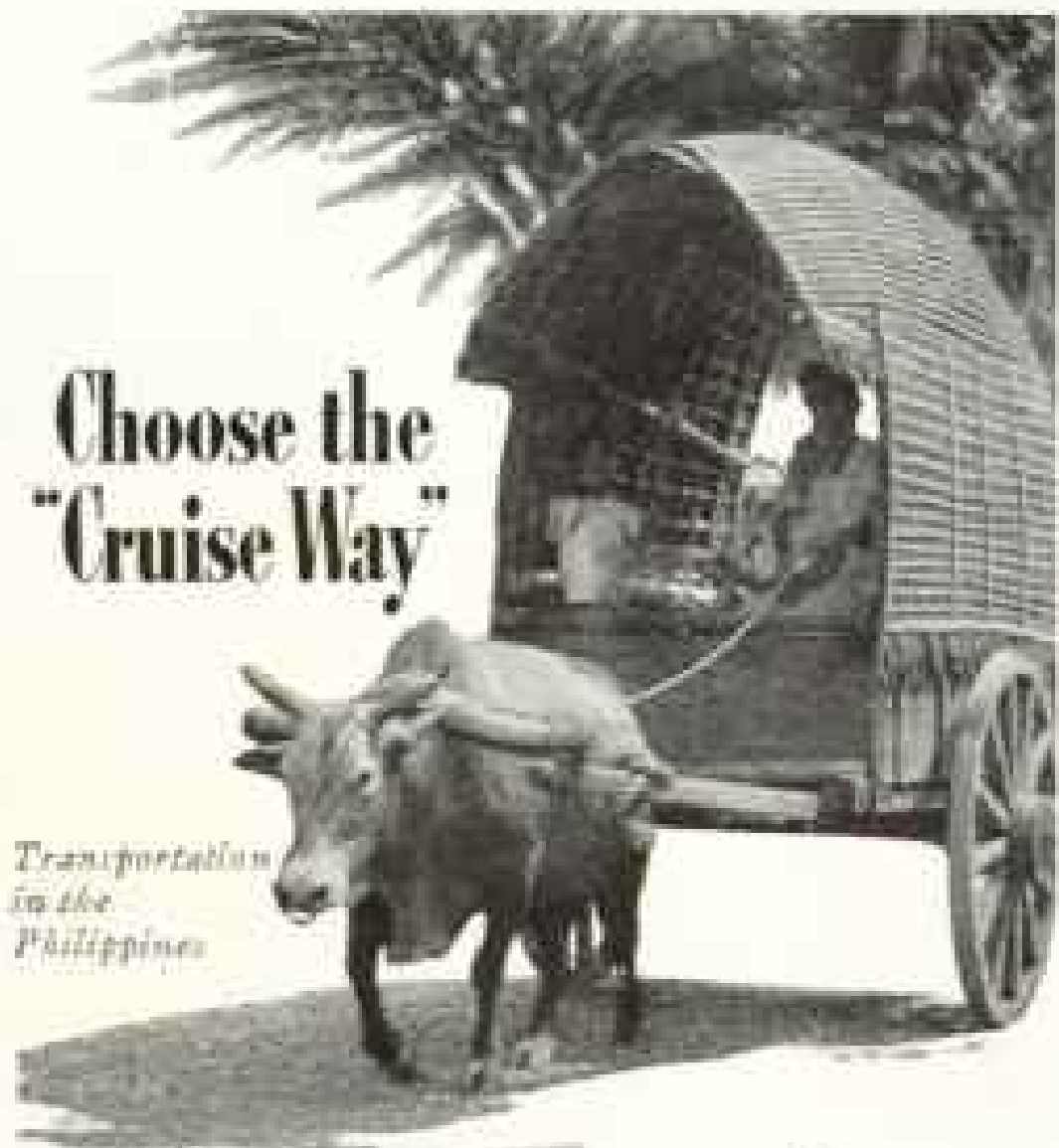
City and State _____

Present Age _____



Choose the "Cruise Way"

Transportation in the Philippines



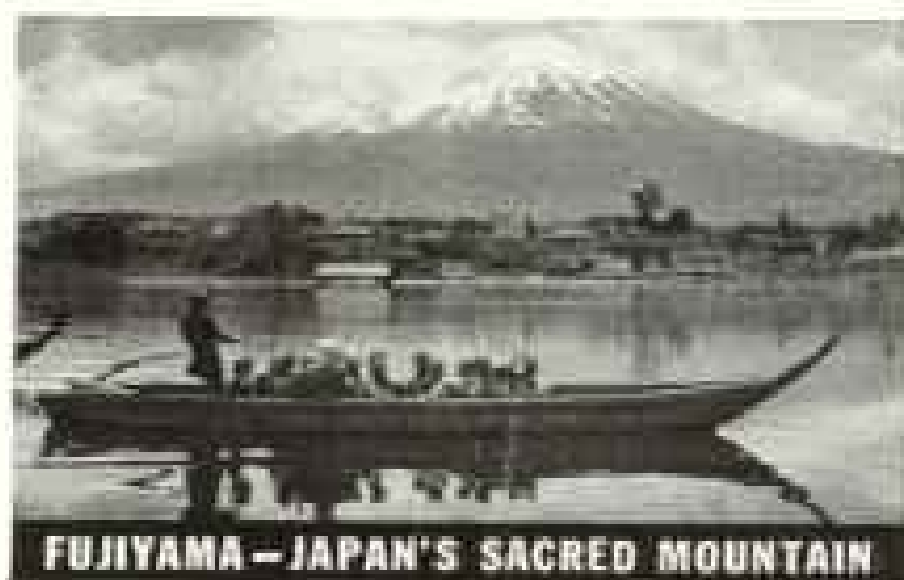
on the
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With
Record-Breaking
EMPRESS
Liners

Just to sail with a great white *Empress* while she makes her Orient voyage is one of the rarest thrills in luxurious travel. From Vancouver and Victoria you'll visit lovely Hawaii or go direct to Yokohama in 10 record days . . . then Kobe, Nagasaki, Hong Kong and Manila. Your *Empress* is your hotel in port when you go this fascinating "cruise way." YOUR OWN TRAVEL AGENT or Canadian Pacific: 41 offices in the United States and Canada.

Canadian Pacific

WORLD'S GREATEST TRAVEL SYSTEM



FUJIYAMA — JAPAN'S SACRED MOUNTAIN



For a Growing Sense of Security

United States Savings Bonds contribute to a *serene present* and a *secure future*. Present returns are measured in peace of mind and freedom from investment detail. Future returns consist of a $33\frac{1}{3}$ per cent increase on investment in ten years. Every investor in Savings Bonds knows that—

- 1—His funds are safe . . .
- 2—They will increase in dollar value every year until maturity of the bonds . . .
- 3—The bonds are free from price fluctuation.

This knowledge gives him and those dependent

upon him a sense of security, which grows as their savings grow to meet future needs. Today's investment of \$75 in Savings Bonds grows to \$100 in ten years. As little as \$18.75 or as much as \$7,500 may be invested each calendar year for each member of the family.*

By registering Savings Bonds in the alternative such as *Mr. John K. Smith OR Mrs. Isabelle Gordon Smith*, an investor affords mutual protection to himself and wife. Bonds thus registered may be redeemed by either person named as co-owner without the signature of the other.

UNITED STATES SAVINGS BONDS

DIRECT OBLIGATIONS OF THE UNITED STATES GOVERNMENT

MONEY FOR THE FUTURE

If you invest **\$18.75, \$37.50, \$75 or \$375** each month in Savings Bonds, under the present offering, there will be payable each month, beginning at the end of ten years from your first investment, a sum $33\frac{1}{3}\%$ greater than the amount of each purchase, and continuing for as many months as you may have made the original investments.

**Although a person holds \$10,000 (maturity value) of Savings Bonds issued in 1937 or in any previous year, he may acquire an additional amount not in excess of \$10,000 (maturity value) issued during any subsequent calendar year, so long as the present offering is continued.*

.....FOR SALE AT POST OFFICES AND DIRECT BY MAIL.....
TO ORDER BY MAIL

TREASURER OF THE UNITED STATES, 2-N, Washington, D. C.

- Please send me without obligation your Regular Purchase Plan and forms for my consideration and optional use.
 Send me the following bonds for which I enclose check, draft, or money order.

NUMBER

.....	\$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 or any calendar year (Jan. 1 to Dec. 31) may be held by any one person.

Register in { Name { ^{Miss} _____
 { ^{Mr.} _____
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the name of { Street address _____
and send to { _____
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Make all remittances payable to Treasurer of the United States

*There's Romance
to travel...*



**... ON THE ANCHOR LINE TO
EUROPE VIA SCOTLAND AND IRELAND**

Sturdy Anchor liners, Scottish as heather, recapture the romance of leisurely sea voyaging. Sailing Anchor Line, you'll enjoy the heartfelt hospitality of which Anchor Line is justly proud. And proud, too, of its honest, unobtrusive service, its savory, bountiful food.

What's more, you'll save money. Anchor Line's rates are considerably low. And Anchor Line's is the famous economy route to Europe, because you start your trip abroad at the top of the map. Visit lovely Ireland; dock direct at Glasgow for its Empire Exhibition and fabled Scotland, then down through the North of England to London in a few hours—*en route to the Continent*. No costly, uneconomical retracing of steps—you travel in a "going" direction all the way. Frequent sailings from New York and Boston to Londonderry, Dublin, Belfast and Glasgow.

MINIMUM RATES: Cabin Class \$155.00, Tourist Class \$120.50, Third Class \$91.00. Slightly higher in summer season. Reduction for round trips.

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Independent tours, pre-arranged to your wish. "Circular Tours" that go "everywhere", suit every whim and purse. Scotland by the famous "Flying Scotsman" and the "Royal Scot". Ireland by rail and steamer. To the Continent via such famous ports as Harwich, Dover and Folkestone and to Paris via the "Golden Arrow" route.

Write Dept. 407 for the new "This is England" booklet. Address:

C. M. Turner, General Traffic Manager, 9 Rockefeller Plaza (15 West 49th St.), New York. L. T. Jones, Middle West Representative, 333 North Michigan Ave., Chicago, Ill. J. D. Cameron, Pacific Coast Representative, 412 West Sixth St., Los Angeles, Cal., or your own Tourist Agent.



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Roadmaster is the name!

THESSE are the statistics: Its bonnet houses 141 ready-willing-and-able horsepower.

Its swift wheels can spurt you from ten to sixty in 18 seconds flat.

From a ten-m.p.h. start at the bottom, it will swoop you over an eleven per cent hill with an easy forty-four at the top.

But the *smoothness* of its panther-like gait is something statistics can't picture; the heart-warming *satisfaction* in its eyewink answer to your treadle foot is something you can only *feel*.

The point is that it's boss of any road, with its DYNAFLASH engine to set the thrilling pace and its TORQUE-FREE SPRINGING to make smoothies out of rough spots.

We wish you'd try it — just to see if you can name its rival within a thousand dollars of its price.

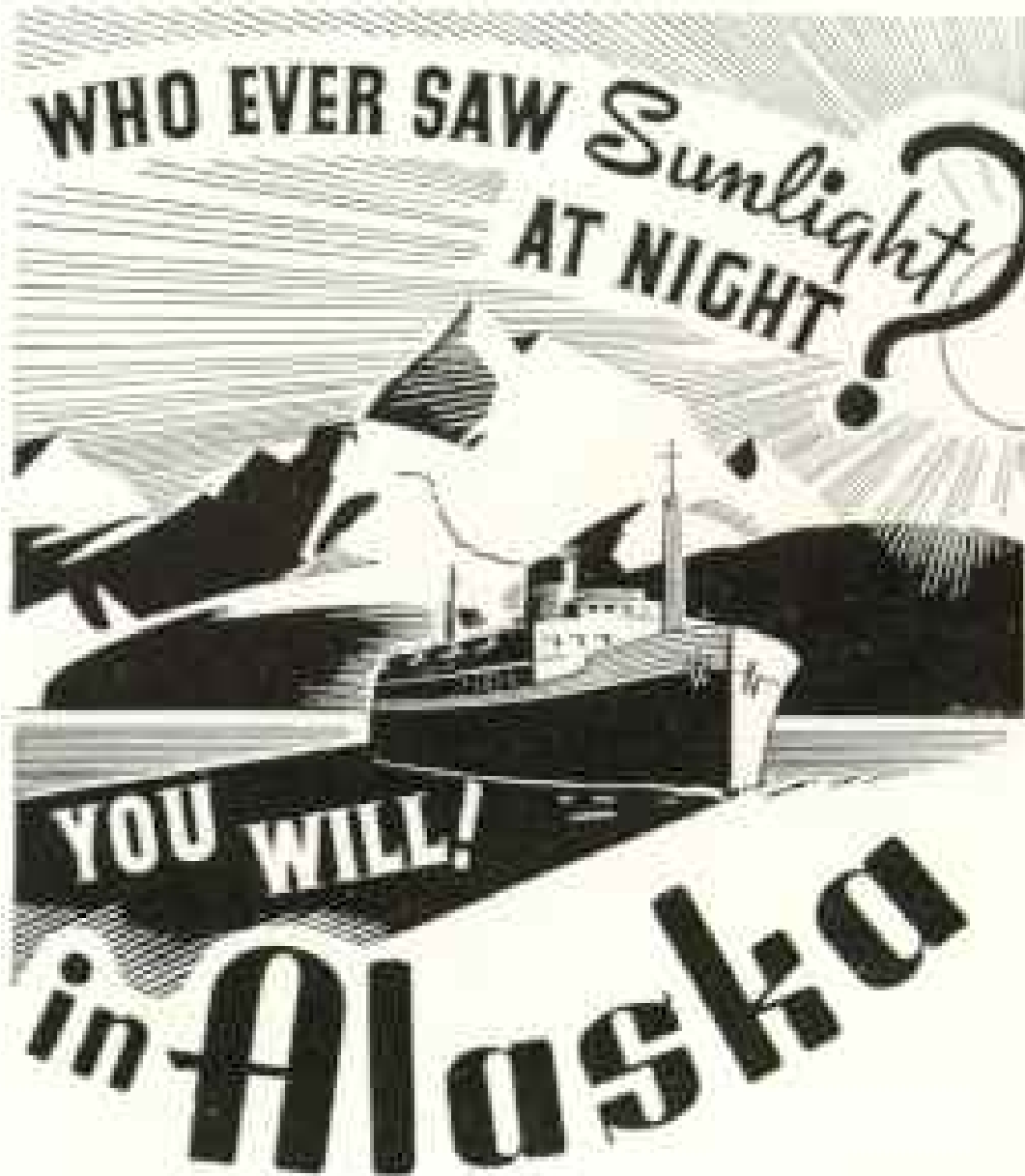
The Buick shown is the ROADMASTER touring sedan, delivering at Flint, Mich., at \$1645, complete with standard equipment. Fenderwells, white sidewall tires and special accessories extra. There are 4 ROADMASTER models ranging in price from \$1645 to \$1953, and 3 LIMITED models from \$2176 to \$2453 delivered complete at Flint. State and local taxes if any and transportation extra.



"Better buy Buick!"

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• Early in Alaska's long May-through-September summer vacation season Old Sol works the night-shift! During May and June the eccentric Midnight Sun stages its most extravagant show, dipping behind the snow-capped horizon for only a few hours a night, pausing there to paint the sky in soft pastels.

Come, explore this nearby land where mighty glaciers thunder beneath the warm Midnight Sun. Speed safely over scenic rail lines to Seattle, sail aboard an All-American steamer through smooth mountain-sheltered seas to entrancing Alaska—"air-cooled" all the way! Discover romance in every port of gold, totem, or old Russian fame. Find adventure in the Interior along The Alaska Railroad, where the sleepless sun is even more remarkable.

A wide choice of short and long cruises and cruise-tours, with modest rail and all-inclusive steamer fares, brings an Alaska vacation well within your reach.

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THE ALASKA RAILROAD
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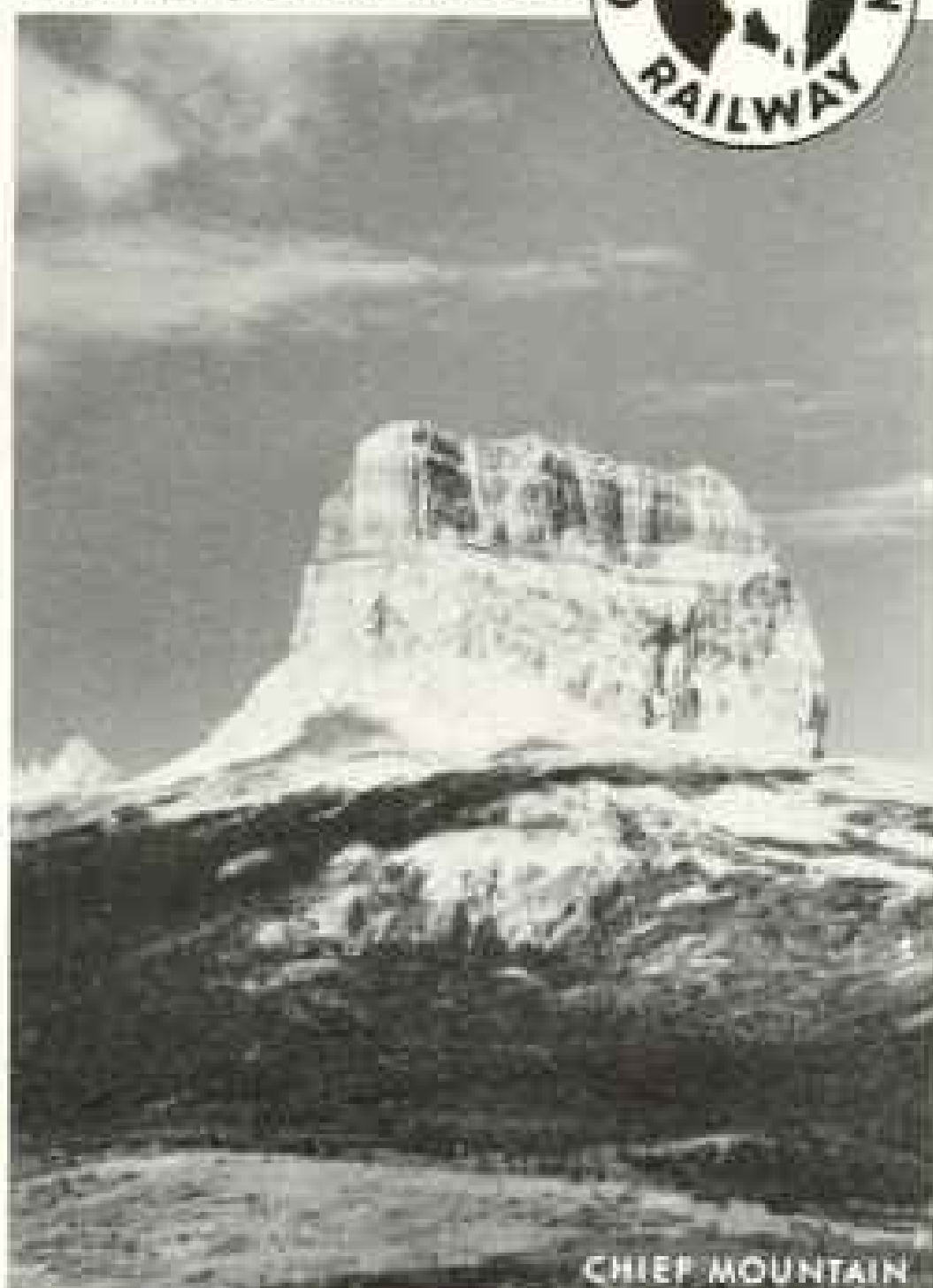
For fascinating FREE Alaska Vacationland literature mail the coupon to Alaska Steamship Company, Room 800, Pier Two, Seattle; and see any of these rail lines.



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For The Alaska Line's Good-Natured Map enclose 10c

Have Fun
this Summer



CHIEF MOUNTAIN

in Glacier Park

In Glacier National Park alone are 60 glaciers, 250 alpine lakes, 1001 waterfalls, and multi-colored mountains. Through this "Sublime Wilderness" 1000 miles of trails connect modern hotels, picturesque chalets and comfortable camps which offer you carefree hospitality.

Here you can ride or hike—fish for fighting trout (rainbow, speckled or cutthroat)—go boating—take superlative camera shots of scenes, Indians and wild animals. You can visit Waterton Lakes Park in the Canadian Rockies, adjoining Glacier Park on the North.

Going to Glacier Park is easy and comparatively inexpensive. It's on the main line of Great Northern Railway. The transcontinental Empire Builder (luxurious, air-conditioned) stops at both entrances. Ask your nearest railway ticket agent or travel bureau about all-expense tours in Glacier and Waterton Parks.

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Great Northern Railway, Room 701, St. Paul, Minn.

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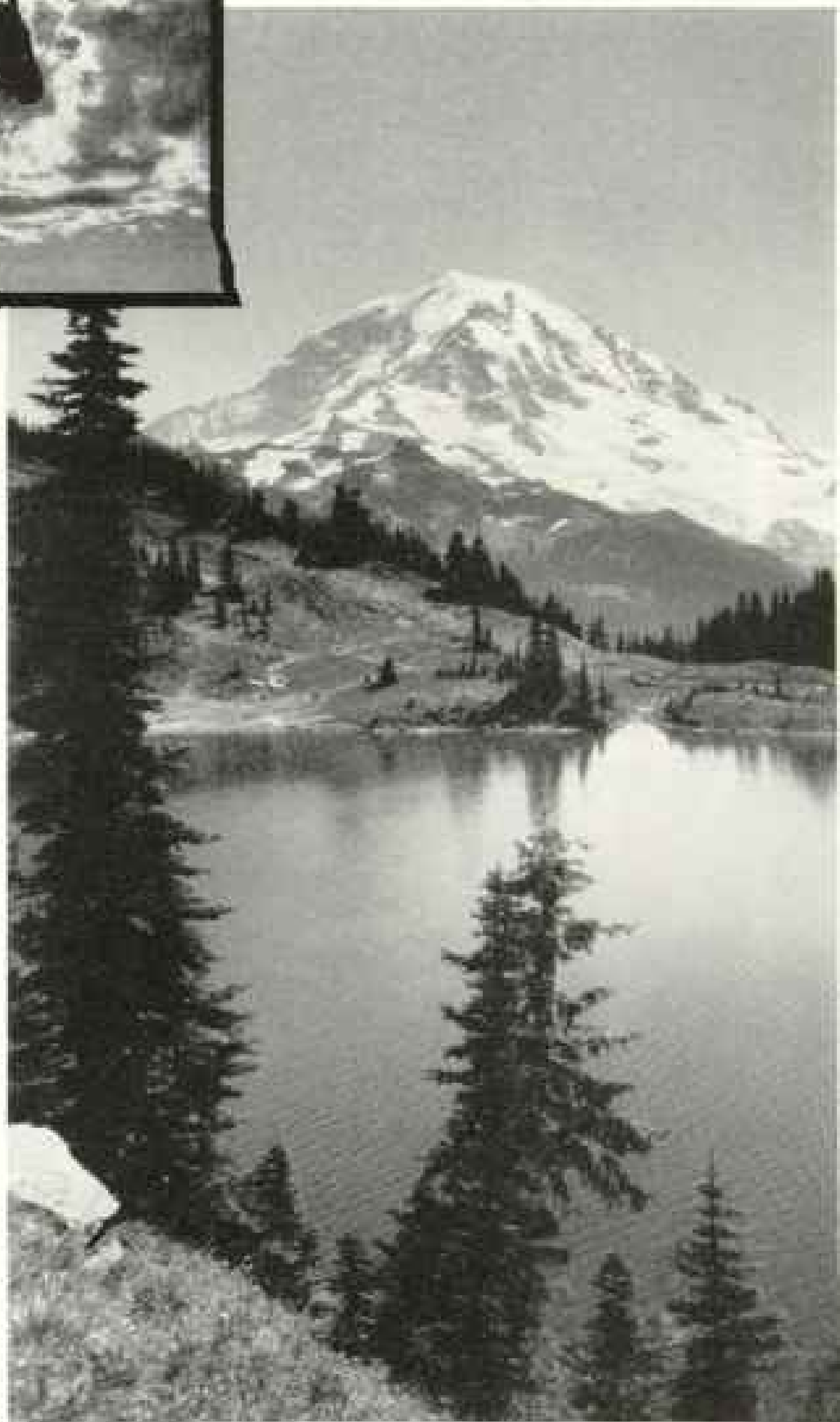
WASHINGTON STATE... and you at forest inns where snow peaks mirror in glacier lakes... you roaming the 172 sunny San Juan Islands of Puget Sound... you and the miracle of Grand Coulee Dam... you in the State of Washington... where scenery, sunshine, salt air and grand food do things to you

WANT TO PLAY among cedars and Douglas firs a thousand years old? Want to ride an Indian dug-out canoe with a real Siwash at the stern pole? You'll do it within three hours of Puget Sound.

Want to know Mount Rainier of the sunshine and glaciers? With gay inns nestled on its slopes high above the clouds? Mount Baker of the sky blue lakes and wild snow lilies, horseback trails and good food!

And the miracle of Grand Coulee Dam... the sage desert that will be turned to garden... mysterious Dry Falls of the Columbia River... petrified forests.

Find out how little it will cost you to explore Washington State. Where to go, how to get there, what you do and see is all in a new book. Just send the coupon.



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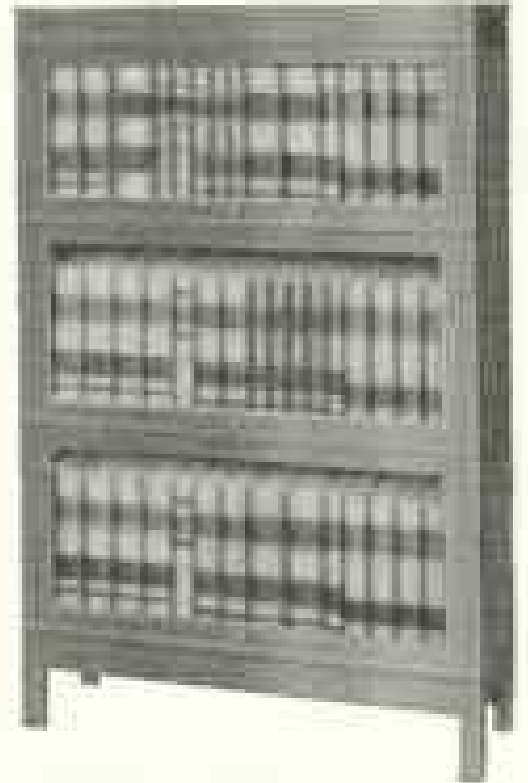
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The Next Great Plague To Go

TODAY syphilis is causing more misery of mind and body than any other preventable disease. Five hundred thousand new cases are reported under treatment by physicians each year. Hundreds of thousands of other cases never receive proper medical care.

Most new cases can be cured—completely cured—*provided* correct treatment is started immediately. Why then does syphilis wreck so many lives? One big reason is that in its early stages the disease creates little personal discomfort. In addition, charlatans and quacks often can deceive syphilitic patients. Early symptoms—usually a sore, a rash or a persistent feeling of not being well—disappear no matter how unscientific or inadequate the treatment.

Many a victim, therefore, believing he has been cured by a few quack treatments or that he has never been infected, lets time slip by during those early weeks when he has the best chance to begin a real cure. Meanwhile, the disease slowly entrenches itself in one or more vital organs.

Years later, long after the initial attack has been forgotten, syphilis strikes. It may mean death from heart disease in a man of forty, at a time when he is most needed by his family. It may mean insanity, also at a relatively young age. It may mean blindness. And often death is preceded by a long period of partial or total disability.

Syphilis numbers its innocent victims in the thousands. In its early stages, syphilis is highly infectious. It may be contracted unknowingly by a kiss or by direct contact with articles freshly contaminated. Fortunately, nobody needs to be in doubt as to whether he or she is infected by the syphilis germ. With the aid of blood tests and microscopic examinations, the skilled physician can determine whether or not

the disease is present. This service is also given by public health centers and clinics in an increasing number of communities. Their locations will be readily supplied by the health department or the county medical society.

* * * * *

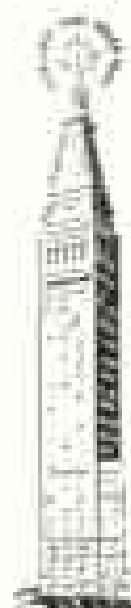
There is no quick or short-cut method of curing syphilis. The only way to kill all the germs is through a systematic course of regular weekly treatments for a period of many months. Begun in the early stages of the disease, the treatment covers a shorter period and insures the cure of about 85 per cent of all cases. Even sufferers in the advanced stages can be given some relief.

Syphilis is a leading cause of stillbirths. Most tragic of its victims are the 60,000 American babies born with preventable syphilis each year, many of them born blind. Early and competent prenatal care of syphilitic mothers will save most of their babies from being born with infection. It will also prevent many miscarriages and stillbirths.

A postcard will bring the Metropolitan booklet "The Great Imitator" which gives additional information about this disease. For free copy address Booklet Dept. 238-N.

* * * * *

The American Social Hygiene Association, through its National Anti-Syphilis Committee of over 200 prominent people, is sponsoring the second *National Social Hygiene Day, February 2nd, 1938*. On this day, citizen groups and physicians all over the country will meet with officials to plan the next steps to take in stamping out syphilis. This Association, 50 West 50th Street, New York, N. Y., will be glad to send literature and full particulars regarding the meetings.



METROPOLITAN LIFE INSURANCE COMPANY

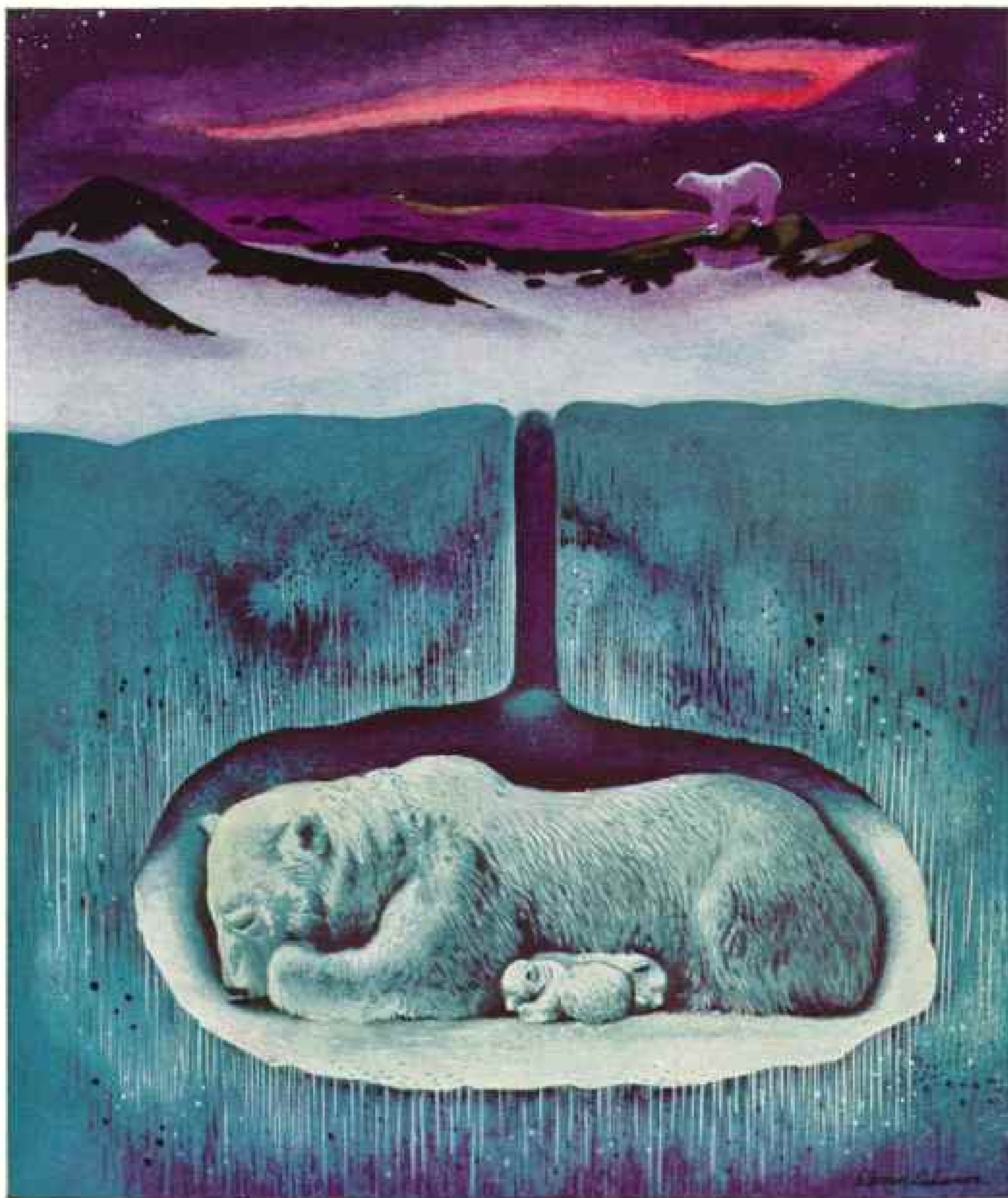
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The answer is both yes and no.

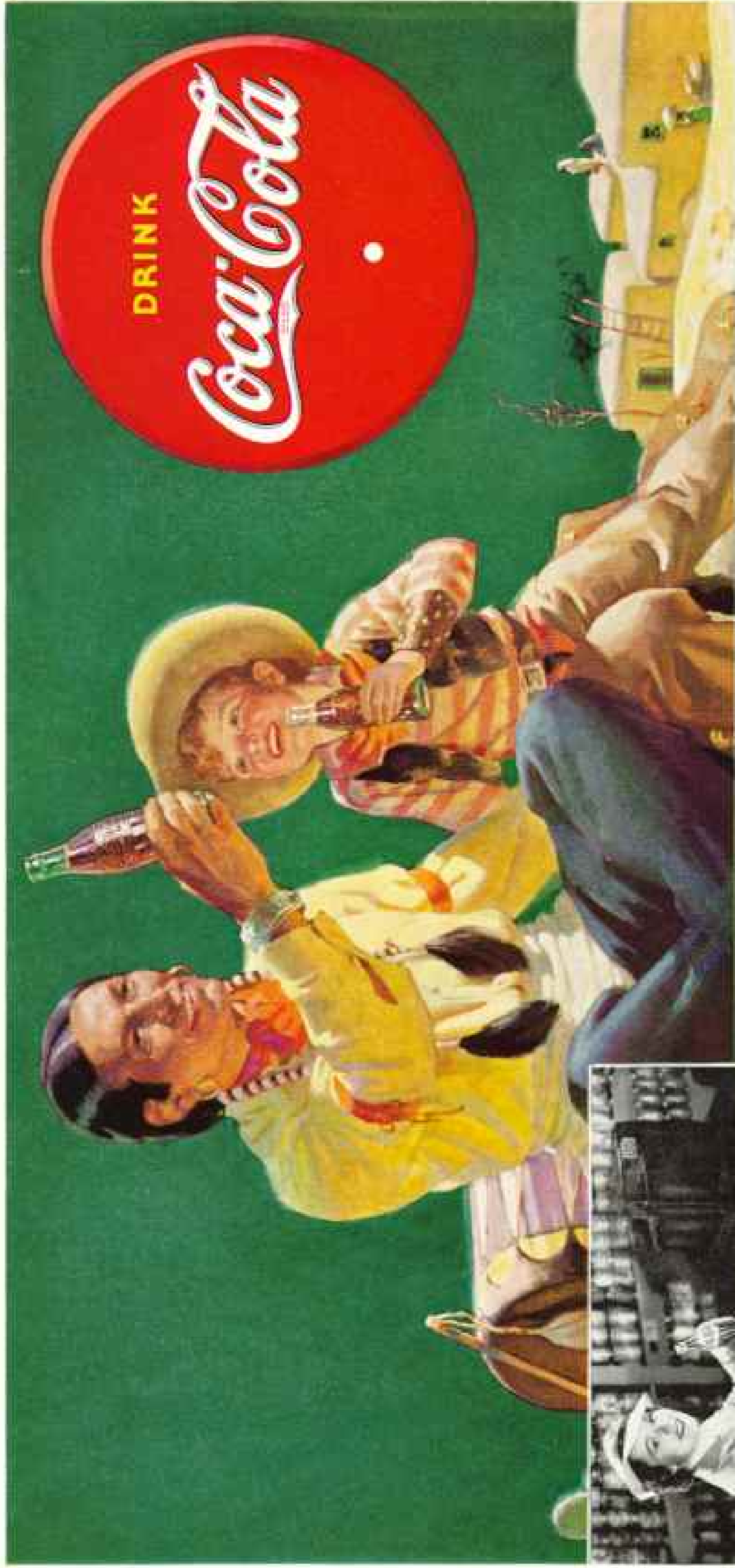
The male polar bear is active all winter. But the female polar bear builds up a reserve of fat and sleeps snugly beneath the snow throughout the lean months, emerging in the spring with her young.

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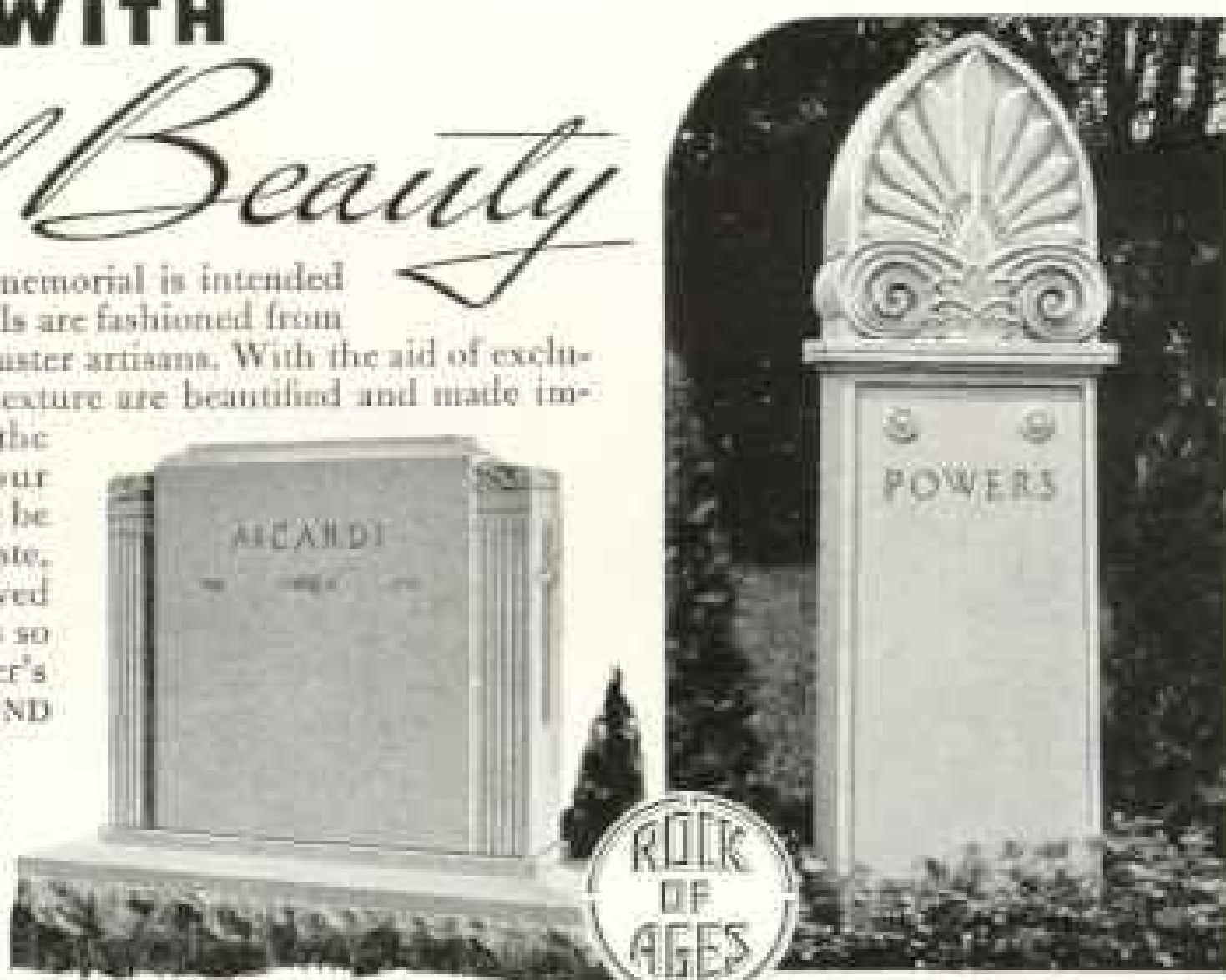
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1938

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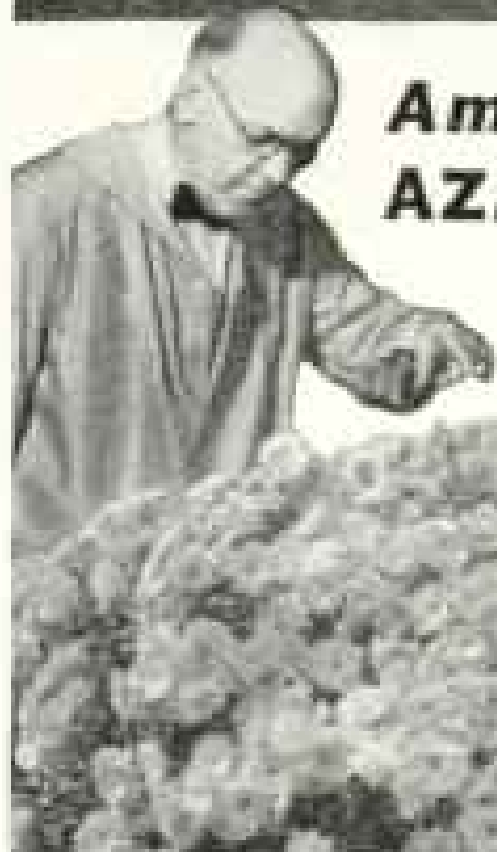
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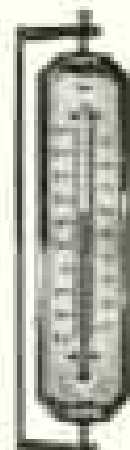
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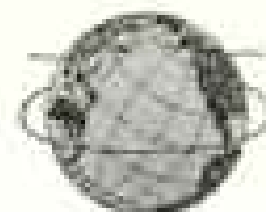
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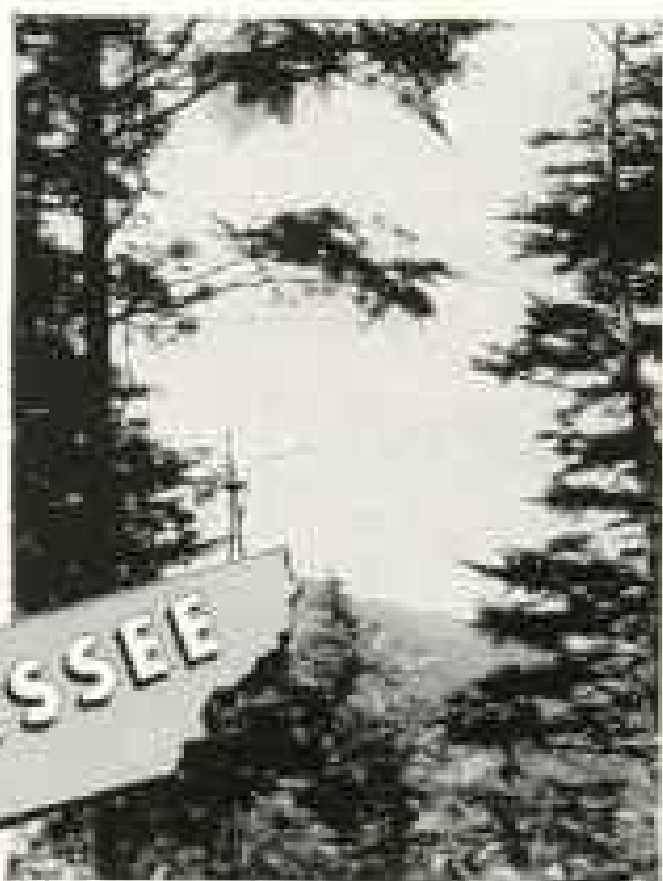
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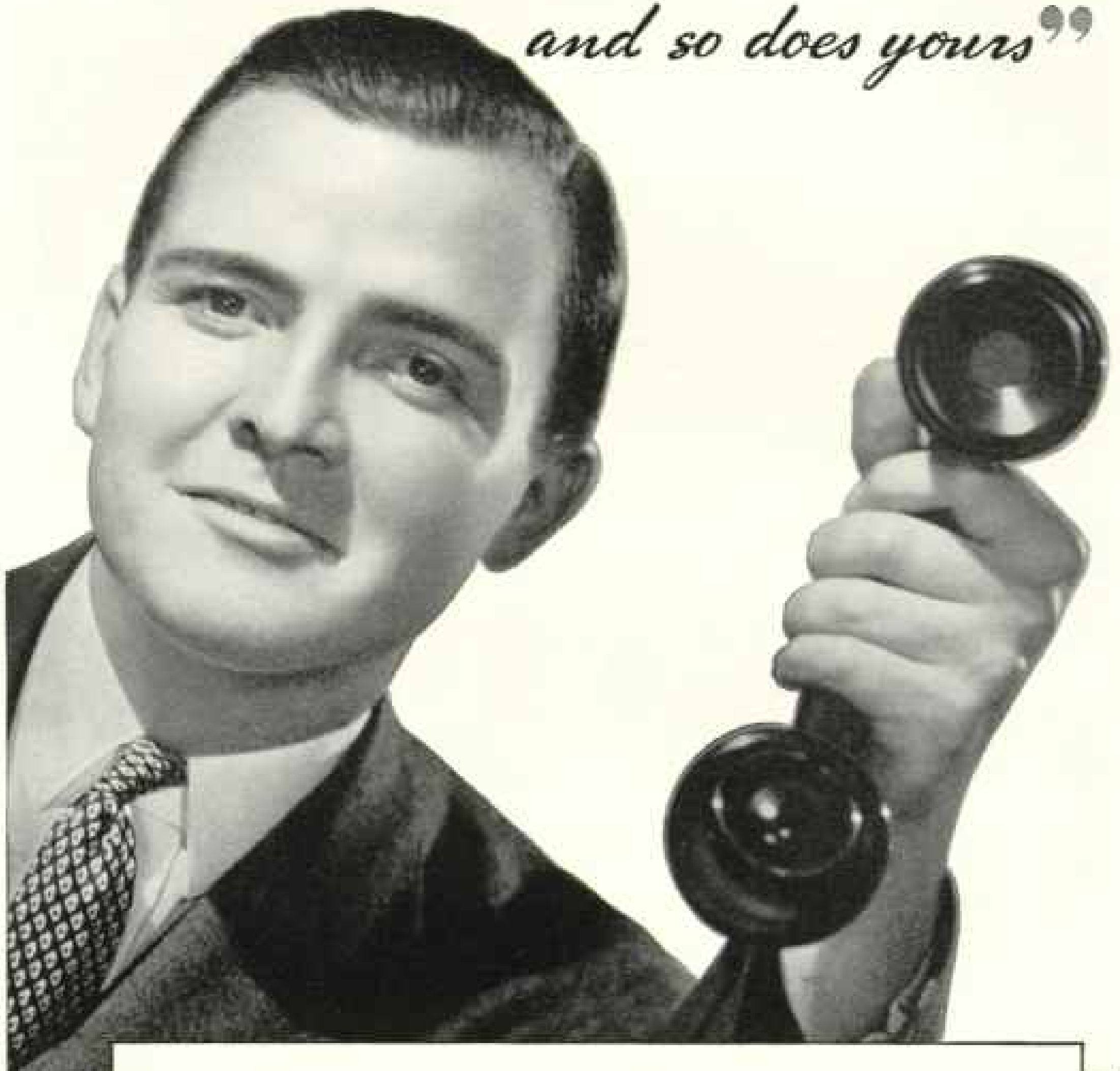
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