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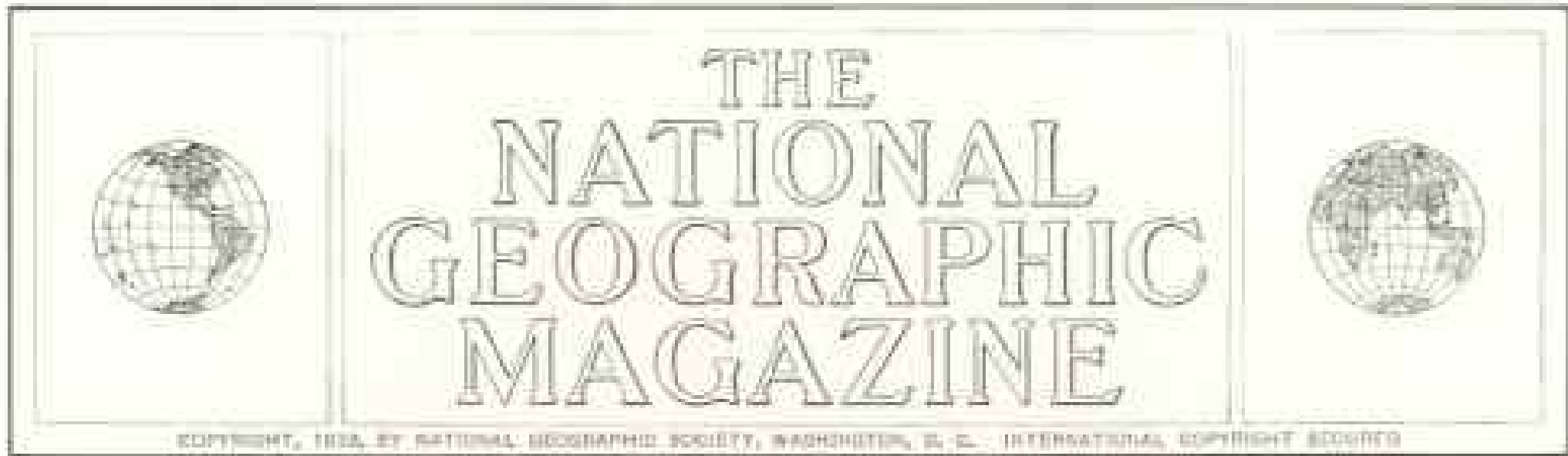
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## CHARLESTON: WHERE MELLOW PAST AND PRESENT MEET

BY DUBOSE HEYWARD

*With Illustrations from Photographs by B. Anthony Stewart*

**I**N 1670 a sturdy band of Englishmen under the command of William Sayle planted, on the west bank of the Ashley River at a distance of about two miles from the present city of Charleston, the first permanent colony in South Carolina.

A hundred years earlier, an expedition of French Huguenots had attempted a settlement near what is now the town of Beaufort, but their venture had come to an early and tragic end.

Still earlier, in the 1520's, only thirty-odd years after Columbus first set foot in the Western Hemisphere, Spain had made unsuccessful attempts to plant colonies in South Carolina, especially in the neighborhood of Georgetown; and again in 1540 Don Hernando de Soto, the great Conquistador, had pursued his dream of gold northward from Florida across what is now the Savannah River, and had planted the banner of Spain on Carolina soil. But his avarice would not let him rest and he pushed on to the westward until he met death in the American wilderness.

The dwellers on the coastal islands will tell you now that their wild and mettlesome little marsh ponies are descendants of his Spanish stallions. That tradition is all that is left in South Carolina of the fame and splendor of Spain.

THEN CAME THE ENGLISH—WITH PLOWS  
AND SICKLES

But where others had failed, the English succeeded, and perhaps the reason lies in

the fact that they came armed not with pikes and arquebuses, but with plows and sickles; not to loot, but to found an agricultural empire overseas; and the new land with its mild winters, its fertile soil and vast virgin forests, after subjecting them to a rigorous probation, opened to receive them and made them rich.

In their first cargo the English fetched with them from Barbados little tubs containing olive sets and cuttings of cane and many seeds and roots, and established what was probably one of the first agricultural experiment stations in the South. When Governor Sir John Yeamans arrived to assume authority under the Lords Proprietors, he imported a number of negro slaves from his Barbadian estates.

Doubtless the pick of his plantations, these blacks, seasoned to labor under tropical suns, were the vanguard of the vast importations which were destined to build up a civilization in the sweat of their brow, to color the lives and influence the destinies of their masters.

In 1680 the town was moved to its present strategic site upon a peninsula commanding the entrances to its two rivers (map, page 279). These streams, called the Ashley and the Cooper after one of the Lords Proprietors, Lord Ashley Cooper, were the arteries which, as the decades passed, pumped life in a steadily mounting tide into the city and gave it the sobriquet, "The Capital of the Plantations."

Today you can take a launch and in



CHIMES OF ST. PHILIP'S DID THEIR BIT DURING THE WAR BETWEEN THE STATES.

Cast into Confederate cannon, they have not been replaced by this old Protestant Episcopal congregation. The first church building, of wood, was erected in 1681. A new edifice, built about forty years later, burned in the great fire of 1835. The present structure, the third, has been in use for more than a century. St. Philip's is known as the "Westminster of the South" because so many distinguished men of Colonial and Revolutionary days are buried in its churchyard. Washington and Monroe attended its services (pages 275 and 299).

three hours you can reach the headwaters of either river, and you will have passed through a country that has seen one civilization rise and fall, and another utterly different rise to take its place.

#### THE ERA OF INDIGO

The great plantation tracts are still there. From bluffs overlooking the rivers old mansions peer from under deep porticoes like spectacled ancients, bewildered by change but tranquil and acquiescent.

These vast baronies have seen the rise and fall of indigo.

For more than a century they made Car-

olina rice a standard in the markets of the world. Then rice passed, a victim of competition from the West with its modern irrigation. There followed an economic twilight; but now a new day has dawned along the rivers. Scarcely any of the plantations remain in the hands of the original families.

The vast abandoned rice fields attract wild ducks by the thousands, and northern sportsmen have followed them south, to hunt, to enjoy the winters—balmy, yet bracing—and to establish a new gentry in the ancient bailiwicks.

Wealth again flows into "The Capital of the Plantations" from its two rivers, but its

source lies closer to Wall Street and the great economic structures of the North than it does to the land.

#### KING COTTON SUPPLANTS RICE

But if the rice country is out of production, such is not the case in Charleston's hinterland, where, in spite of the boll weevil, Cotton is still King. The gins start clattering in the outlying counties by mid-September, and all fall the staple moves down upon the city to be compressed for shipment and hurried over long cotton docks to the holds of waiting tramp steamers.

Here, too, garden truck is raised on a large scale, and one has only to cross the modern concrete bridge which spans the Ashley River to find himself almost immediately surrounded by far-flung fields whose rich black loam is green nearly every month of the year from its rotating crops.

Probably more than any other city on our continent, Charleston has experienced extremes of good and evil fortune. Founded shortly before the most distinguished period of English residential architecture, and with the tide of its prosperity rising as that period came to full flower, it still contains within the confines of its narrow peninsula more fine examples of Georgian architecture than any other similar area in the United States.

The explanation of this is simple. Carolina was conceived in the aristocratic tradition, and, within its provincial limitations, was brought to birth in the grand manner. Its Lords Proprietors were gallant Cavaliers who had remained loyal to the Crown while Cromwell was at his rabble-rousing, and in token of his appreciation Charles II had handed them an American subdivision lying between Virginia and Florida and extending westward to the South Seas (the term then applied to the Pacific Ocean).

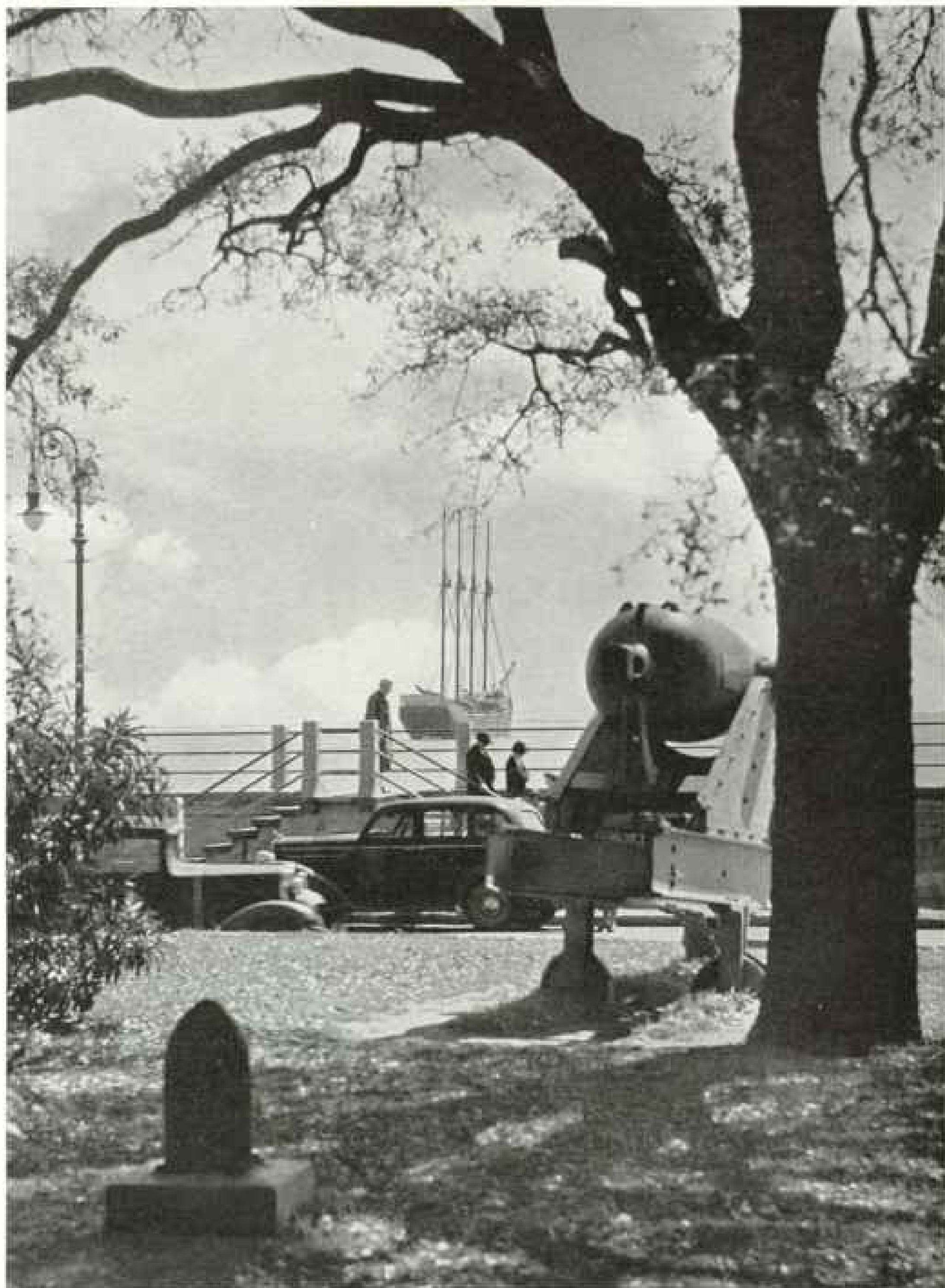
The distinguished philosopher, John Locke, was called to their assistance, and the result was the "Fundamental Constitutions," which, while liberal in many respects, provided for a "nobility" in order "to avoid erecting a numerous democracy."

This nobility consisted of baron, with an estate of 12,000 acres; cassique, with 24,000 acres; and landgrave, whose domain of 48,000 acres might have been the size of a small county of today. But in spite of this undemocratic setup, the constitution was so liberal regarding the personal liberty of the individual that the tides



MARINERS ONCE WATCHED FOR THE GLOW OF A LIGHT FROM ST. PHILIP'S SPIRE

A quarter of a century ago the beacon was discontinued when the main channel was changed. Grillwork on the portico of the Dock Street Theater (Plate V) frames the graceful steeple.



TOWARD FORT SUMTER POINTS A UNION GUN, SALVAGED FROM AN IRONCLAD

When nine Federal monitors attacked the fort in April, 1865, one of them, the U. S. S. *Keokuk*, was so badly riddled that she sank after the engagement. At night the Confederates removed the two 11-inch Dahlgren guns she carried and used them later in defense of the harbor. This one now stands as a memorial on the Battery (page 282). In the foreground is an old obstruction torpedo, forerunner of modern mines, which was anchored under water by the Confederates to block the channel to Union men-of-war.

of immigration set southward, and, while the city was still in the making, the English nucleus absorbed accretions of French Huguenots, Irish, Scotch, Germans, Dutch, Quakers, Swiss, and Jews.

There were even several shiploads of refugees from New England who had fled the rigors of climate and religion for the broader moral latitude favored by the Cavaliers, and the balmy Carolina winters. And so, even before 1700, the melting pot was seething, and from the four corners of the world began to come the ingredients that went into the making of what we are pleased to designate today as the one hundred percent American.

#### A SUCCESSION OF DISASTERS

In a steadily mounting wave, prosperity flowed in from the back country until, a century after its founding, Charleston was numbered among the four major ports of the Atlantic seaboard. But her entries were not all upon the credit side of the ledger. In the 268 years of her life, Charleston has possessed the stamina to take an appalling succession of disasters and survive, to wit: several major conflagrations, more than fifteen hurricanes, and two earthquakes. Two wars have trampled her: the British occupation during the Revolution, and the great siege of the Confederate War, which lasted for 567 days.

Toward the close of this war she escaped complete annihilation by a hairsbreadth. General Sherman, then on his historic March to the Sea, received from Major General H. W. Halleck, Chief of Staff, instructions that "Should you capture Charleston, I hope that by some accident the place may be destroyed, and if a little salt should be sown upon its site it might prevent the growth of future crops of nullification and secession."

Fortunately, however, after the burning of Columbia, Sherman changed his course to intercept one of the last armies of the South under General Joseph E. Johnston, and the old city was spared.

#### AN UNCHANGING CITY

So, much of history one must know if he would grasp the significance of what he sees today. Noble mansions here and there show scars of hurricane or bombardment. The great iron bolts passing through the houses from wall to wall, and revealed by large washers on the façades, tell of the

night in August, 1886, when the great earthquake left gaping fissures in pre-Revolutionary masonry.

Charleston to this day, with the colonial life a hundred and fifty years behind it, seems in many respects more British than American. There is a definite resistance to sudden change, and a stubborn clinging to modes of life and thought that have been tried and proved.

But it is British with certain differences; and it is these variations that give the city its unique character. The early builders took the foursquare Georgian dwelling house, elongated it so that the prevailing breezes could blow through all of the rooms, and set it with its narrow gable end to the street. Then along its entire side they hung galleries (they call them piazzas in Charleston) which shaded the walls during the long summers and looked down into walled gardens.

This type of dwelling, unique to Charleston, is a perfect adaptation to the subtropical climate.

The exigencies of the climate undoubtedly shaped customs, as it had houses, and these customs, like the solid buildings, resist change. True, there is a season now when the azaleas, wisteria, and camellias convert the city into a fairyland of color and perfume, and when, during several weeks in the spring, visitors to the estimated number of two thousand a day pour through the streets. But when they are gone the city heaves a sigh of relief, forgets its hospitable efforts to be other than itself, and settles down into its accustomed routine.

Now the visitor may breakfast when he will, but he will not be fed again until 2:30, or even 3 o'clock; then it will not be luncheon, but dinner, and "Southern" in all the culinary implications of the word.

Before sitting to table he will have been constrained to join his host in a toddy; and when he arises replete from the board, it is not difficult to show him the logic of the siesta, which, especially during hot weather, is the custom of the country.

In the cool of the afternoon the city rubs its eyes, takes its cold plunge, and enters into the social life of the day. The evening meal, called "tea," is usually a casual buffet affair.

To the unthinking this arrangement may seem an evidence of Southern indolence. It is, as a matter of fact, a perfect climatic adaptation. Your Charleston business man



HORRY HOUSE PORTICO FRAMES AN OLD HOME, WITH VERANDA, GATE, AND GARDEN

Early Charleston homes, long and narrow, stand with the gable end toward the street so that breezes sweep through all the rooms in the hot summer months (page 277). Piazzas, one above the other, extend along the side, the full length of the building. They shade the house and also overlook pleasant walled gardens. The street door opens onto the veranda. The spire of St. Michael's Protestant Episcopal Church rises in the background (page 280).

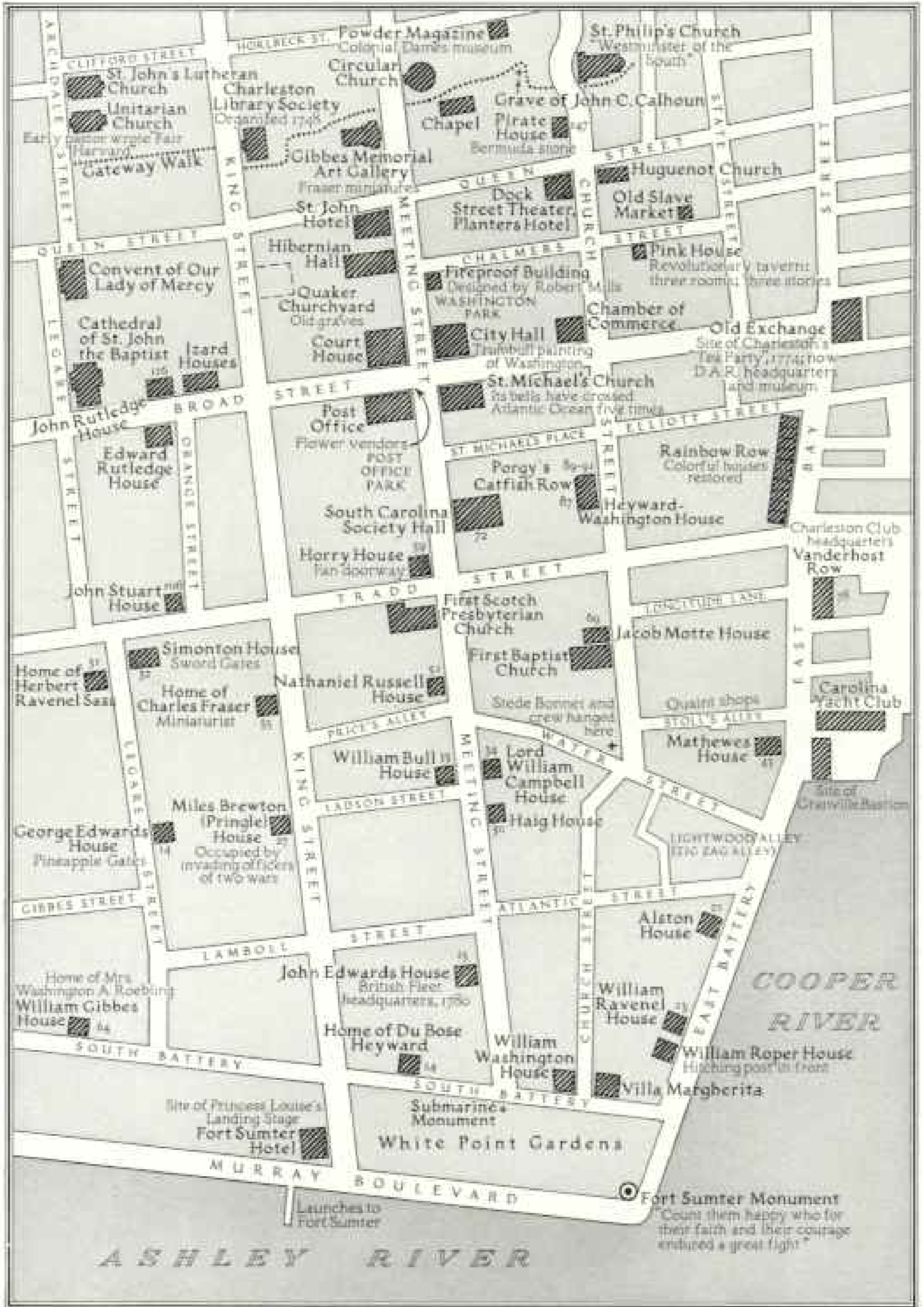
will have put in five or six hours of uninterrupted labor during the cool of the morning.

But how, one might wonder, with other old cities changing with the times, did Charleston preserve its unique character? There are several explanations.

The period following the War between the States, with its jig-saw woodwork, grotesque residential spires and cupolas, found Charleston prostrate, economically. Poverty may well have been the ally of good taste which kept the people for the most part living in the houses which had sheltered them for over a century, and limited the erection of the newer type of dwelling largely to the upper and western sections.

But, that good taste and sound esthetic appreciation were present is evidenced by the fact that in 1930 they passed a zoning law which will preserve the architectural landmarks of the city intact for future generations. Encouraged by this legislation, the lower half of the peninsula, extending from Broad Street to the beautiful White Point Gardens (usually referred to as the Battery), is reassuming the character of an early American town, with every householder intent upon achieving as scrupulously exact a restoration as possible.

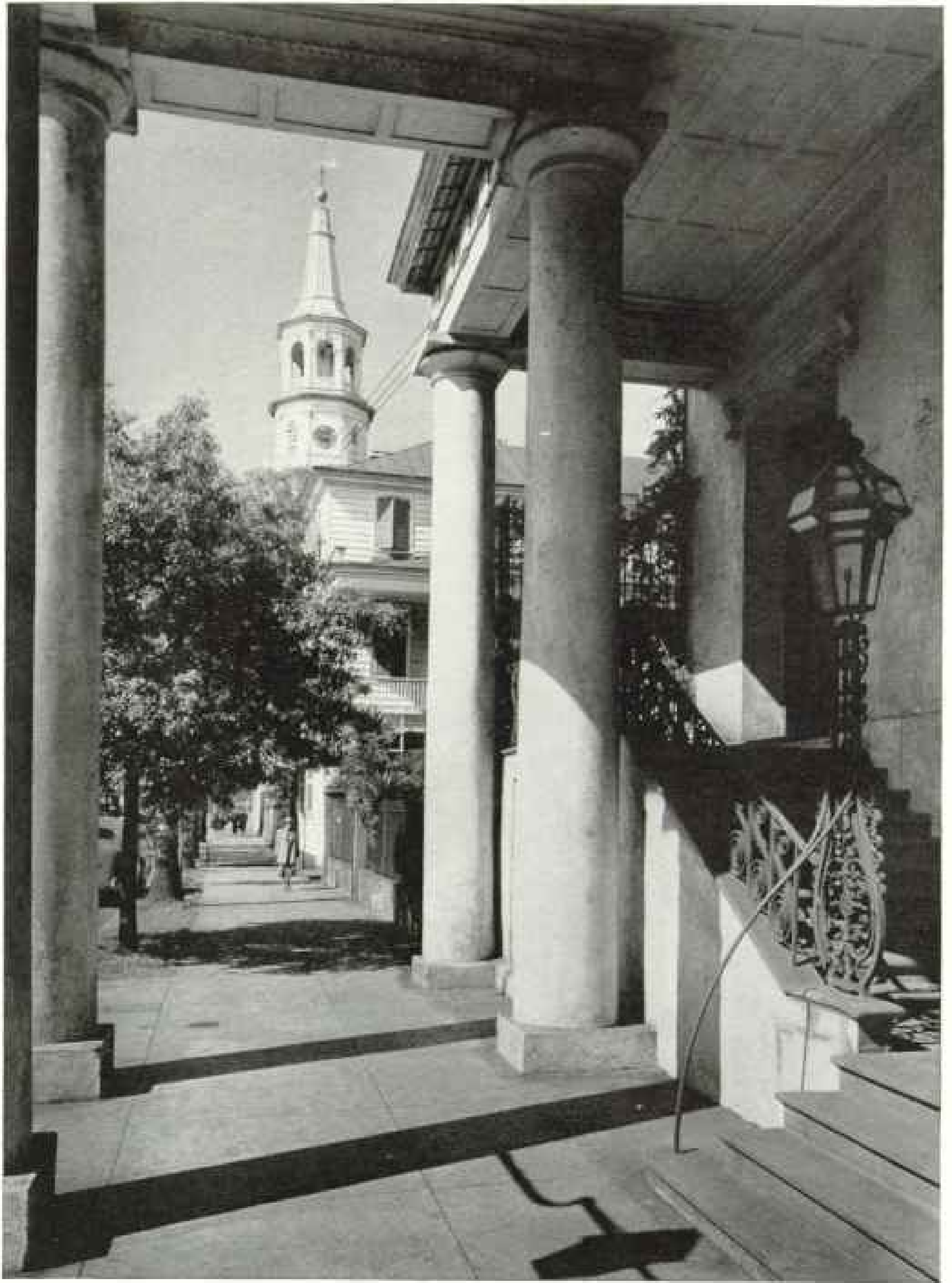
As Charleston has brought down through the generations tangible survivals of an



Drawn by Norman Bamford and Ralph E. McAleer

A WALK AROUND CHARLESTON DISCLOSES ITS COLONIAL HERITAGE (PAGE 297)





FIVE TIMES THE BELLS IN ST. MICHAEL'S SPIRE HAVE CROSSED THE ATLANTIC

They first came from England in 1764 to the Protestant Episcopal Church seen through the portico of the South Carolina Society Hall. After the British entered the town sixteen years later, the bells were carried back to England. Repurchased for Charleston after the Revolution, they came back to their steeple. During the War between the States they went to Columbia, S. C., for safekeeping. When that town burned, after occupation by Union troops, the chimes were badly damaged. They were shipped to England again, recast in their original molds, and returned once more to the steeple, from which they still peal regularly (page 300).



A YOUTHFUL MAESTRO DIRECTS HIS BAND WITH TWINKLING FEET.

Battered instruments of the Jenkins Negro Orphanage Brass Band create a rhythmic dirge, especially in azalea time (page 287). After school hours the boys give street-corner concerts in various parts of the city. Coins tossed by passers-by help to support the orphanage.

early civilization, so also has she preserved through the assaults of a mechanized civilization a mode and a manner of life which are an antidote for the jangled nerves of today. She has drawn her sustenance from the plantations on the one hand and the sea on the other, and her life has been lived in harmony with the great deliberate forces of Nature. She has listened to the march of modernity, but she has not yet been stampeded into the procession.

Today, within five minutes of her borders by motor, or immediately, from one of her wharves or boat clubs, one can re-establish the life-giving contact with woods or sea.

Perhaps it is due to this realization, that life at its fullest comes through these contacts rather than through the amassing of wealth, that Charleston incomes are small. There are no large fortunes. Salaries even in times of relative prosperity remain at what would be described in the North as a depression level.

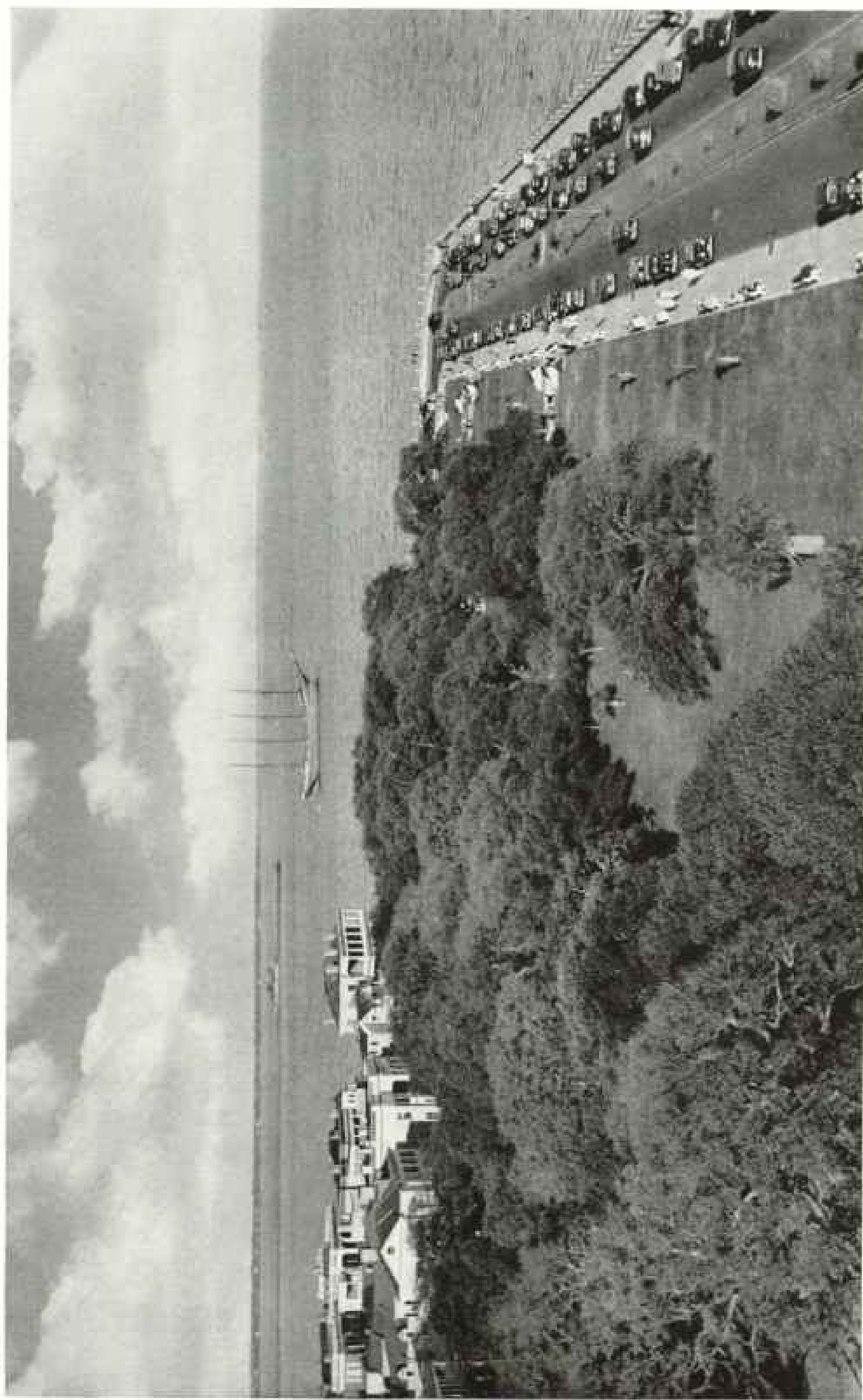
But strangely enough, your Charlestonian is not particularly concerned. He is a pro-

vincial, and he is proud of it. He knows that upon a salary which in New York would give him three rooms and bath, and a subway strap to and from the office, he can in his own province keep a small car, enjoy golf on one of two good courses, or sail, if he has a mind to, in his own yacht. Of an evening he may see a current play interpreted by his Little Theater company, view an exhibition at the Gibbes Art Gallery, or listen to a concert by the local symphony orchestra.

In summer a 20-minute drive in either direction will bring him to one of the palm-crowned barrier islands with its mile on mile of incomparable beach, and its unflagging sea breeze.

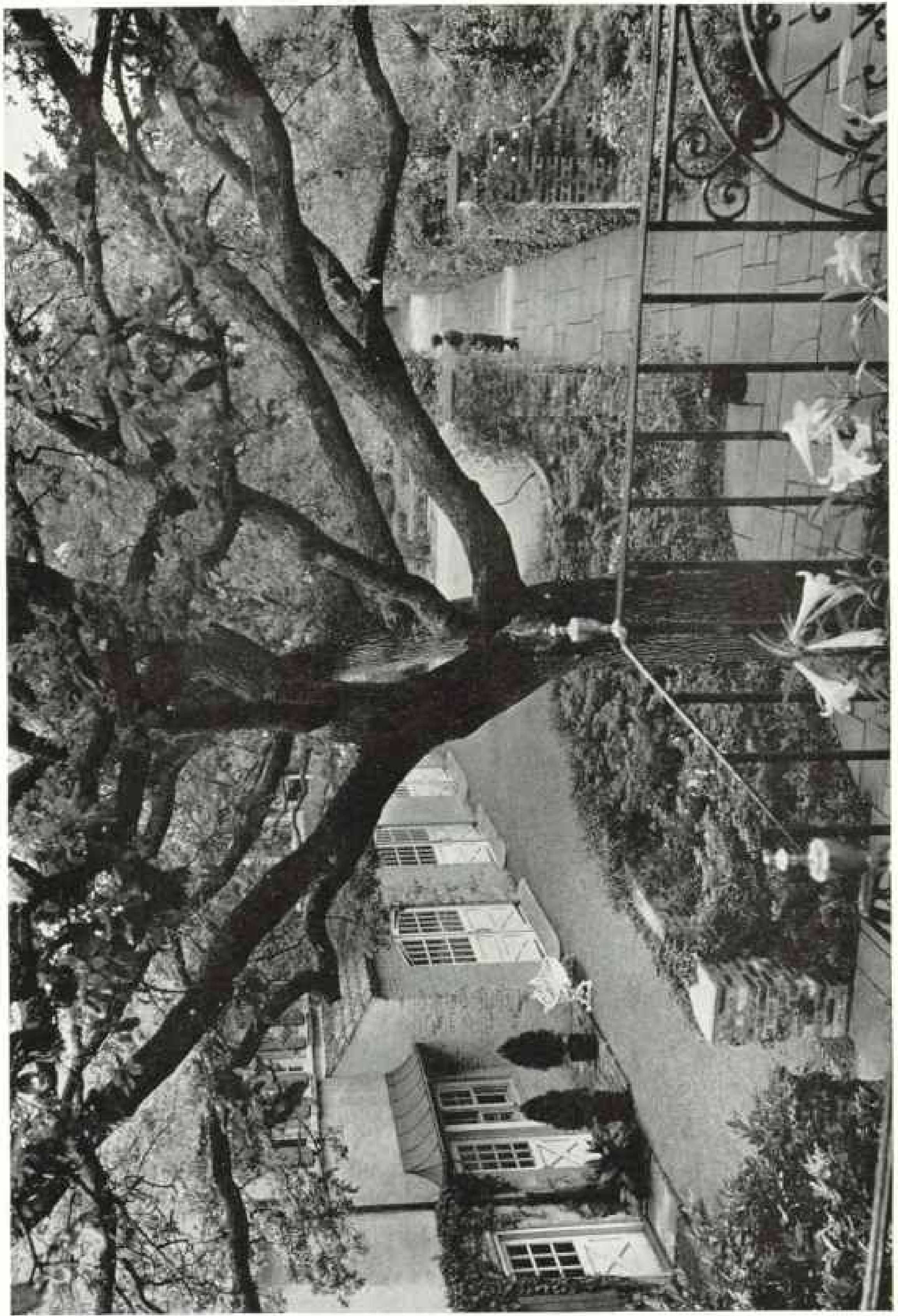
In winter the white community, which during the long summer has golfed, boated, and commuted to and from its islands together, tends to retire behind the barriers of its separate associations for its more formal entertainment.

There are the St. Andrews Society, now more than two centuries old, the Hibernian Society, and the German Friendly Society,

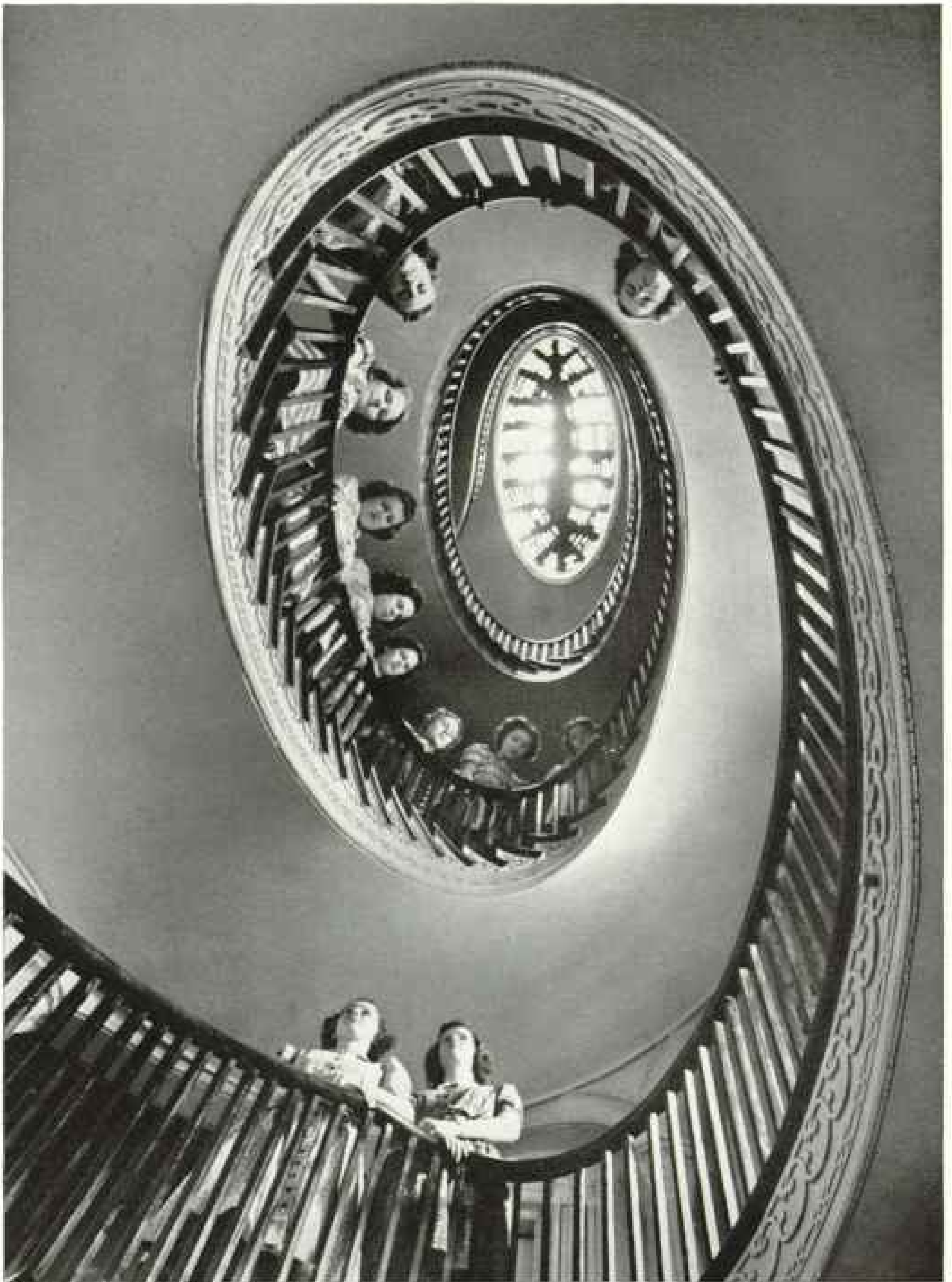


CHARLESTON'S FAMOUS BATTERY, ON A PENINSULA TIP, POINTS TOWARD THE SEA AT THE JUNCTION OF TWO RIVERS.

Officially known as White Point Gardens, park and promenade overlook the harbor, at the confluence of the Ashley (right) and Cooper Rivers. Both streams are named for one of the Lords Proprietors, Lord Ashley Cooper. To the left of the schooner lies Castle Pinckney, a national monument on Shute's Folly Island. Although in the past guns were mounted on the Battery, principal defenses have been fortified islands and mainland points bordering the channel to the sea.



LANDSCAPE ARTISTS REDESIGNED THESE OLD GARDENS, LAID OUT BY WILLIAM GIBBER BEFORE THE REVOLUTION



SUNLIGHT AND DARK-EYED GLANCES SHINE DOWN THE SPIRAL STAIRCASE OF ASHLEY HALL

From curved entrance hall to roof rise the elliptical stairs for which the old mansion is famous (Plates I and III). Wide doors leading into the drawing room and an opposite room on the first floor are curved to fit the wall. Two brothers who came to Charleston from Scotland erected the building, but, legend tells, they never dwelt in it. Eminent Southern families occupied the structure during the years before it became a girls' school.



REBECCA MOTTE LOCKED HER THREE PRETTY DAUGHTERS IN THE ATTIC WHEN  
BRITISH OFFICERS OCCUPIED THE BREWTON HOUSE IN THE REVOLUTION

Miles Brewton built the mansion in Charleston about 1765. Mrs. Motte, a sister, inherited the property when he perished at sea with his family. Despite the perfect behavior of her unwanted guests, the owner insisted on moving the family to her plantation home. Later the British also seized that property, so Mrs. Motte permitted American soldiers to shoot flaming arrows to the roof. The British surrendered, but the house was saved (pages 299 and 303).



CITY FATHERS CONVENE UNDER THE EYES OF TRUMBULL'S "WASHINGTON"

Charleston's most-prized work of art (beyond presiding officer's desk) was painted by order of the City Council, in honor of the first President's visit in 1791. Portraits and busts of other eminent Americans are in the Council Chamber collection. When a tornado swept Charleston in September, 1938, the City Hall was badly damaged and the art works were temporarily removed to the Gibbs Art Gallery (Plate IV) while repairs were made.



ANTIQUES REPLACE EXPLOSIVES IN THE STOUT OLD POWDER MAGAZINE

Built in 1703, the brick arsenal was abandoned during the Revolution after shells from a British ship fell near it. Now the structure houses a museum owned by the South Carolina Society of the Colonial Dames of America.

both of which have over a century of life behind them, and the St. Cecilia Society. This last, through the changes of 177 years of its existence, has preserved the aristocratic tradition which the Lords Proprietors had planted in the New World through their provincial nobility for the discouragement of a "numerous democracy."

It has resolutely clung to its customs in the face of social change, and it prides itself upon adherence to a code of manners and morals of an earlier day. Its two balls which are given each season are the social events of the year, and are examples of social decorum and formal elegance. Chaperones are present, not as exhibition pieces, as one might guess in this modern age, but as gracious mentors and hostesses to their charges; and it is not uncommon to see upon the dance floor at the same time representatives of three generations of the same family.

The ancient custom prohibiting the attendance of any actress or divorced person

still obtains, and the admission of a new family to the society is so rare that membership may well be considered hereditary.

#### A CITY OF GARDENS

Usually by the first of March the short winter is over, and spring pre-empts the city. This is a dramatic invasion. Starting with the waxy perfection of the camellia bloom, and a spray or two of yellow jessamine while the nights are still frosty, it seems to hang poised, then descends, sweeping the parks and gardens with a tidal wave of color and perfume. Climbing roses foam over old garden walls. Wisteria hangs like purple clouds in ancient pine and oak; and everywhere the azalea seems determined to spend itself utterly in a short, breath-taking burst of color.

Later will come the red of the pomegranate, the gay profusion of the oleander, and the great waxy magnolia with its almost narcotic perfume.

But in Charleston the azalea is the ac-



EARLY CITY PLANNERS CURVED THIS AVENUE TO SPARE GIANT ASHLEY OAK

There is a tradition that, more than a century ago, men were hanged from its limbs for plotting a slave uprising. George, a negro blacksmith, and a companion exposed the conspiracy and received their freedom and a life pension. Though historians now question whether this tree figured in the incident, the legend and the tree's beauty have prevented efforts to cut it down as a traffic hazard.

knowledgeed queen of the spring. During the month of its flowering, which usually lasts from the middle of March to the middle of April, the town is in holiday mood. Music of an outlandish but gaily negroid character will assault the ear of the visitor, and upon turning a corner he will find himself face to face with a brass band from the Jenkins Negro Orphanage.

Almost hidden by enormous battered horns, a dozen negro boys will be performing to the antics of a maestro, scarcely yet in his teens, and all will be enjoying it hugely. Other black urchins will solicit a nickel to dance and sing (pages 281 and 298). Then perhaps the guest within Charleston's gates will remember that his first waking impression was the chanting of the hucksters as they strode through the early-morning streets, balancing large baskets, West Indian fashion, on their heads.

He will recall also the beauty of spirituals heard from the open windows of a negro

church during a nocturnal ramble, and the music, color, and humor of "Heaven Bound," the negro pageant recently presented in a big church. And he will realize that the city owes much of its atmosphere and light-hearted charm to the black half of its population, these people who had brought with them to America, besides the gift of labor, the gifts of laughter and song.

During the garden season, Charleston is "at home" to the Nation, and last year more than 270,000 of her neighbors from every State in the Union availed themselves of the invitation to share her beauty.

Within a short motor drive of the city, upon the banks of the Ashley, lie the most renowned of the plantation gardens.\* Sherman's army passed this way in 1865 and burned all of the great houses save one.

\* See "Ashley River and Its Gardens," by E. T. H. Shaffer, NATIONAL GEOGRAPHIC MAGAZINE, May, 1926.



but the gardens, which had been in the making while generations came and went, held their indestructible beauty locked in the soil, to flower again in the spring.

Magnolia, which John Galsworthy called "the world's most beautiful garden," is over a century old, and, in addition to its flowering shrubs, contains many unique botanical exhibits. One of the largest redwoods east of the Rockies is there, a Chinese yew, the sweet olive, the incense cedar, and many others (Plates XIII and XV).

Middleton Gardens, situated three miles beyond Magnolia on a historic plantation estate of which some 7,000 acres still remain in the family, is the oldest landscape garden in America. In a way it stands as a monument to the slave régime in the South, for into its creation, which dates from 1740, went the labor of a hundred slaves for a period of ten years. Its hedges and walks, terraces, and ornamental waters bear eloquent witness to the long, patient labor of the slave as well as to the taste and vision of the master (Plate II).

Differing greatly in character, Magnolia and Middleton supplement each other admirably. Painted from the same magnificent palette, the burning glory of the azalea is flung into contrast with the somber beauty of giant, moss-draped live oak and dark, cypress-haunted water in a range of values that amazes while it delights. But in Middleton the dominant note is formal. In Magnolia it is the unexpected.

Continuing along the Ashley River, a 20-minute drive will bring the visitor to Summerville, "The Flower Town in the Pines," and for blocks his way will lead him beneath festoons of wisteria that sway from tree to tree, and between widely spaced cottages bowered in color and drowned in perfume. A visit to Cypress Gardens, of Dean Hall Plantation, on the Cooper River, will complete this circuit.

#### SEEING A GARDEN BY BOAT

Perhaps the most unusual of all of Charleston's gardens is Cypress. Upon arriving, one is conducted to a landing and seated in the bow of a small bateau. A negro paddler takes his place in the stern, and his passenger is off on a voyage of discovery. For Cypress is a water garden, planted in the "reserve" of an ancient rice plantation. With only the dip of the paddle and an occasional birdcall for an accompaniment, the voyager has ample time to

note the extraordinary, almost weird beauty of the scene (Plate XIII).

Beneath him lies the water, brilliantly clear and colored like old sherry, and over his head towering cypress trees brush the spring sky with their first faintly yellow leaves. Along the banks are low, brilliant lines of flowering bulbs, and on small islands azaleas and other shrubs form avenues and masses of glowing color. These cast reflections which shatter soundlessly beneath the advancing bows.

There have been seasons when the full moon came at the zenith of the flowers' beauty, and Cypress has been opened to the visitor at night. The effect at these times is almost supernatural. Great cypresses rise out of the water, casting shadows that seem as substantial as the trees themselves, so that the boat in which you sit seems to hover in a space of moonlight and shadow, with treetops and stars far above and far below you.

Only half an hour of easy motoring lies between Cypress Gardens and the city, and the whole circuit can be accomplished in the course of a morning. Recently three other plantation gardens have been opened to the public: Brookgreen and Belle Isle in the old Santee region, and Runnymede on the Ashley, and each of these as it matured through successive generations has developed its unique differences within the general pattern and tradition.

#### THE AZALEA FESTIVAL

As a culmination to the season of flowers, Charleston celebrates usually about mid-April its annual Azalea Festival. During these six gala days of pageantry, beauty, sport, and entertainment, the city is more especially at home to its State, and from various sections of South Carolina come representative beauty queens to participate in the festivities. Opening with the parade of gorgeous floats and visiting queens, the program embraces a water carnival and boat races in full view of the Battery, a pageant re-enacting the trial and conviction of Stede Bonnet and his pirates (presumably as the event occurred on the same spot over two centuries ago), street criers' contests, balls, and the final coronation of the State Queen (Plates IV, VIII, and XIV).

Streets are roped off at night for dancing and gay carnivals, and there are concerts and excursions. And when the last azalea wilts on its stem, it must be admitted that

CHARLESTON: A COLONIAL RhapsODY

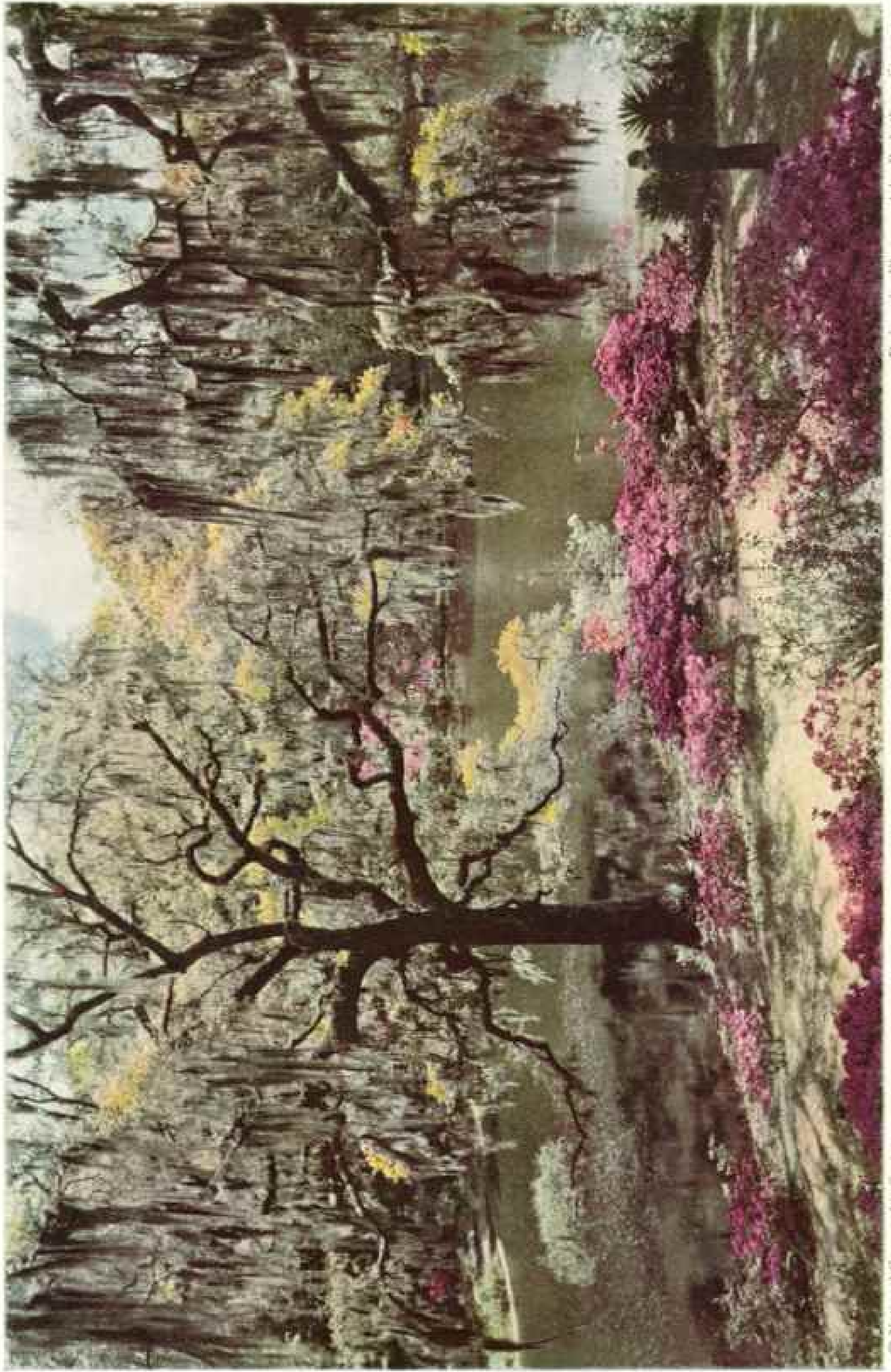


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Dufaycolor Photograph by B. Anthony Stewart.

STATELY ASHLEY HALL BECOMES A BACKDROP FOR SHAKESPEARE

Students at Charleston's fashionable girls' school recite the lines of *Much Ado About Nothing* in front of the main building, erected as the mansion of a private estate at the turn of the nineteenth century (Plate III). Each year the school presents one of the Bard of Avon's plays at commencement. The actual stage is to the right of the picture, where a tree-covered grotto provides the background and natural exits and entrances.



© National Geographic Society

Early Spring Azaleas and Festoons of Spanish Moss Transform Middleton Gardens into a Fairyland

English landscape artists in colonial days created this showplace near Charleston for Arthur Middleton, a signer of the Declaration of Independence.



© National Geographic Society

Defayolar Photograph by B. Anthony Stewart

STUDENT SMILES FROM FIVE STATES FLASH THROUGH OLD SCROLLWORK GATES AT ASHLEY HALL,

New Jersey, Pennsylvania, Kentucky, Georgia, and Tennessee are represented in the group. Such fine hand-wrought iron gates are found at the entrances to many old Charleston homes and estates. Here scrolls contrast pleasingly with the latticework beneath.



MODERN IVANHOES JOUST UNDER THE GAZE OF THEIR LADIES FAIR

Revival of the famous ante-bellum plantation sport of spearing a ring takes place annually in Charleston during the azalea festival. The lancing tourney is conducted under rules of the days of knight hood.



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Trufaycolor Photographs by H. Anthony Stewart

PIONEERS PEER FROM THE WALLS OF THE GIBBES ART GALLERY

Among the identified likenesses in the valuable Carolina Art Association collection of old miniatures is that of William Rhett, extreme left. Vice Admiral of the Colonial Navy and scourge of pirates, his most spectacular exploit was the capture of Stede Bonnet (Plate VIII).

## CHARLESTON: A COLONIAL RHAPSODY



DOCK STREET THEATER WAS OLD WHEN "PRIDE AND PREJUDICE" WAS WRITTEN. An amateur cast of the Footlight Players performs Jane Austen's classic in Charleston's old Play House, first opened in 1736. The theater was reconstructed and dedicated in November, 1937.



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Dufaycolor Photographs by E. Anthony Stewart

### YOUNG CHARLESTONIANS PREFER JOGGING BOARDS

Gleefully they have bounced on such long, springy planks of yellow pine since the venerable city was founded. Once a joggling board stood on every plantation in coastal Carolina and on the piazza of nearly every town house. The supporting standards are anchored on flat rockers.

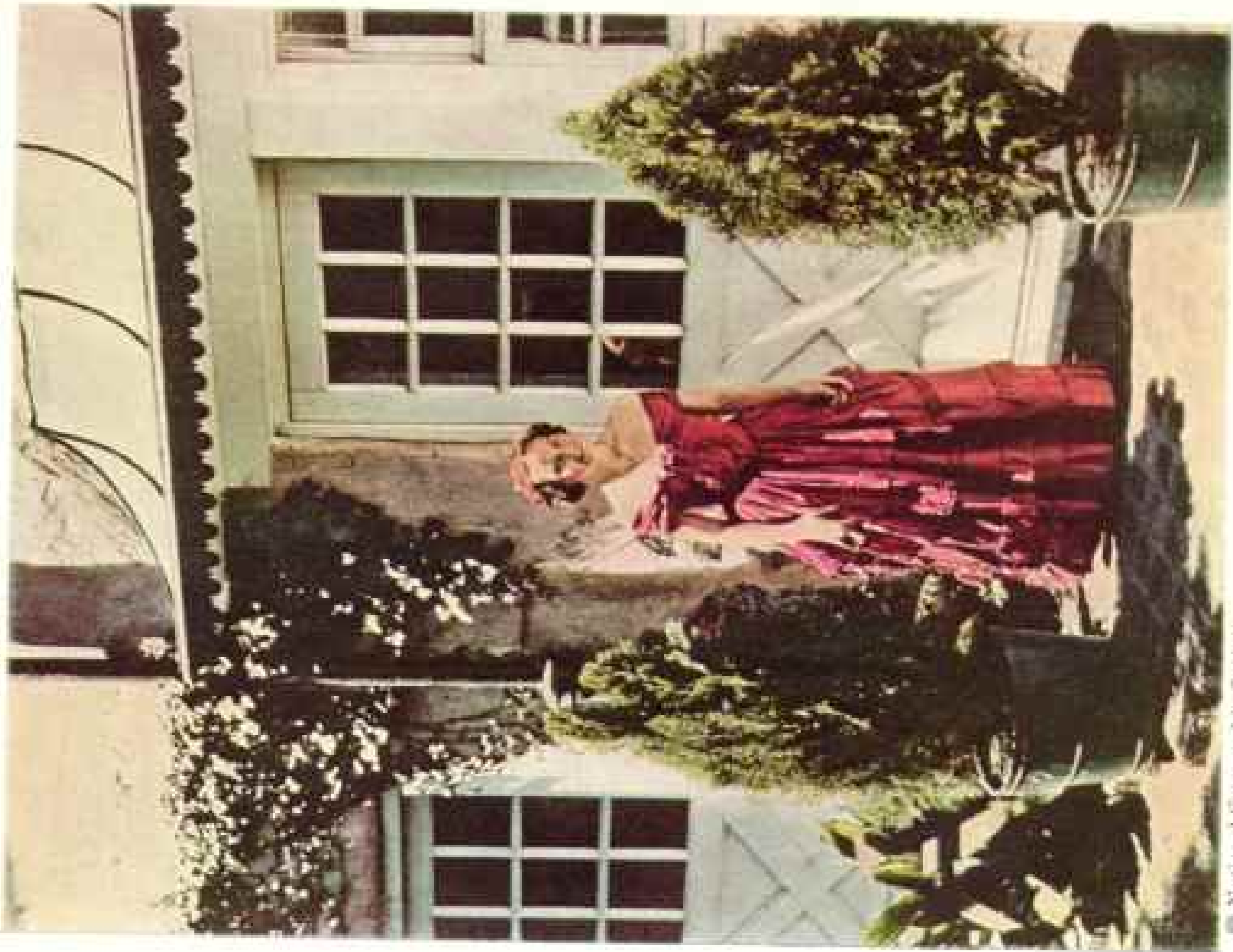


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SOUTHERN BELLES TAKE COMMAND FOR A DAY AT THE CITADEL, HISTORIC MILITARY COLLEGE OF SOUTH CAROLINA

On Sponsor's Day each cadet group is headed by a feminine favorite. Here the sponsors have been greeted by their escorts and are about to stroll to the parade ground, where they will review the corps. Officers trained at The Citadel served in the Civil, Spanish-American, and World Wars.

Dufaycolor Photograph by H. Anthony Stewart



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**HER ANCESTRAL HOOP SKIRT IS IN STYLE AGAIN**

Posing in the old-fashioned garden of historic William Gibbes House, in Charleston, this southern miss finds her heirloom the last word in evening attire. The estate now is the home of Mrs. Washington A. Roebbing.



Dufayellar Photographs by B. Anthony Stewart

**ANTIQUES LINE THE WALLS OF THE PORGY SHOP**

Once the home of DuBoise Heyward, this Church Street saleroom is named after that author's most famous character. Porgy was the crippled negro beggar whose tragic life provided the theme for the book and play.





Kodachrome Photograph by B. Anthony Stewart

LAUGHTER DROWNS CREAKS OF THE TUMBRIL AT THE "HANGING OF STEEDE BONNET"

Young people, during Charleston's annual *avalea* festival, commemorate the execution of the pirate. An expedition from "Charles Town" captured the bold buccaneer and his cutthroat crew in 1718, during a campaign that put an end to piracy off the Carolina coast (Plate IV).



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Dufaycolor Photograph by B. Anthony Stewart

"PIRATES" AND "COLONISTS" FRATERNIZE AT REHEARSAL ON THE WATER FRONT

Early 18th-century costumes, donned for the annual pageant, revive memories of the stirring days of the buccaneers. Docks in the background are crowded with small craft in the mornings, when shrimp fishermen tie up with their daily catch.

the population feels and looks a little like its bedraggled floral confederate; but Charleston thinks that it is well worth it, for it prides itself upon the fact that in this fevered age it is one city that has not altogether forgotten how to play.

#### A MORNING CONSTITUTIONAL

It is not a long walk from New York's Central Park southward to Times Square, a mile let us say, and a modest constitutional for a brisk morning (map, page 279). Now, transfer our mile-long walk to Charleston, and let us see what of drama and history is packed into its brief span.

We will start from the point of the Battery where Charleston's two rivers meet and flow eastward, as a native son will tell you, to form the Atlantic Ocean. Out of the east, as likely as not, will come a soft drumming, and a fleet of seaplanes will appear over the low, dark line of Fort Sumter and drive a wedge northward to where the Navy Yard is waiting to receive them a few miles above the city.

Again that dramatic juxtaposition between today and yesterday, between news and history. For Fort Sumter and the commodious landlocked harbor which lies before us have been the stage upon which momentous drama has been enacted. From these surrounding islands, on the morning of April 12, 1861, Confederate cannon opened fire on Major Anderson, who with his Union artillerymen was holding the fortress under orders from President Lincoln. On the 13th, with his flag shot away and the fort on fire about him, Anderson surrendered, and the Nation had entered upon its four years of devastating civil war.

And here in 1863, with the Confederate forces in possession of the fortress, came the first large fleet of ironclads, to try their strength against man's immemorial stronghold of brick and stone and to sustain one of the worst naval defeats in the history of the Nation—but to demonstrate anew the superiority of iron ships and thus to revolutionize the navies of the world.

Here again, during the Confederate War, while the blockading fleet drew its iron circle tighter and tighter about the harbor mouth, came the first submarine to sink an enemy ship in time of war, February 17, 1864.

On the Battery stands a granite shaft which commemorates the event and lists the names of the known dead (page 300).

That is all—yet this is the untold story: The "Fish Boat" of the Confederate Navy, designed by Horace L. Hunley, was 20 feet long, 3½ feet wide, and 5 feet deep. Her motive power consisted of eight men who sat in a row with their knees drawn up to their chins and turned a crankshaft by hand.

When this metal shell was closed for diving, it contained sufficient air to support life for only half an hour. Since the torpedo was attached to the boat itself, there was little hope of escape. The crew, sealed in their metal coffin, hoped only to reach and destroy a Federal battleship before they were suffocated or drowned. Five successive volunteer crews died without accomplishing the destruction of an enemy ship. After each attempt the craft was salvaged and new volunteers stepped forward.

The sixth crew succeeded in exploding the torpedo against the blockading ship *Housatonic*, the "Fish Boat" being caught and sucked down with the foundering vessel. These crews went to what was virtually certain death in such secrecy that it was often months before the names of the dead were made known, and when, after the lapse of half a century, the commemorating tablet was being cast, it was possible to identify only sixteen of the forty-odd who gave their lives.

This is the stark outline of a story of such exalted heroism that now, in a reunited nation, not only Charleston but America may well be proud of it.

Let us continue a few hundred feet along the sea-wall parade of East Battery and we come to Water Street. It is well named, for it was once a narrow stream and upon its banks were hanged the great pirate, Stede Bonnet, and his cutthroat crew, when an expedition from Charles Town (the original name of the city) captured them and put an end to piracy off the Carolina coast for the time being.

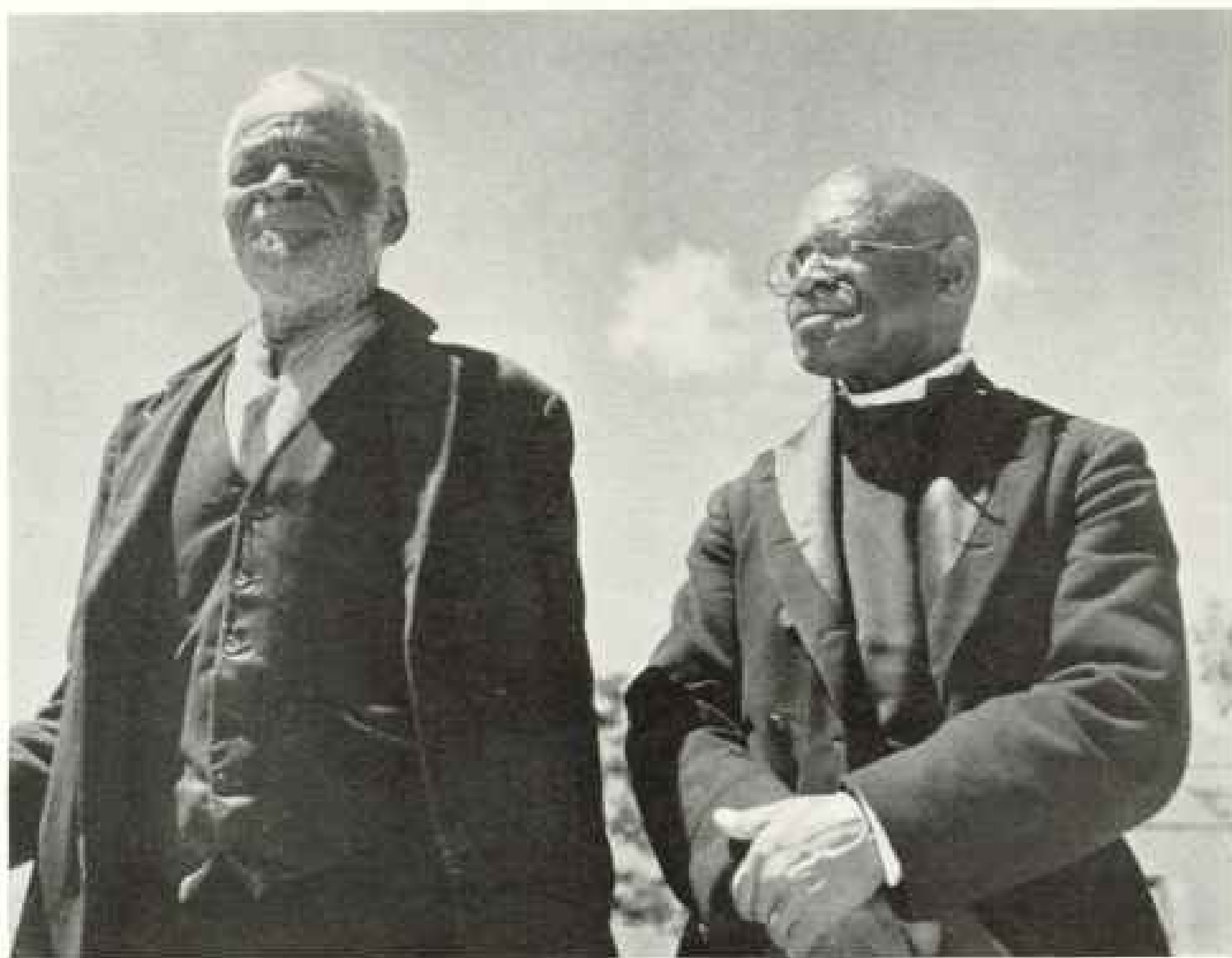
Ahead of us looms a fine square building of the early colonial type. It is known as the Old Exchange, and was once the property of John Bull; but when Boston was having its historic "Tea Party," the Carolinians, less spectacularly perhaps but equally effectively, having seized all the tea in port, locked it up in the dungeonlike cellars to rot, rather than pay duty.

Turning into Queen Street and stopping at Church, we find ourselves again reminded of the meeting of the past with the present. A lovely old façade with an iron



LAMBETH WALK OR ELEANOR GLIDE? NEITHER—IT'S THE CHARLESTON!

Negro boys and girls along the highway near Cypress Gardens scuff syncopations when they see an automobile approaching. If the driver slows down and seems likely to stop, they increase their pace in hope of a shower of pennies. If the car speeds by, the dancers relax into lethargy.



PATRIARCH AND PASTOR, VETERAN ISLAND DWELLERS

Before the War between the States, the graybeard at left was romping around a plantation. Now he and the minister live on an island near Rockville, where the latter still heads a negro orphans' home. The boys and girls operate a farm. Friendly white folk supply seed and other essentials.

balcony is the newly restored Dock Street Theater, and that here stood one of the first buildings in the Colonies fully equipped as a theater and dedicated exclusively to the presentation of dramatic performances (Plate V).

The architects incorporated in the restoration plan the site of the old playhouse and the walls of an early American hotel. The project was carried out with historical and architectural accuracy, and with extraordinary taste, with the result that Charleston now possesses as finely equipped a small theater as any in the country.

Leaving the theater, the gaze of the visitor is immediately caught by the soaring spire of St. Philip's, and a few steps will bring him to one of the most beautiful churches in America. Known as the "Westminster of the South," St. Philip's is the oldest Protestant Episcopal parish south of Virginia (pages 274-5). Presidents Washington and Monroe have worshiped with its congregation, and under the great oaks of its graveyard names that have made history are etched upon aging marble.

It is characteristic of human nature that our possessions increase in value when coveted by others. Next in our walk we come to the Heyward-Washington House on lower Church Street, the former residence of Thomas Heyward, Jr., a signer of the Declaration of Independence from South Carolina.



FOUR ENEMY COMMANDERS HAVE SAT BENEATH THIS CANDLE CHANDELIER.

When the British captured Charleston, Sir Henry Clinton, Lord Rawdon, and Lord Cornwallis were quartered in the Miles Brewton House (page 303). After Union soldiers entered the city in the War between the States, the general at the head of the invading troops set up his headquarters in this drawing room. Today the mansion is better known as the Pringle House, named for the family that owned it for many years (page 285).

Here in 1791 President George Washington was domiciled by the city when on his famous swing by coach and four through the southern States of his new republic. A decade or so ago, Charleston learned to its horror that the building, then the property of a local baker, was about to be purchased and that the paneling and woodwork were to be shipped away.

The resulting indignation occasioned the founding of the Society for the Preservation of Old Dwellings. A fund was raised



STROLLERS READ THE TALE OF THE FIRST SUBMARINE TO SINK A WARSHIP

A plaque on the Battery relates the exploits of a heroic Confederate crew (page 297) which manned the Hunley "Fish Boat." Armed with a spar torpedo fitted over the bow, this strange craft crawled outside the harbor on February 17, 1864, and sank the U. S. S. *Houatonic*. In the encounter the clumsy iron boat was sucked down and her crew perished. She sank four times inside the harbor on test runs, drowning her crews. Each time, when she was hauled to the surface, other sailors volunteered for duty. Made from an iron boiler cut in half, she was twenty feet long and five feet deep. Seamen propelled her by hand while sitting down.

and the early Georgian mansion, with its spacious rooms, unusually fine woodwork and historical significance, was saved as a local shrine. Gradually the building has been restored to its original condition, and through the co-operation of the Charleston Museum the small formal garden has been planted in the shrubs and flowers that are recorded as being coeval with the mansion.

#### THE FIRST FIREPROOF BUILDING

Near the Heyward-Washington House we meet another of Charleston's "firsts," America's first fireproof building. Built in 1822 to house the county records, the structure, Greek Doric in type, massive yet gracefully proportioned, is a monument to its architect, that same Robert Mills, born in Charleston, who gave to the National Capital the Washington Monument.

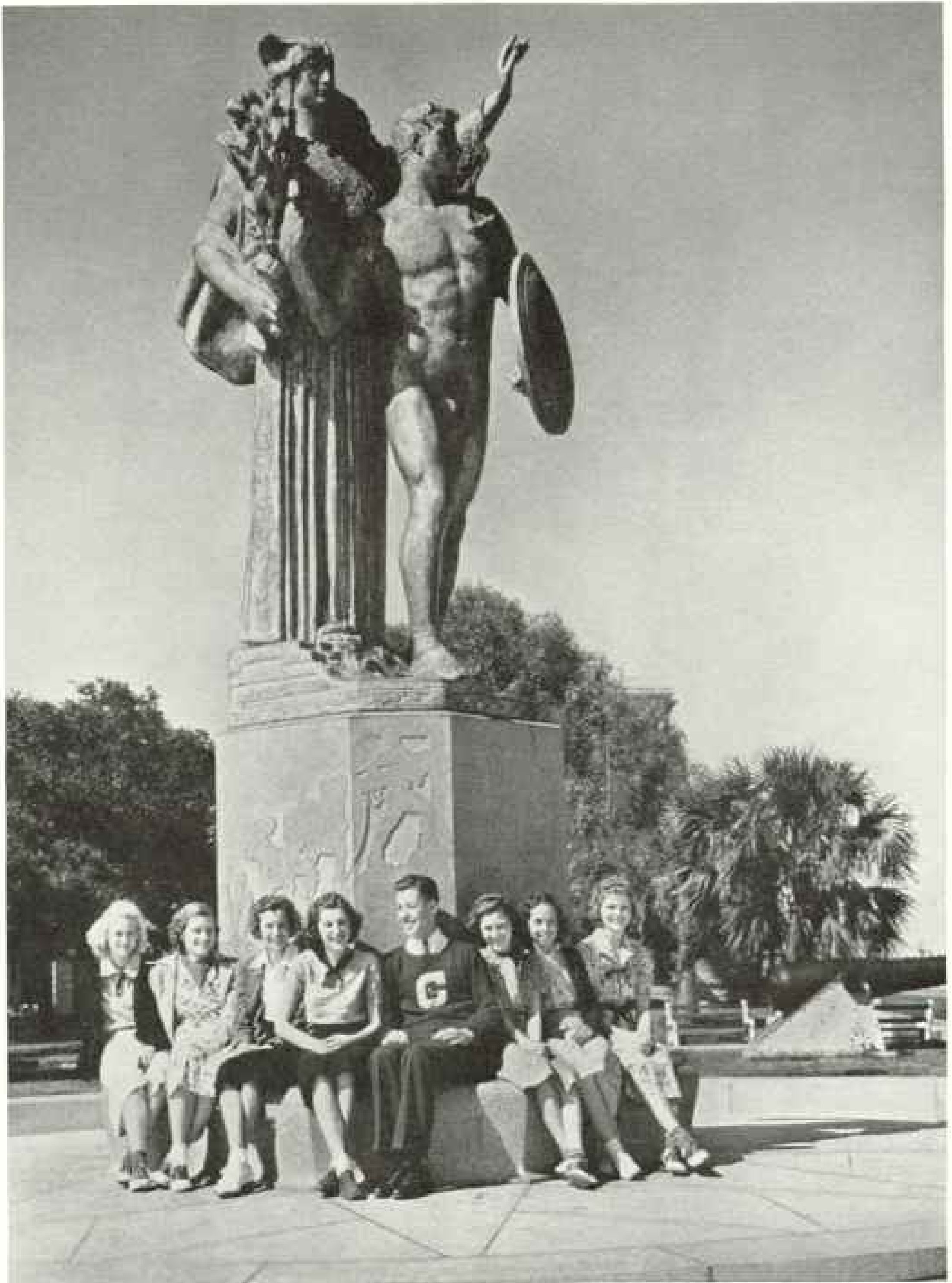
But now with our walk already half finished, and as we turn into Meeting Street and face again toward the Battery, we realize the impossibility of examining in detail

all of the characteristic and interesting buildings that we shall see.

Before us, as the wide thoroughfare narrows in perspective towards the Battery, they take their places quietly in converging rows and it is the street itself which challenges our attention, with its atmosphere of Old Charleston. Here we see at its best that infinite variety within a general pattern which never fails to delight.

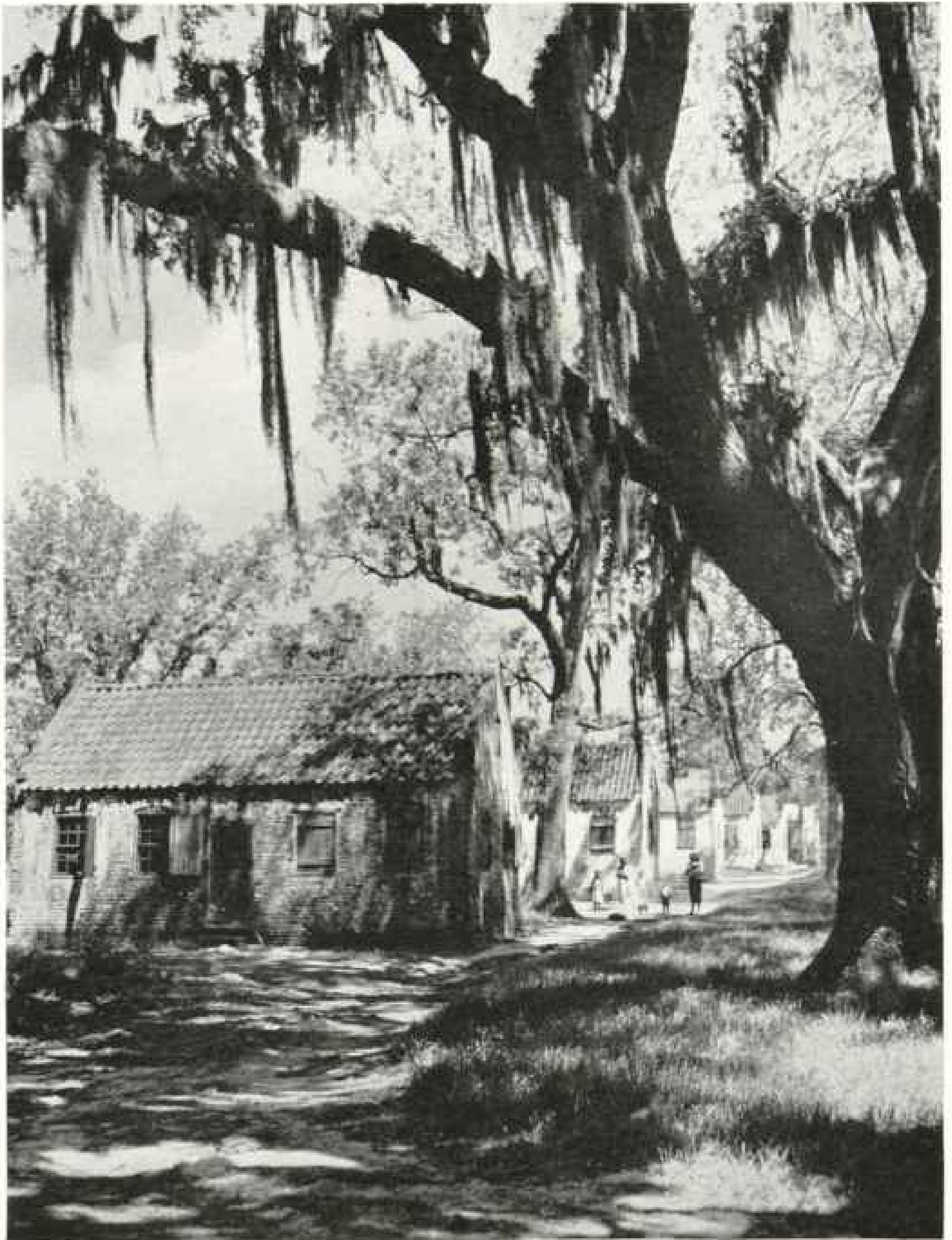
High overhead from the steeple of St. Michael's, resembling that of St. Martin's-in-the-Fields, in London, mellow chimes announce the hour (page 280). Since 1764 that clock, a primitive system of wooden cogs, rope and weights, has been the arbiter of the city's time. Today, feeling its age, it is subject to occasional lapses; but no modern timepiece would dare to argue with it. In Charleston you are not late to an appointment unless you are late by St. Michael's.

Proceeding toward the Battery, we stroll beneath the porticoes of the old church and



YOUNG CHARLESTONIANS REST AT THE BASE OF A MEMORIAL TO CONFEDERATE FAITH AND COURAGE.

Statues depict in allegory the defense of the city and its environs from assault and siege in 1861-65. One arm of the bronze warrior, muscles tense, is drawn back to repel attack; the other holds a shield bearing the Seal of South Carolina. The figure of the woman, grasping the laurel of immortality, typifies the city. Her left arm points seaward toward the foe. Relief scenes on the pedestal show working parties repairing shattered walls of forts with sandbags. The monument was unveiled in 1952.



BOONE HALL'S SERVANT QUARTERS CLUSTER IN THE SHADE OF FESTOONED OAKS

In Colonial times indigo plants brought wealth to this old plantation on the coast north of Charleston. Today the vast tract thrives as a vegetable farm, and is known primarily for its pecan groves, which cover hundreds of acres. Trucks roll away for the North loaded with produce, some of which reaches dining-room tables in Washington, Baltimore, and Philadelphia a day or two after it has been taken from the South Carolina fields.



A MIGHTY BRIDGE CURVES ACROSS COOPER RIVER AND TOWN CREEK

Its longest cantilever span (background) crosses the main channel with a clearance of 150 feet at high water. More than two miles long in all (page 304), the concrete-and-steel structure links the rural mainland with industrial Charleston on its peninsula. Until ten years ago ferryboats brought travelers to the city, just as they did in colonial days.

the hall of the South Carolina Society, which lies just beyond. Across the way the sidewalk passes beneath the broad piazzas of the Horry House (p. 278), all built in the days when the street was less sacred, and a man might span the sidewalk with his piazza if he had a mind to, and listen to the talk of his neighbors and the hucksters' songs beneath his feet.

As we near the Battery and glance down an approach of a short city block, we are brought up standing by one of the most nearly perfect Georgian residences in America, the Miles Brewton House at 27 King Street (pages 285 and 299). Mention the name to any architect and he will probably tell you that he cut his professional teeth on

drawings of it in college; then, becoming technical, he will launch into explanations of the unusually light and intricate plaster decoration.

Here, during the Revolution, Sir Henry Clinton, attracted no doubt by its flawless English atmosphere, established headquarters for the British army. Here again during the War for Southern Independence, when the city was evacuated by the Confederates, the general commanding the Federal forces ensconced himself and his staff.

Considered by many the loveliest of the residential gardens is that which hides behind the high brick walls of the William Gibbes House at 64 South Battery. The



dwelling, dating prior to 1776, is an outstanding example of the wooden colonial Georgian, and, with its modern garden, preserves the atmosphere of the city in the days when it was the capital of its plantation principality (Plate VII and page 283).

#### THE CHARLESTON OF 1938

But Charleston is not a museum piece, nor do the 105,000 residents of city and suburbs (divided almost equally between white and black) sit in retrospective and unproductive contemplation of its glamorous past. It is true that this heritage forms a background to its life, endowing it with a special color and flavor; but its illuminating statistics tell a different story.

Besides possessing the finest deep-water harbor south of Hampton Roads, Charleston has 86 major manufacturing plants and 125 wholesale establishments; its municipal college, established in 1770, was the first municipal college in America; its South Carolina Military Academy, now called "The Citadel," picturesquely situated on the banks of the Ashley, is one of the crack military schools of the country and is known as the "West Point of the South"; and the Charleston Museum, another of the city's "firsts," antedates all other public museums in the United States.

Springing from the rural mainland on the east, a modern steel bridge over two miles in length hurls its two mighty spans across Cooper River and Town Creek and plunges downward to the city's streets (page 303). Resembling a giant roller coaster, its more than five million dollars' worth of concrete and structural steel, attaining a height of 150 feet above high water, looms over the low line of the city and offers a magnificent bird's-eye view of the region. To the northward on the neck of the peninsula industrial Charleston reveals itself, segregated among its noises and stenches from the lower city.

Massed stacks rise from factories that have made the city one of the leading fertilizer ports of the Atlantic seaboard. Great oil tanks squat among the belching funnels of refineries, and far up the Cooper, beyond the gibbetlike cranes of the Navy Yard, lies the new plant of the West Virginia Pulp and Paper Company, which, when running at capacity, adds half a million dollars a year to the city's payrolls.

Looking directly downward, the visitor will be struck by the cleanliness of the

streets which spread their geometric pattern below him. For quietly, in its own way, the city has been working at its slum problem, and has just thrown open to occupancy two trim little villages, one for whites and one for negroes, which have been constructed with Government grants.

With its subtropical climate, and ranking high in hours of sunshine, Charleston's tourist traffic has been building steadily until it has become an economic "back log" against evil days. Housing accommodations and transportation facilities have been pushing forward to keep abreast of the seasonal increase in population.

Beyond the city to the north lies one of the finest municipal airports in the South. The great planes of two main lines shuttle north and south, pausing on their way between New York and Florida, or, heading westward, hurtle away racing the sun toward the Pacific. A transatlantic seaplane base is nearing completion upon the bank of the Ashley, Charleston having been selected as a terminal for Clipper service via the Azores and Bermuda.

Adjacent to the seaplane base lies the Municipal Yacht Basin, to furnish accommodations for pleasure craft which, like great migratory birds, follow the seasons north and south or linger on the Carolina coast for the fishing and duck shooting.

But what of the future for Charleston? Can she hold the characteristics that make her so individual a note in the American scene, and at the same time bid for success in a mechanized field in competition with the great manufacturing centers? If present plans carry through, the next decade will have to find an answer to that question.

Funds have been allocated for the Santee-Cooper hydroelectric development, now under way. When completed, it will release an enormous power output at rates comparable with any in the Nation. Where quiet marshes now spread along the river banks, great factories may rise.

The Charleston business man of another generation may forego the leisurely dinner and traditional siesta for a luncheon bolted while a deal is being closed. With his income doubled or tripled, he may find himself the beneficiary of an infinitely more abundant life. But will he be happier, and will his home be as quiet, his town as serenely lovely, as it is today?

That is Charleston's enigma of tomorrow.

CHARLESTON: A COLONIAL RHAPSODY



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Infra-color Photograph by R. Anthony Stewart

"FLOWERS, BOSS?" COAX THE VENDERS ALONG RAINBOW ROW

From the remodeled old houses, painted in a variety of pastel shades, this strip of East Battery earns its sobriquet. Flower girls' gay wares make the name even more appropriate. Wild azaleas, poppies, daisies, and verbenas, picked on near-by islands, make up the stock. One sidewalk merchant finds solace in a puff on her clay pipe when business is dull.



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"HONEY-SUCKLE," THIS MAMMY CALLS HER WILD AZALEAS

The pipe-smoking vander in front of Charleston's City Hall uses the name commonly but incorrectly applied in the South to blooms like those in the pail. This flowering shrub often is known as "white, or false, honeysuckle."



Kodachrome Photographs by D. Anthony Stewart

THEIR SUNSHADE LURES VISITORS TO BELLE ISLE GARDENS

Negro boys, one dressed as a girl to attract more attention, sit at the entrance to the showplace on Winyah Bay, north of Charleston. They extol the merits of the gardens to passing motorists.



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**FRIENDLY CHAT DELAYS ORANGE TOTIN'**

Opinions are aired in front of a produce house on Market Street, one of the old thoroughfares which was badly damaged by the destructive hurricane that swept over parts of the city in September, 1938.



Dufayubar Photographs by B. Anthony Stewart

**VEGETABLE SOUP IN THE BUNCH**

Fresh carrots, turnips, potatoes, celery, and onions are tied up in the proper proportions, all ready for the pot. Charleston housewives have gone in person to this shopping center in Market Street since the Revolution.



Kodachrome Photograph by B. Anthony Stewart

HIS GREAT-GREAT-GREAT-GRANDMOTHER RODE THIS ROCKING HORSE IN HER GIRLHOOD

William Lucas Simons, Jr., is the sixth direct descendant of the old Charleston family to gallop on the prancing steed, which was ordered out from England in colonial days. The arched wall encloses the lad's ancestral home, built about 1760.



© National Geographic Society

Dufaycolor Photograph by B. Anthony Stewart

"I'M TALKIN' ABOUT DEVIL CRABS; I'M TALKIN' ABOUT THE FOOD I SELLS"

Chants of street merchants in Gershwin's and Heyward's *Porgy and Bess* are the cries of Charleston peddlers. This crab vender's singsong sales talk rings in Church Street all morning. The carved cat is his trade sign. Many of the carts are stocked with shrimp.



Dufayesder Photograph by B. Anthony Stewart

FAIR FLOWERS OF THE SOUTHLAND

Twenty-five acres of Indian azalea bushes burst into soft, fragrant bloom in March and early April at Magnolia Gardens, near Charleston. The estate was founded more than two centuries ago by the Drayton family, in whose possession it still remains (Plate XV).



© National Geographic Society

Dufayesder Photograph by B. Anthony Stewart

TANNIC ACID FROM OLD TREES STAINS WATER IN CYPRESS GARDENS A DEEP BLACK

Dusky "gondoliers" in blue dungarees paddle visitors over the network of waterways that reflect the masses of blooms and the gnarled trunks of trees. The gardens grow over an old fresh-water reservoir, once used for flooding rice beds.

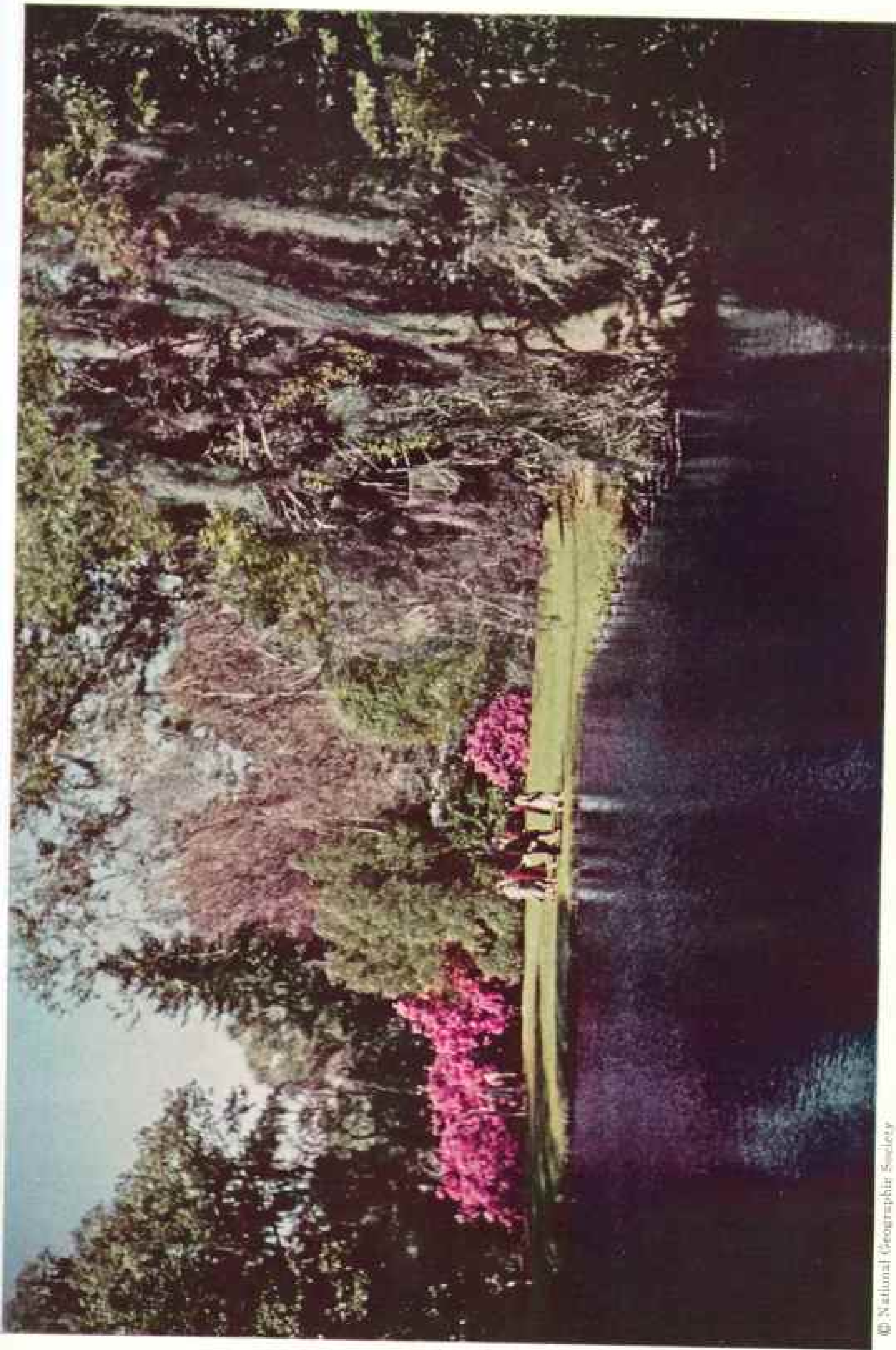


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Defraycolor Photograph by B. Anthony Stewart

VICE PRESIDENT GARNER CROWNS MISS CHARLESTON QUEEN OF THE AZALEA COURT ON THE CUSTOMHOUSE STEPS

Behind the principals stand the maids of honor and visiting queens, representing towns and villages. From the poles atop the white marble building flutter Old Glory and the U. S. Customs emblem.

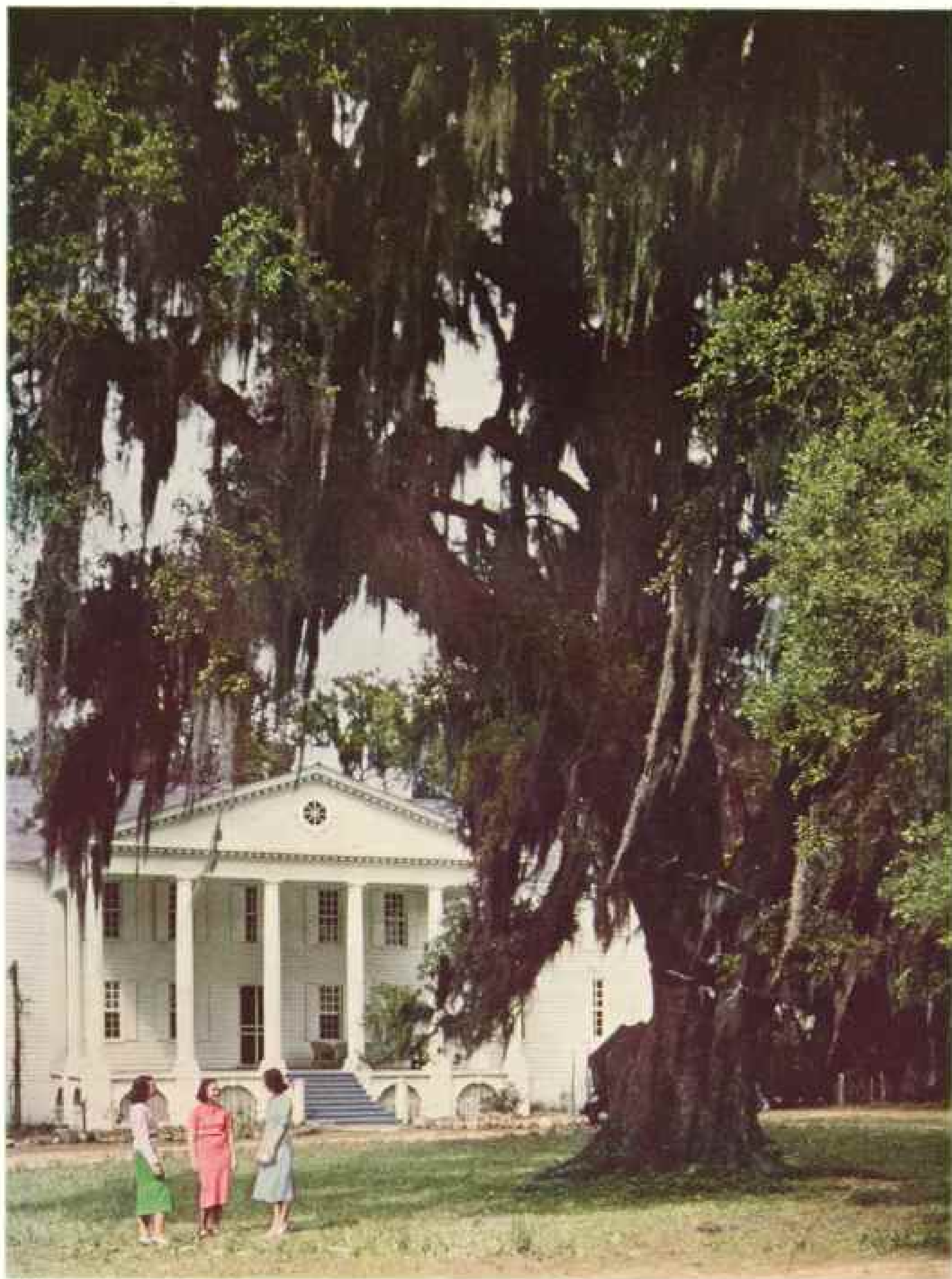


© National Geographic Society

Kodaikanal Photograph by B. Anthony Stewart.  
"THE MOST BEAUTIFUL IN THE WORLD."

JOHN GALTSWORTHY CALLED MAGNOLIA GARDENS "THE MOST BEAUTIFUL IN THE WORLD."  
Flaming azaleas, 15 to 20 feet high, line the lanes winding through the two-century-old estate. Immense moss-covered cypresses fringe the mirroring lagoons that dot the 25-acre Eden, on the banks of the Ashley River. Towering camellias, wisteria vines, and dogwood add their hues to the riot of color in March and early April. The gardens take their name from the many varieties of magnolia that burst into bloom in May (Plate XIII).





© National Geographic Society

Dufay color Photograph by H. Anthony Stewart

HAMPTON'S GIANT OAK WAS OLD WHEN WASHINGTON STOOD BENEATH ITS BOUGHS

The tradition-steeped mansion, near Charleston, built in 1740 by a French Huguenot, has been the stopping place of many great men. Recently the building was restored by Archibald Rutledge, poet laureate of South Carolina, and is the focal point of a 2,000-acre plantation. Brick arches of an intricate plan support the porch. Hand-bored to prevent rotting and splitting are the tall white wooden columns.

## BALI AND POINTS EAST

### Crowded, Happy Isles of the Flores Sea Blend Rice Terraces, Dance Festivals, and Amazing Music in Their Pattern of Living

BY MAYNARD OWEN WILLIAMS

“WHERE have you been this time?”  
“Netherlands Indies.”

“Meaning what?”

“Oh, Sumatra, Java, the Celebes, the  
Moluccas, Bali—”

“Oh, yes. How’s Bali?”

How’s Bali? Some call it a paradise. The essential is that Bali suits its own people. They like their own side of the hill and consider expulsion from Bali the worst possible punishment. To the Balinese, immortality means rebirth on their own beloved isle.

Rich volcanic soil, a friendly climate, and control of water make misery uncommon and famine unknown. Leisure leavens toil; artistic skill is widely shared and generally appreciated, and there is a subtle harmony between the people and their island home.

The gods are ever-present friends. Escape from the numerous evil spirits is a familiar, exciting routine. Amusements, founded in the mythology of the people, are free to all, even to those babes in arms who stay out most of the night, drinking in the Hindu classics along with their mothers’ milk.

Absence of good harbors has retarded the entry of foreign influence, and native life, preserved within this circling sea, challenges the camera.

#### EVERYDAY LIFE ABOUNDS IN COLOR

My presence was regarded with unconcern. Not the least of Bali’s charm is that it enables one to gaze on beauty with detachment. Balinese temples, brown bodies, grotesque idols, lush-green paddy, humming-bird fluttering of fingers and fan, fighting cocks in wicker baskets—all were there, not as made-to-order local color but as phases of normal existence.

Everyday life rather than superficial glitter gives character to this amazing little island. Although its culture is old, Bali is not a ruin, rising above an alienated countryside. Brahmanism is here, but caste distinctions are less complicated than in Hindustan.

Dotted with volcanoes, one of which spread death and desolation in its path only two decades ago, Bali, like the psalmist, lifts up its eyes unto the hills, the abode of the island gods (map, page 316).

These mountains, wringing rain from the tropical sky and spreading the fertility of volcanic soil, provide life for more than a million people in some 2,240 square miles. Western Bali, not so high, still belongs to the tiger, the wild hog, and the deer.

Behind every photograph of Bali, picture a mountain, sometimes destructive in its fury but eternally beneficent in the part it plays in the agricultural life of the island.

#### MOUNTAINS AND MUSIC

Before a festival, our young dancer bows toward Goenoeng Agoeng, the Peak of Bali, and the farmers hang from curving bamboo shafts small palm-leaf temples which salute the Holy Mount as a graceful substitute for a pilgrimage (page 318).

With every picture of Bali also imagine a background of music—rippling rhythm gay as that of a gypsy zimbalon. The music of the *gamelan*, the native orchestra, resembles modern “swing.”

Around a classic theme handed down unwritten through generations, each leaderless orchestra gives its own interpretation. As an American swing leader, modernizing an old melody, bases his variations on the musical memories of his audience, so the gamelan orchestra weaves intricate, sophisticated counterpoint on the sturdy warp of familiar themes. One who is ignorant of the underlying theme is confused by intricate details of melody and rhythm over which a painstaking group of artists have toiled for months.

Made up of farmers, artisans, and business men, a Balinese orchestra is a cross section of the Balinese population. The performers are so evidently having a good time that the Balinese gamelan is a noteworthy exponent of light-hearted artistry. Whether there is a formal audience or not, be sure the orchestra is having fun.



Photograph by Lillian Schoeffer

#### TWO BATHS A DAY ARE THE RULE IN BALI

Extra showers or plunges are in order on hot days or after hard work. Apart from formal baths, shallow "swimming holes" in the rivers are much frequented. At Tedjakoele, girls and women splash about under spouts of the village "shower."

Hundreds of communities throughout the island, from the Indian Ocean to the Java Sea, gaily play the music of sounding brass and tinkling cymbal.

Time and again I heard the sound of bell-jar *reyong* and *trompong*, of the brass-barred *gangs* and hanging gong, the thunder or rattle of the *kendang* finger drum (page 317). Their vibrant music also serves the dance.

I watched Balinese dances as different in spirit and movement as the *Blue Danube* and Benny Goodman's adaptations. On the lawn in front of the Bali Hotel I was one of a few score foreign visitors to performances which were followed with rapt attention by thousands of Balinese.

"MOVING MUSCLES WHERE THERE ARE NONE"

In Denpasar I saw a 14-year-old boy put on a Friday-night performance worthy to rank with great dancing anywhere. With a flower in his hair, fondling a fan, and with all but his bronze torso swathed in silk brocade, he knelt behind a row of brass gongs like bell jars; the ten-toned *trompong*.

At first he paid no attention to the row of brass bowls. Swaying on his knees, he seemed like a marionette activated by some invisible master. Arms and fingers moved with incredible undulations. "He is moving muscles where there are no muscles!" a physician explained.

His fan fluttered like the wings of a humming bird before a flower. His head wove from side to side, his eyes shooting mischievous glances to left and right (p. 323).

Then he put down his fan and, meddling with a drumstick, touched a gong, as if by accident. A thin, sweet tone escaped. At the sound, something waked in the eye of the dancer—wonder at this musical sprite which leaped from the brass bowls. He released another note from its metal prison. Then another.

His eyes sparkled with joy and discovery. His flashing wands turned loose a merry company of tinkling sounds which circled in a lilting rhythm till they danced away into the dark. Man, the puppet, was now a creator of melody and song, matching his moods with those of his music.

There were masked dancers and olio turns by comedians as popeyed as a man on



Photograph by Maynard Owen Williams

THEY "KEEP THEIR FIGURES" BY CARRYING THEIR OWN PACKAGES

From childhood to old age women walk miles at a stretch carrying on their heads heavy loads of every description. Such "exercise" requires erect posture. The thatched and whitewashed wall with the typical narrow, roofed gate surrounds a family compound.

a comic strip. Jokes mystified me, but the large native audience lost not a bit of this time-old clowning.

Before the Saturday-morning dance I dropped in on the two 12-year-old girl stars of the *legong* and the 14-year-old boy who knelt in the *kebiyar* dance.

Dressers were tightly wrapping the youthful bodies in such bands as constrict the waist of a matador (Plate V).

Before the headdresses of gilded buffalo hide were lifted down from their shrine, magic syllables were traced on the foreheads of the dancers and their hands were joined in prayer. As the bright crowns were put on their heads, the two young girls touched their lips with holy water. Sole witness of this ritual, I was completely ignored until the last earplug had replaced the coils of lontar leaf and a white beauty dot was placed on each forehead.

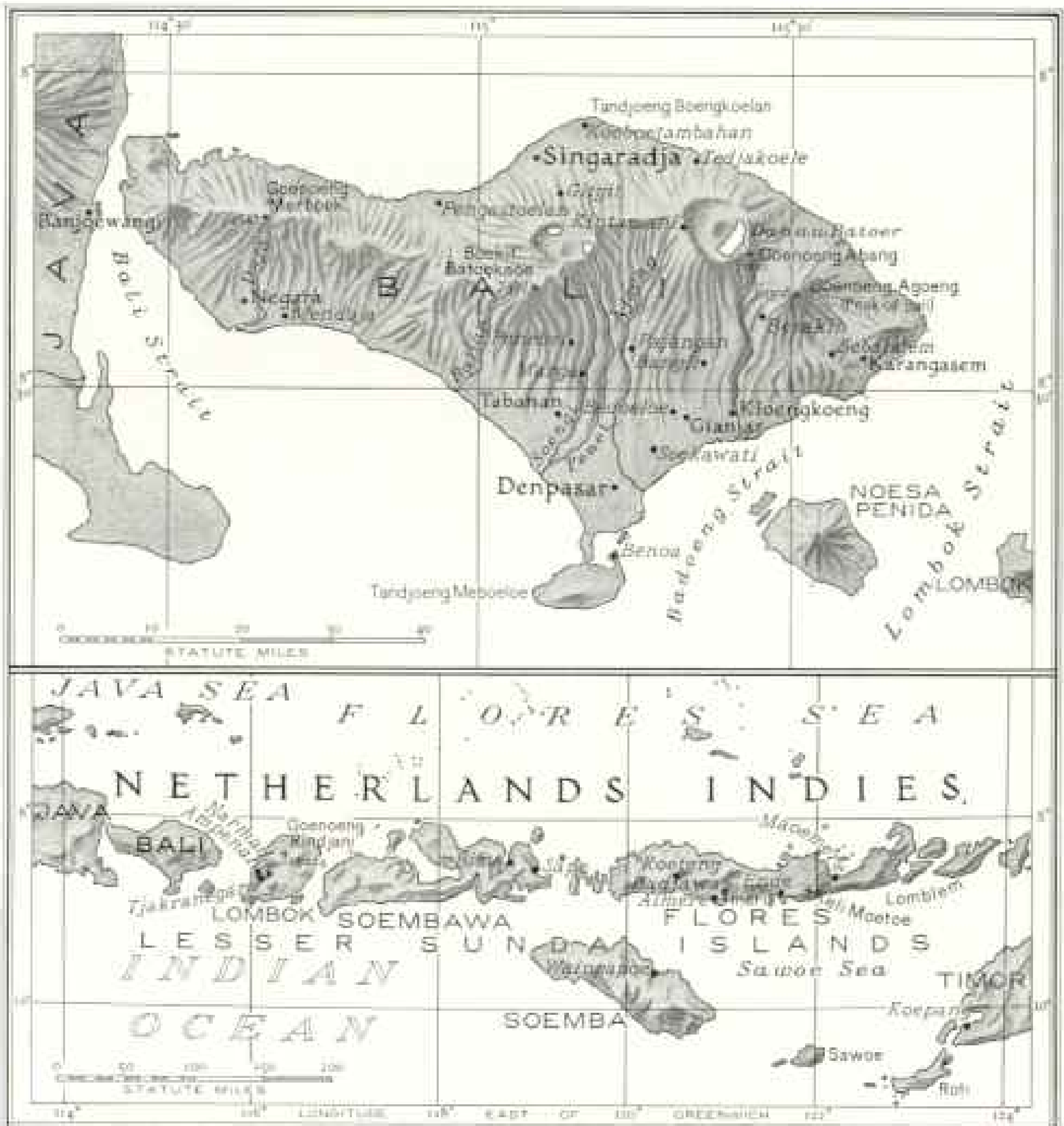
BOSOMS MUST BE COVERED IN TEMPLE

Farther along the road a dozen *djanger* dancers were dressing. While at work in their dusty little village of thatched houses, set in adobe-walled courtyards, these graceful girls are nude to the waist. But to go to

a temple without the breasts covered would be as disrespectful as for a woman to attend church without a hat (Plate VIII and page 348). In the courtyard in which bare-bosomed villagers were being transformed into glamorous dancing girls were visitors from many lands.

Above green skirts that sweep the ground a strapless blouse is covered over with a spiral of bright brocade. A broad polychrome collar of perforated buffalo hide and a resplendent headdress, whose glittering rim is set with flexible tufts of white, complete the costume.

The program begins with the classic *legong* from which have grown both music and the dance (page 345). This rhythmic pantomime pictures a princess, forced to marry the king who has abducted her. But she will not yield, even to win peace for her people. Misfortune comes to her captor in the form of a crow (impersonated by the *kebiyar* dancer now dressed as a girl), but the king kills this precursor of ill omen. Then princess, king, and crow return home in a pony cart, followed by porters carrying the heavy gongs and gilded wooden frames of the gamelan along the hot, dusty road.



Drawn by Ralph E. McAtee

#### ONE-HARBOR BALI LURES CRUISE SHIPS TO THE LESSER SUNDAS

Only safe anchorage is Bonoa in south Bali (upper map). The Lesser Sundas (lower) form the southernmost group of the vast Netherlands Indies, more than 50 times the area of the homeland. Bali, at the west end of this chain, missed being a peninsula of Java by the narrow margin of a shallow strait, at one place only a mile wide. Tigers, wild hogs, and deer roam desolate western Bali. Mountains in the north and east tilt streams to the fertile, populous southern plain.

The legong is a ballet of extraordinary skill, performed by artists whose training begins at three or four and whose career ends at puberty. But the love of dancing did not die, even in 13-year-old veterans. An occasional Javanese "opera" troupe brought adult performers to Bali; distant reverberations of Tin Pan Alley and Hollywood reached the island only a few years ago, and the modern *djanger* appeared.

Although the *djanger* dancers touch their lips with holy water, the spirit of this

group performance is more of popular fun than of temple dance or disciplined art.

The young men at times resemble a troupe of cheer leaders made up like Groucho Marx. Syncopated movement, swaying forms, flashing fingers, and glittering crowns in high relief against deep shadows under the banyan tree—such is the *djanger*, which even yet has little standing among the Balinese (Plate I).

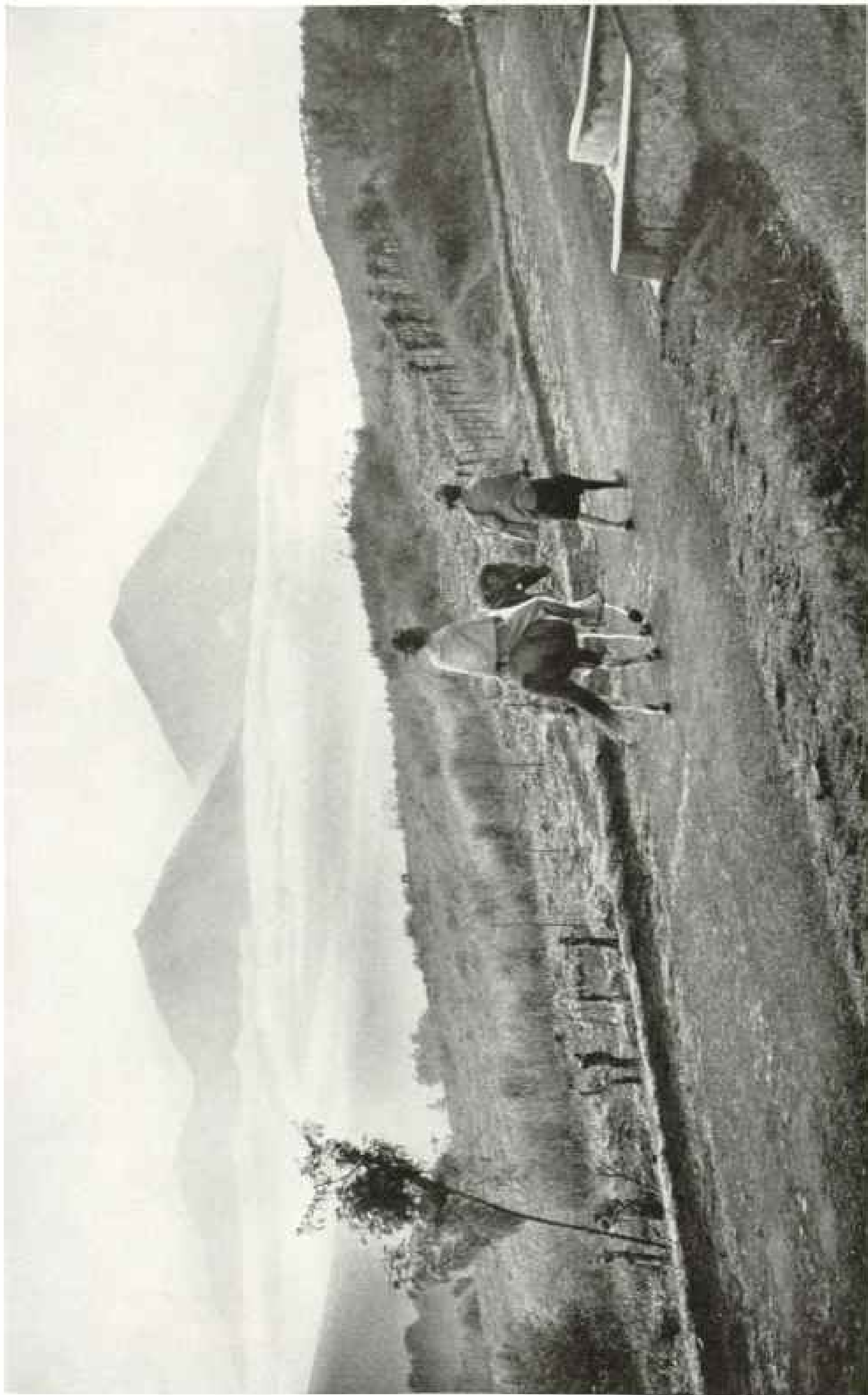
Even into the *djanger* is inserted the epic touch, for, in Bali, Sanskrit legends



Photograph by Burton Holmes

WITH SOUNDING BRASS AND TINKLING CYMBAL, THE ORCHESTRA WEAVES INTRICATE RHYTHM.

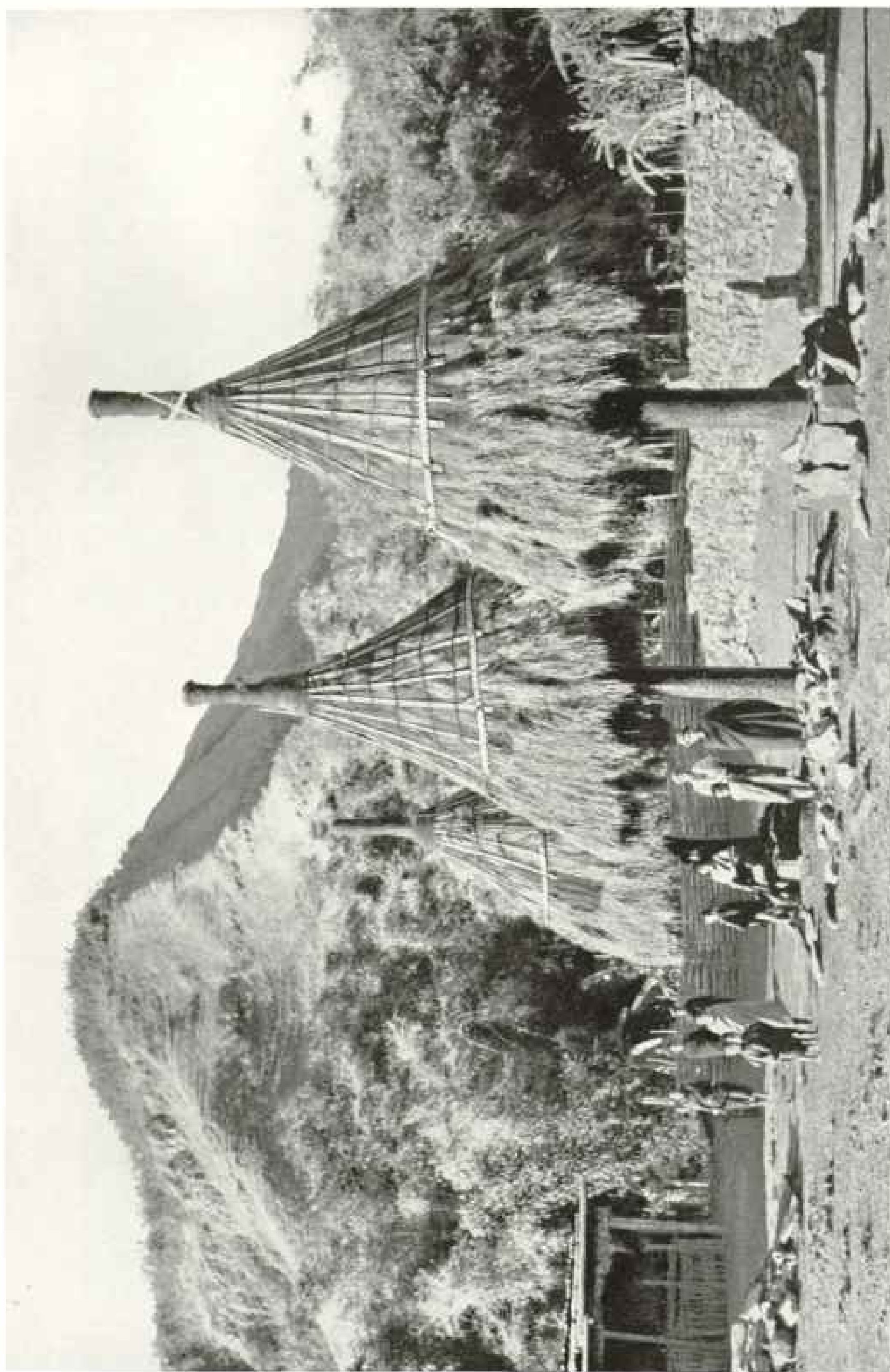
Instruments are set in elaborately curved teakwood frames. Musicians sit cross-legged on the ground. In the background and foreground are bronze metallophones, of nine keys and five keys, respectively. At the right are the ten bronze bells of the *trompong*. Like the gongs and cymbals, they are struck with hammers, sticks, and mallets, while the drums (left) are beaten with the finger tips.



Photograph by Burton Higgins

ABOVE LOW-HANGING CLOUD BANKS RISES THE "NAVEL OF THE WORLD," SUMMIT OF GOENOEING AGOENG

To the Balinese their island's highest mountain (right) is the center of the world. On the slopes of the sacred, two-mile-high peak stands the mother temple of all Bali, with its hundreds of thatched towers (page 325). The left-hand mountain is on the rim of an enormous old volcanic crater, in whose depths (far left) may be seen Lake Batoct. The road in the foreground crosses the island from south to north.



Photograph by Margaret Owen Williams

WITH TOTEM POLES LIKE SHAGGY PARASOLS, NGADA TRIBESMEN SHOW RESPECT TO THE SOULS OF JEALOUS DEAD

Carved tree trunks sheltered by thatched roofs represent male ancestors. In a bamboo-thicket clearing spreads the dusty enclosure of a native village on the island of Flores (page 138). Christian schools are educating the younger generation here. Missionaries take care to show no disrespect for the totems.





Photograph by Burton Holmes

LAUGHING, HOOTING, JOKING MEN CARRY A GROTESQUE BULL COFFIN

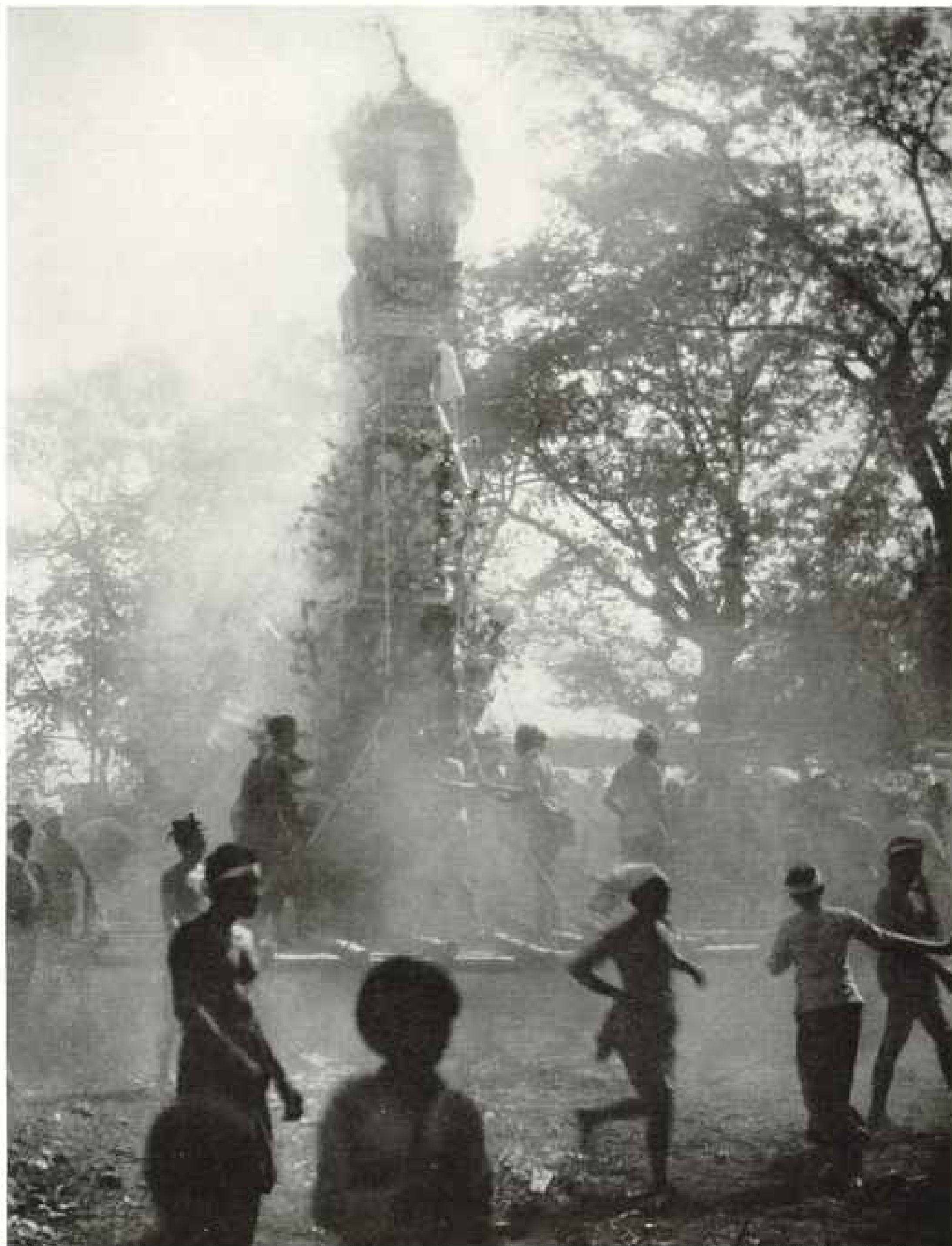
Cremation ceremonies in Bali are occasions for gaiety and horseplay. For the souls of the dead are thereby liberated to higher worlds and are freed to be reincarnated into better beings. Wooden caskets are carved from a single tree trunk in the form of some animal, usually a bull for a man and a cow for a woman. The figure is covered with felt or velvet and many ornaments.



Photograph by Maynard Owen Williams

LIKE WOOD CARVINGS ARE WATER BUFFALOES FRESH FROM THEIR MUD BATH

Caked with wet earth, the animals emerge from a wallow in mud pits near Sape, on the island of Soembawa. Though they sometimes attack people, and even tigers, native boys drive them, climb over them, scrub them, and hang from their horns. In some regions snowy egrets keep the huge domesticated animals free from vermin.



Photograph by Andre Roosevelt

WHILE FLAMES LAP RICH TRAPPINGS, FRENZIED MOURNERS SNATCH SILKS AND MIRRORS  
FROM THE PYRE

Every Balinese looks forward to a gaudy cremation, luxurious send-off of his soul to heaven. Revelry marks the burning of a prince's remains. It is unlucky to use matches, so the skyscraper bier is ignited by friction or a sunglass. The ashes are placed in an urn and strewn on the waters of river or ocean.



© Screen Travels

#### HE MAY SUCK HIS THUMB, BUT HE MUST NOT CRAWL!

Children in Bali are forbidden to make their way on all fours, because their parents object to postures characteristic of animals. Forty-two days after birth the child is given anklets and bracelets of brass and silver; also a necklace of charms. Later, he receives gold bracelets and anklets, and a gold disk with a ruby in it is pasted on his forehead (page 343).

are popular folklore. Any youngster will tell you that the girl in brocade leggings and gilded-hide helmet is Prince Ardjuna, who is about to be tempted by heavenly nymphs (Plate V).

#### BREASTS MAY BE SHOWN; BUT NOT LEGS

When in north Bali a djanger was danced in shorts, the natives were shocked, for Balinese modesty hides the female leg. A Balinese overlord, on seeing a celluloid musical at Soerabaja, Java, was convinced that Occidentals are depraved.

In the Monkey Dance at Bedoeloe hun-

dreds of male arms sweep across the light beams of torches or of the moon (349), and the *baris* dance has a military quality, ending in a duel with *creeses*.

At Kintamani three of us saw the most enthralling dance of all. A full moon was almost invisible beyond the mists and the 10,308-foot Peak of Bali, which had dominated the scene at sunset, was now lost to view. Alone I walked through the chill night air to the small shed where the dance was to be held.

On my arrival, two rush lights in the crude shed lighted the brown faces of a priest, two old women, and two girls in peasant clothes. They wore Turkish towels like shawls to ward off the cold of night, a mile or more above sea level.

There seemed nothing in these lonely surroundings to promise interest. The K. P. M. agent and his wife turned up the collars of their coats. I sat on my hands. It was a dismal scene.

Then the villagers arrived, their eyes shining in the light of the flickering torches. As they crowded closer, it became evident that this performance was not for us, but for them. We were given the only bench and no one got in our way, but, so far as the spirit of the meeting went, we might not have been there at all.

The two old women helped the tiny girls into spotless costumes and the priest began



Photograph by Burton Holmes

#### FAN AND FINGERS FLUTTER TO GONG AND DRUM

A legless man might do the *tebiyar*, a sitting dance, wherein the performer interprets musical moods by swift-changing facial expressions, swaying of torso, and nimble movements of head, hands, and arms. The dancer wears only a brocade skirt and a golden sash (page 314).



Photograph by Von Plessen and Dahlheim

#### LOST IN A TRANCE, CHILD DANCERS BEGIN THEIR ACT

To the monotonous chant of the chorus squatting beside a temple brazier, the 8-year-old girls drowse and fall limp. Women then attire them in clothing painted with silver and gold, and the girls slowly rise and begin to dance. In their hypnotic state they may continue for hours (page 322).



Photograph by Burton Holmes

A BALINESE BICYCLIST TURNS UP "ON RELIEF"

The only available stone on the island is so soft and quick-weathering that there is a continual need for new sculptures at Koeboetambahan. Thus modern, and often humorous, subjects appear. Other temple carvings show bandits holding up an automobile, two Netherlanders drinking beer, and a mechanic working on a broken-down motorcar full of Arabs (page 342).

his religious service to placate the evil spirits. But there was nothing about the two girls to suggest heavenly nymphs. They wore their finery with peasant awkwardness.

In front of the altar, strung between two uprights set in circular tables, were two crude wooden figures, male and female, which danced to the shaking of the uprights. Now these figures seemed silly, now intimate, now endowed with human emotions.

Kneeling before this crude mechanism, the two girls caught the uprights in their hands so that the vibration was conveyed to their arms and shoulders. A meager orchestra and group singing contributed to the eerie atmosphere. One girl collapsed, but the puppets still danced while the second girl seemed to fight off the trance.

Then she, too, fell forward on her face.

Attendants helped the stiffly bound figures to their feet, then lifted them like Egyptian statues to the shoulders of two muscular men. Abode of the spirits, their feet must not yet touch the earth. What followed was amazing.

DANCERS SEEM TO DEFY GRAVITATION

As far as we could see, the girls' eyes were tightly closed, but as they approached the roof beams during their circuit of the hall their bodies swayed to unbelievable angles. If a man tried to steady the dancer perched on his shoulders, she leaned and pushed his hand away.

Meanwhile a fire of coconut shells had been burning in the middle of the earthen floor, its glow adding to the dancing shadows inside the thatched roof.



Photograph by Frederick H. Simpson

THIS PIG RIDES TO MARKET IN THE SHADE OF HIS MASTER'S CART-WHEEL HAT

Palm-leaf baskets are the common carriers of Bali. A native can improvise one for any purpose, from carrying a porker slung from a pole to a satchel for taking a fighting cock to the arena (page 326). The sun hat is woven of bamboo.

Like a flower, swaying on its slender stem, each figure avoided the beam by bending her body far backward. Now, stiffly straight, they were lifted down and slowly they shuffled through the embers, cutting paths of dust through the flickering flames.

When they came out of their trance and spat out the devils which had possessed them, the dancers seemed oblivious of everything (page 323). Not till the bright windings had been removed and blouses slipped over their round young breasts did they seem to know where they were.

As I tramped back through the cold moonlight, Nature offered its own thrilling spectacle. The mists had dispersed and beyond the holy lake where a volcano once stood there rose, in almost snowy whiteness, the Peak of Bali, the Sacred Mount, the Navel of the Earth—Goenoeng Agoeng.

On its south slope is the mother temple at Besakih, with thatch-roofed pagodas looking down on the widespread paddy fields shimmering in the heat. Each Balinese state has its temple group at Besakih, and here, every year, the regents make offerings in behalf of their people.

Crowded with intricately ornamented temples, bristling with evidence of high artistic skill in wood, silver, and pottery, Bali has one outstanding art exhibit, the polychrome ceiling of the Hall of Justice at Kloengkoeng.

THE PUNISHMENT MORE THAN FITS THE CRIME

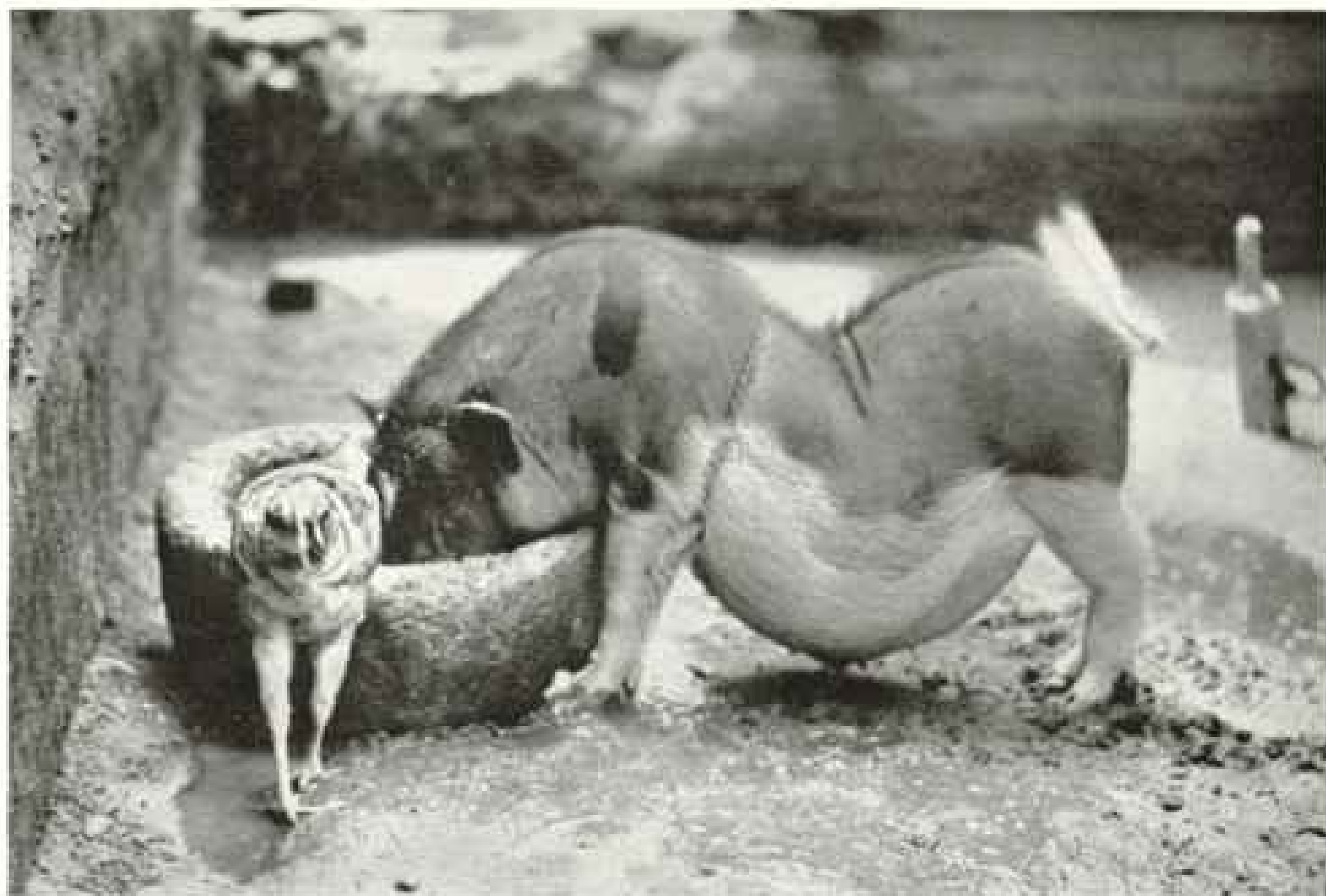
Sitting there for trial, with the four sides of the courtroom open to the world, the accused, gazing at the ceiling, might see in paint and gold leaf a veritable chamber of primitive horrors. The Kloengkoeng Hall



Photograph by Maynard Owen Williams

"AND THEREBY HANGS A TAIL!"

From a handbag of plaited coconut leaves dangle the handsome feathers of a favorite fighting cock. When the time comes to announce the matches, the curious container will be cut open and the bird formally introduced to the spectators.



© Screen Tascot

SWAY-BACKED AND UNDERSLUNG, BALI PORKERS NEED CASTERS ON THEIR BELLIES!

Only men may prepare the coast suckling pig that is the choice dish at festival feasts. Thousands of Balinese pigs are shipped to Java and the Malay States each year to feed the Chinese.

of Justice, like a Taoist hell, has an extravagant touch. Its shocking ceiling reminded me of the Gilbert and Sullivan idea of punishment: "something humorous, but lingering, with either boiling oil or melted lead."

Black gowns and white wigs could add no more dignity to the scene than do the "best clothes" of plaintiff, defendant, and Brahman priests who act as judges on the elevated platform of the Kerta Gosa, as the Hall of Justice is known.

Miguel Covarrubias translates, from Krause's *Bali*, the punishment for perjury: "When perjurers go into the forest they shall become entangled in the creepers, losing their way, running here and there without finding the right road. They shall be crushed by falling trees, struck by lightning, bitten by poisonous serpents, torn by the horns of buffaloes.

"Pointed stones shall cut their chests open. At sea they shall be attacked by crocodiles. They shall die unnatural deaths, while dreaming, standing up, eating or drinking. Neither they, nor their children, their grandchildren, nor their great-grandchildren, shall again be men on this earth. They shall reincarnate as maggots, clams, worms, and serpents. Such is the curse upon perjury—they shall know no further happiness."



Photograph by Maynard Owen Williams.

COPRA ON THE SCALES MAY SOON HELP LIGHT A ROOM, "BUTTER" BREAD, OR SHAMPOO YOUR HEAD

While a Malay weighs strings of dried coconut meat (copra) at Ende, island of Flores, two Chinese merchants keep the books. From earliest times the coconut palm has provided tropical natives with leaves for thatch, fiber for clothing, nuts for food, and a milky beverage. Today, oil extracted from copra is used in making candles, margarine, soaps, and nitroglycerin.

On my last day in Bali I followed the crowd into a field in the midst of which a cockfighting shed was surrounded by sellers of cotton goods and pink lemonade. Everyone was very kind. My two-cent admission fee was refused, and even amid their excitement sturdy men with hibiscus blossoms over their ears called ahead of me, "Make way for the gentleman."

But so shadowy was the shed that my camera and I left this furtive fun and rolled back over the highland trail to Gitgit and the sea.



It is a charming sea ride eastward across the deep, narrow strait to Lombok, the next island of the Lesser Sunda chain (map, page 316). The Peak of Bali soon appears and one has it in sight for hours. Then Lombok's volcano, 12,224-foot Rindjani, draws the eye.

For about a century Lombok was ruled by Balinese, and ruins of their princely palaces remain. After the gay Balinese, the Sasak inhabitants of Lombok seem somber. Perhaps no superficial evidence of racial and religious difference is more striking than the dress and deportment of the womenfolk.

Free from the spirit of the *purdah* and the veil, Bali lightheartedly flaunts the beauty of its young womanhood. Moslem Lombok hides it. Allah, a man's God, has kept women in a subjection almost equal to that from which the Prophet rescued them. Not all the Sasaks are orthodox Mohammedans, for some drink alcoholic beverages and eat pork.

It was midafternoon when we landed at Ampenan on the west shore of Lombok, whose two mountainous regions face each other across a wide, fertile plain. During the west monsoon there is a smashing surf. Heavy barges would pound the iron pier to pieces, so they are moored to buoys beyond the shallows.

When the steamer arrives, men in outrigger canoes, with round paddle blades like keg tops on the ends of sticks, carry lines out and the cargo boats are hauled to the ship's side by windlass.

#### PLEASURE GARDENS OF POTENTATES

At Narmada, Tjakranegara, and elsewhere the Balinese rulers had their pleasure gardens and palaces.

Moslem, Mogul, and Balinese used the water of crystal streams and dancing fountains for their delight. Guests of the modern resthouse at Narmada look down on terraces built for the lords of the land and bathe in pools where the *radjas'* dusky favorites slowly swim.

Armies of men toiled for years to perfect these gardens, terrace these hillsides, and excavate these placid pools. Like the checkerboard markings in the red sandstone of Akbar's city of Fatehpur Sikri, whose chess pawns were slave girls, these deserted pleasure gardens, evoking a glamorous past, bring a sense of solitude and desolation. The chill of nightfall settled over Narma-

da's fountains as we returned to our ship.

Thanks to the Australian deserts, Soembawa, east of Lombok, has much dry weather. But for palm and mangrove, Soembawa is like lowland Syria. Prickly pears, covered with dust, separate flat fields on which the hoofs of the spirited Soembawa ponies beat a sharp tattoo. Sandalwood is exported from Bima, but on the day of our visit the road to the coral pier lay between high-piled stacks of onions which were being added to by the busload.

Makassar praus, propped up high above the beach at low tide, revealed unexpected rotundities (page 338). When afloat they are bluff-bowed and square-sterned, but their hulls have streamlines which reveal themselves during hauling operations or while grounded at low tide.

Only a few miles from Bima, but reached by ship after a long detour, is Sape, miles away from its pier. While our driver unharnessed his tired pony and substituted another which was grazing by the roadside, I photographed the ever-interesting tactics of a herd of water buffaloes at their mud baths (page 320). Not until mud-wrestling became the fad had I any simile for this form of rest cure and beauty treatment, without which the wallowing water buffalo refuses to work.

#### A ZOO IN TAPESTRY

Soemba seemed barren, but its *kains*, highly colored in fantastic animal designs, rank in interest with the Jogjakarta batiks of Java and Achinese silver-thread textiles of Sumatra.

It is difficult enough to understand how designs or inscriptions are woven in damask. But the Soemba kain is unbelievable. Before the warp and wool go to the loom, the threads are so wound in fibers that only certain sections take the several dyes. Weeks later, those filaments fall into a predetermined pattern on the loom and whole squads of stylized birds and animals take their places on the finished fabric. A Soemba kain is the product of such ingenuity as makes an elaborate system of rice terraces seem like child's play.

The kain I bought was wrapped in the 6 a.m. final edition of a New York newspaper for Armistice Day, 1936. Enormous bales of American papers are shipped half-way around the earth. This one wraps a smoked fish, that one a roasted squirrel or a bit of dog meat, still another a bit of

BALI, GEM OF THE NETHERLANDS INDIES.

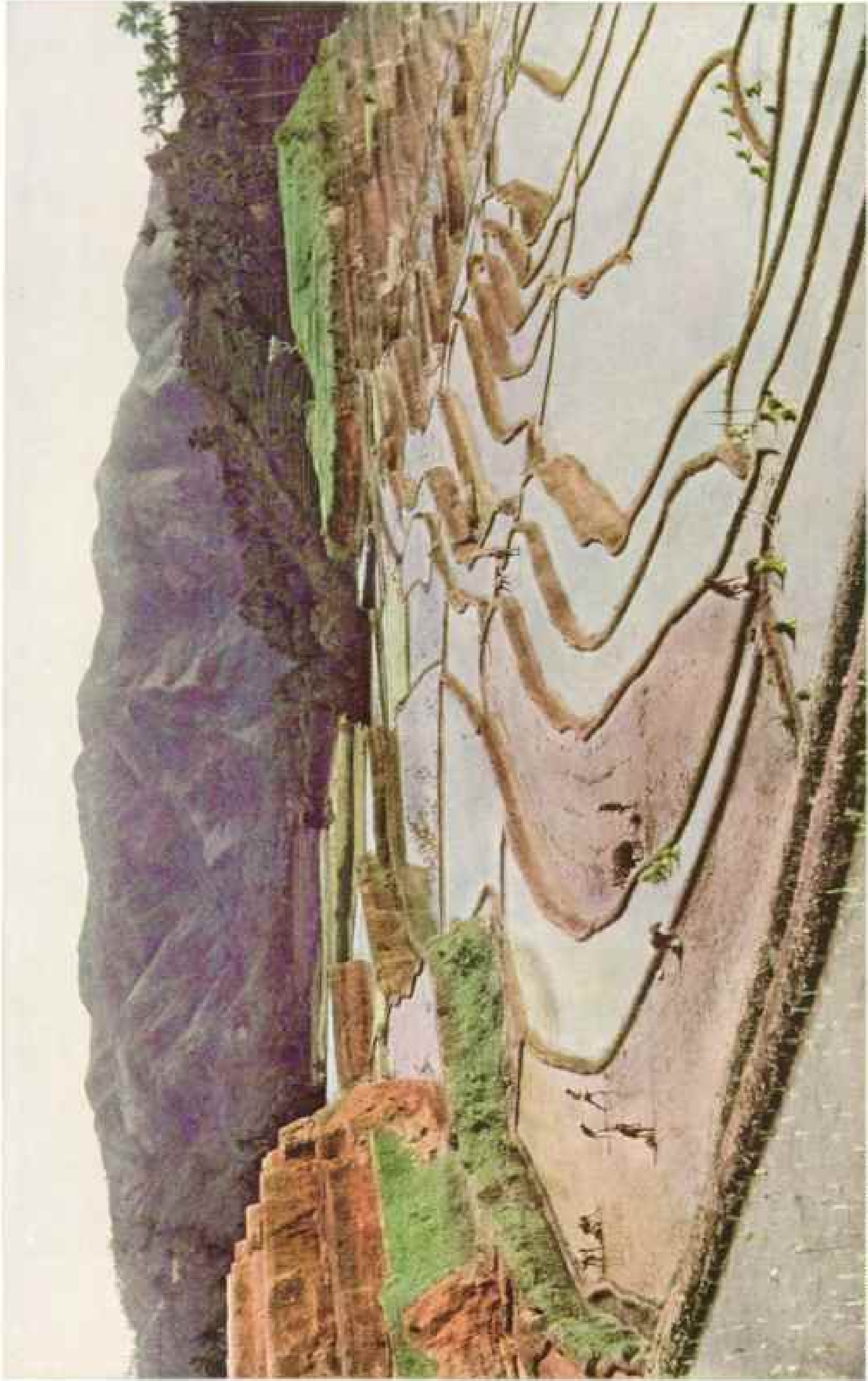


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Kodachrome Photograph by Maynard Owen Williams

TOO OLD FOR CLASSICAL DANCING AT 14, SHE STARTS IN BALINESE "SWING"

Most famous of dances on this small East Indies isle is the *legong*, or least ceremonial, but the girls may not perform its delicate movements after they are 12 or 13. This young woman plays the part of a prince in the *Djanger*, a sort of musical comedy based on mythology (Plates V and VI). Jazz rhythm crept in about 20 years ago and the steps have grown quite modern. Fresh flowers embellish the headdress of gilded buffalo hide. A white beauty spot shines between darkened eyes.



© National Geographic Society

LIKE GENTLE STAIRWAYS, BALI'S RICE TERRACES RISE FROM HOT VALLEYS TO LIFE-GIVING HILLS.

Finlay Photograph by Amos Burg

Rain from the mountains pours down the slopes, and the semisacred water is deflected to the thirsty but fruitful fields. Rice culture is almost a religion here. When the flooded land has been plowed by water buffalo (left center) lush young paddy is transplanted. Three crops a year are common. Often bunches of tender shoots going up to the hills pass harvested bundles of heavy rice heads coming down to the valley.



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GIFTS. BORNÉ. ABOVE, PLEASE THE GODS AND FEED THE POOR. To the temple at festival times girls carry atop their heads the richly ornamented stands, weighed down with flowers and fruit. The gods first enjoy the "service." Then the offerings are presented to unfortunate folk.



Kulichrome Photographs by Maynard Owen Williams

A BALINESE, DR. JERVIS, AND MR. HYDE

In the dances at Denpasar, this bearded patriarch plays the role of a bird of evil omen. Between times he tucks a bright hibiscus blossom behind his ear, fondles a fighting cock, and gently cares for his small granddaughter.



© National Geographic Society

Daycolor Photograph by Maynard Owen Williams

TRY BALANCING ONE OF THESE SKYSCRAPER OFFERINGS ON YOUR HEAD!

Feminine artists of Bali painstakingly erect the towering structures for religious ceremonies. Cut-out banana or palm leaf, elaborately decorated; fruits and flowers; roast pig, rice, and chicken are skillfully combined. Some offerings are seven feet high and weigh fifty pounds. Women carry the "monuments" on their heads in solemn processions on holidays.

BALI, GEM OF THE NETHERLANDS INDIES



OLD HANDS ADJUST THE GILDED HELMET OF A YOUTHFUL ACTRESS

Star of the "musical comedy" troupe, this girl takes the role of Prince Ardjuna, hero of a Hindu epic (Plate I). In the play, the prince resists the temptations of heavenly nymphs.

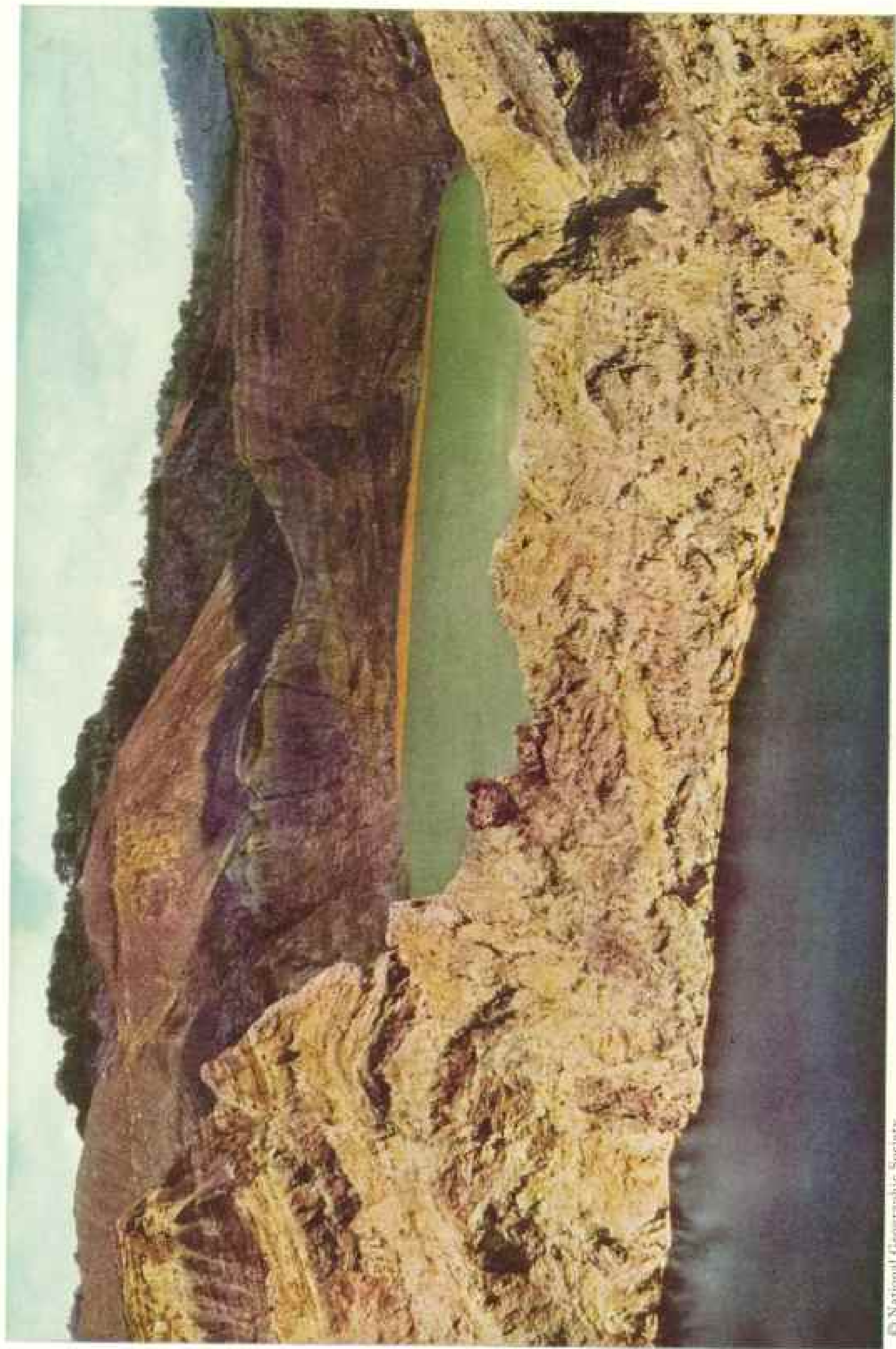


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Kodachrome Photographs by Maynard Owen Williams

SWATHED LIKE A MAYPOLE IS A BALINESE "CHORUS GIRL."

At work in the fields, native women are usually nude to the waist. But the more they "dress up" for holidays, the more they wear. Ribbons girdle the slender dancers, each of whom helps clothe the others.



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Dufaycolor Photograph by Maynard Owen Williams

ENCIRCLING CLIFFS IMPRISON FLORES' NEIGHBORING CRATER LAKES OF RED, GREEN, AND BLUE, A MILE ABOVE THE SEA

Dark as Burgundy wine is the deep pool (foreground), here reflecting a blue sky. Across the dividing ridge stretches a pale-green lake, with yellow scum floating on its far edge. Beyond the slope (left) lies another cupped lake of deep blue. Different types of soil give the waters their distinct colors.

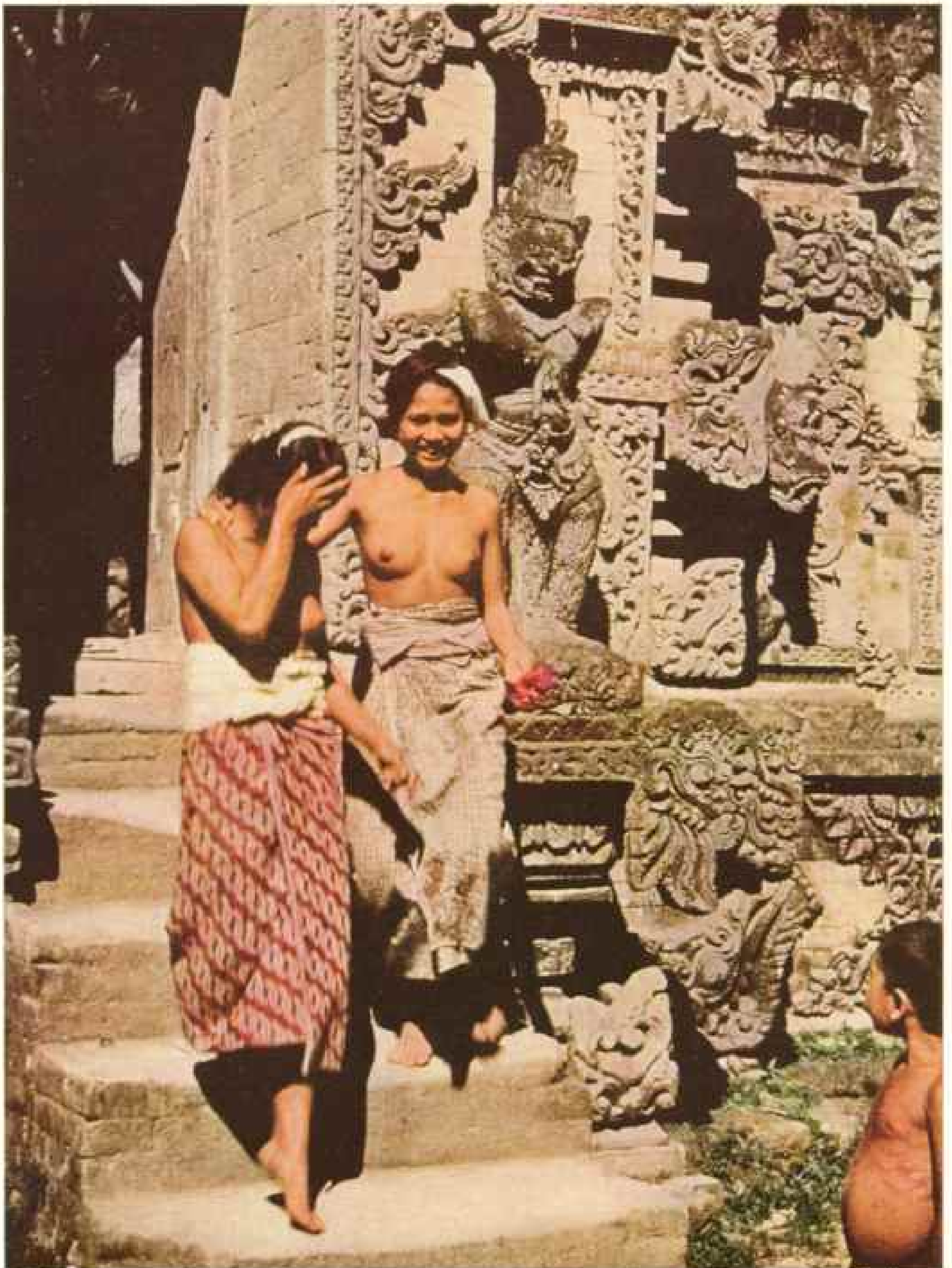


Kodachrome Photographs by Maynard Owen Williams  
 COCONUT NECKLACES SELL FASTER WHEN THE HAWAIIAN  
 MODELS THEM HERSELF



© National Geographic Society  
 WEARING FLOWER-TIPPED HEADDRESS, DANCERS MAKE UP IN  
 THE OPEN-AIR DRESSING ROOM





© National Geographic Society

Kodachrome Photograph by Maynard Owen Williams

BALI BELLES DOFF THEIR BLOUSES WHEN THEY EMERGE FROM THE TEMPLE

Within the place of worship, all women are fully clothed. The girls are shy and retiring. When they wed, they have many rights. They manage their households and the family finances. Many work outside the home and have their own incomes. Wardrobes, jewelry, cooking utensils, pigs, and chickens are their own property. House, rice fields, cattle, and implements belong to the husband.

Balinese wood carving. Mine was wrapped about a colorful tapestry zoo.

#### FIVE DAYS ON FLORES

Farthest east on the Lesser Sunda run is Timor. But the Portuguese half of the island lay outside my field and I traded the extra ride to Koepang for a really satisfactory five days on Flores. This shipping route is called "the tram," but passengers are not as important as copra, from which come soap, margarine, and munitions.

In the ship's hold condensed milk, some flashlight batteries, a few bicycle wheels, and favorite brands of American soap and toothpaste are in a sling ready for the lifeboats. On shore rises a small mountain of third-grade copra. The Government has been unable to induce the people of Flores to take the added care which would give their dried coconut meat a higher rating.

Aimere gets a ship every four weeks, and for a few hours the beach is the rendezvous for crinkly-haired natives, far different from those of Bali. Down from Roeteng and Badjawa rattle two motorcars, bringing the local officials for a good meal, a cool bottle of beer, and friendly contacts with our genial officers.

Had a car been available, I could have started my Flores trip here by climbing, among volcanoes of varying ages, to cool Badjawa, whose church and Ngada kampong face each other across a shadowy ravine where women, up to their elbows in dye, color cotton cloth a deep blue.

Lacking a car at Aimere, I stayed on the steamer as far as the Flores metropolis, Ende. Set amid widespread groves of coconut palms and surrounding a park with a cement tennis court, Ende seems metropolitan, though its population, doubled during market hours, is numbered by the hundreds.

In two senses I was a guest in Ende, for I lived at a Government resthouse, and my hostess, the wife of the postmaster, treated me as if I were a rich relative. The sheets were turned down with a flourish, the meals were set before me as if they were priceless viands, and my bill, written in a hand of which this small-town woman had every reason to be proud, was made out to the "Highly distinguished Sir."

#### A TRAVELER'S "PRIVATIONS"

When it came to spending a night out, I had to borrow a good deal of hospitality

from that modern blessing, the tin can. Rice can be had everywhere, cooked to a turn, and coffee essence, triple strength. But for the rest one goes to a Chinese store, buys a small tin of corned beef from Chicago or Argentina, condensed milk from the United States or Switzerland, and preserved peaches, pears, or cherries from California, pineapple from Hawaii, or peeled mandarin oranges from a cannery in Canton. Such a meal gains added flavor if an air-mail letter, brought to Koepang by a Qantas plane, shows sympathy with your "privations."

Twenty miles away and more than a mile above sea level are three lakes, pigmented by some chemistry of the soil in widely different colors—blue, green, and red. All are visible from one spot, and two of them are separated by so narrow a wall of rock that a good niblick shot, rising from the edge of a milky-green lake, might toss a ball over the barrier to fall into dark-red water (Plate VI).

By 9:30 o'clock the clouds move in above Keli Moetoe, so one awaits a clear day and starts at dawn. On my first visit the odds were three cameras against innumerable clouds, so I turned westward toward Badjawa and the Ngadas. Rains had washed out bits of the road, to which rocks, half the size of a coffin, had fallen from the overhanging cliffs.

Badjawa is cool. Across a narrow ravine, hidden by thickets of feathery bamboo, lies the Ngada kampong. The present Radja has a spacious home and a motorcar. But most of the houses are thatched affairs, with verandas of split bamboo in whose shade women have their looms.

#### BUFFALO HORNS ACCUMULATE

When a Ngada plans a good time, he opens a bamboo-length of gin and kills a buffalo. The effect of the gin wears off, but the buffalo horns are fastened, in ever-increasing number, to the front of his dwelling until they threaten to push him out of house and home (page 344).

Mementos of feasts to the living or the more potent dead, these horns are lasting records of local history. And those that seem mere duplicates, or worse, in such an unusual collection have watermarks, perforations, and distinguishing features of their own.

"This one? Oh, that buffalo I killed myself with a spear after other youths had



Photograph by Maynard Owen Williams

HIGH AND DRY ON STILTS, A MAKASSAR PRAU DISPLAYS STURDY LINES

At Bima, island of Soembawa, a bluff-bowed, square-sterned craft is shored up on tidal flats, revealing its sleek, round belly (page 328). Prominent are the two oarlike rudders of the seaworthy vessel. The pulpitlike poop recalls the caravels of early European explorers whose sea routes first linked the Malay Archipelago with the Western World.

stirred it to such anger that it would have tossed a tiger to death, or gored me, on those very horns.

"In those days coffee had aroma and the gin was strong, and I had a new wife. We danced till the moon rose over the bamboo thicket, and when we escaped from the party we lay together in the dark, listening to the throbbing drums outside. She's over there."

The dark-skinned, wrinkled woman must have heard, but the loom clicked on, below the widespread, dusty horns.

Years ago Father Bell, a missionary teacher, dropped in at National Geographic Society, Washington, D. C., headquarters, and on the way to Badjawa I returned his call. The bamboo thickets had been vibrating with music for days and we went over to see what was up.

When we called on the Radja, one of his wives said that he was "putting flowers on a new ancestor." We found him carving floral figures on a forked tree trunk, or *peo*, which would soon be erected in honor of the tribal dead and would in time acquire human characteristics. The Ngadas waste little worship on friendly spirits, but do all they can to propitiate evil or jealous ancestors (pages 319, 339).

All but a small portion of the *peo* was swathed in rich cloths and the shelter was as much to shield the tree trunk as the workman. But for the presence of Father Bell, who, while seeking to convert these pagans, has the good sense to be trustworthy and respectful in his dealings with them, I should not have been allowed to see this evolving "ancestor," much less photograph it.



STRANGELY BEDECKED NGADA BRAVES "PRESENT ARMS"

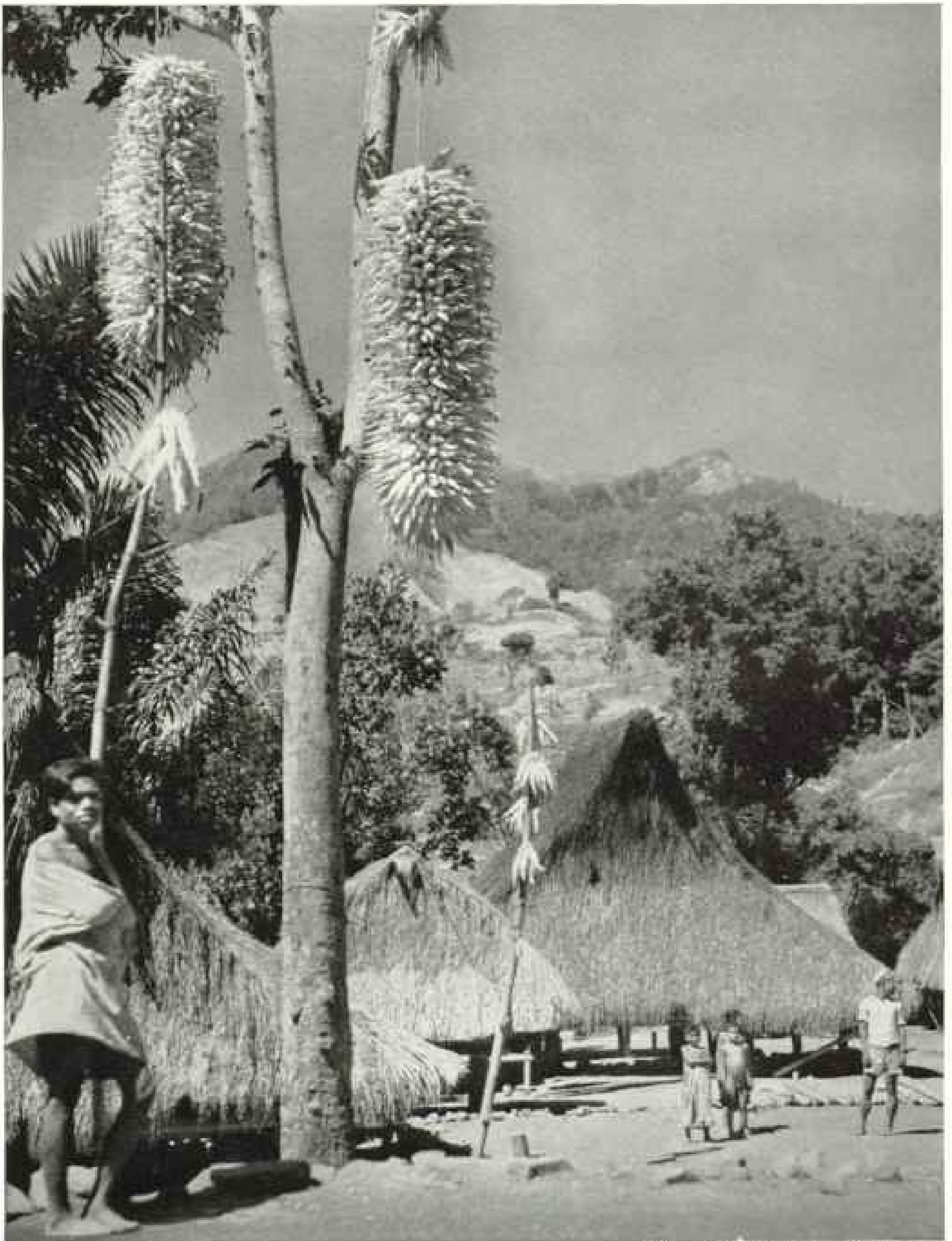
A dress parade precedes a dance of the sword carriers of Flores (page 341). Their necklaces are made of shells; bracelets of solid ivory. Large fringed ceremonial bags suggest the furry sporran worn in front of the Highland kilt.



Photographs by Magnard Owen Williams

CRAFTSMEN OF FLORES "PUT FLOWERS ON A NEW ANCESTOR"

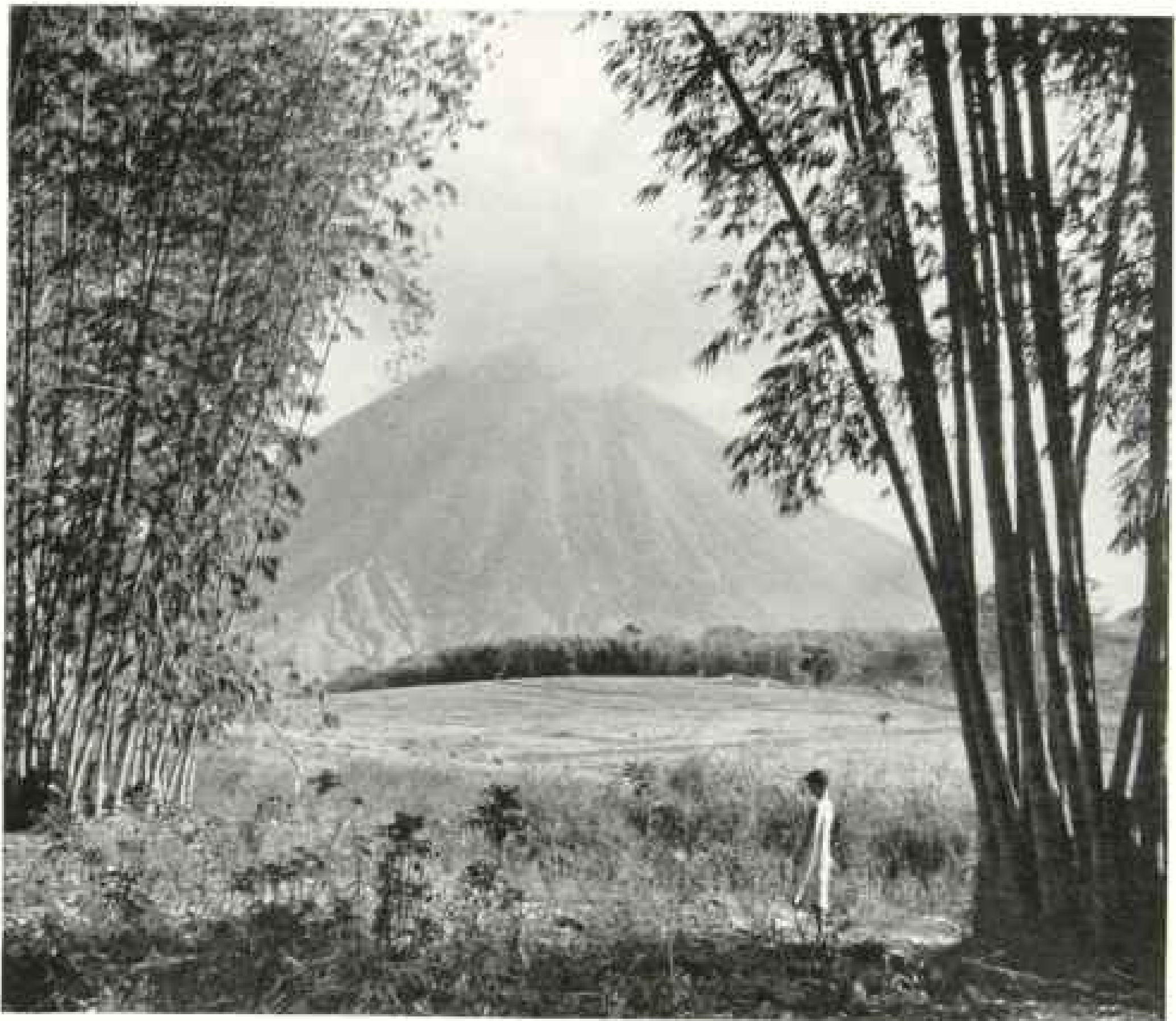
A wife of the Ngada chieftain (left) spoke of her husband's woodworking as if he were arranging real flowers on a memorial. With mallet blows men chisel floral patterns on a forked tree trunk for the spirits of the tribal dead (page 338). Only because the photographer was accompanied by a missionary teacher was he permitted to take a picture of the revered totem.



Photograph by Maynard Owen Williams

LIKE HUGE BLOSSOMS, FLORES CORNCRIBS DANGLE FROM A TREE

Strung together and hung high above the ground, maize is safe from animal robbers. Rice, coconuts, coffee, sandalwood, cinnamon, tobacco, and mother-of-pearl are other products of Flores. Land is owned in common by the tribe. To win a wife, the bridegroom here must work a stipulated time for her parents. From this thatched village the traveler climbs up to the three-colored crater lakes (Plate VI).



Photograph by Maynard Owen Williams

#### HIGH ABOVE FLORES; MOUNT INERI REARS ITS SHAPELY HEAD

Sailors far at sea watch for the clouds around its crown. From Sumatra to the Philippines a 3,000-mile crescent of volcanoes, the most extensive in the world, curves across the Netherlands Indies. Of more than 300 volcanoes in this zone, about 60 are active. High summits take abundant rain from the clouds; their lower slopes are extremely fertile.

"Come tomorrow at eight and we'll put on a dance," promised the Radja, as he scored the tree trunk for further carving and blocked out a circular hole just below the fork.

When Father Bell's pupils saw H. M. Herget's Aztec paintings in *THE GEOGRAPHIC*, some weeks before my visit, they adapted them to a religious pageant. And on the morrow I stopped to record this Aztec design projected through time and space from medieval Mexico to the 20th-century Sundas. That made us late to the Ngada kampong.

"You're late," said the Radja, with an air of independence which I secretly admired. "Now you'll have to wait for me."

The sun was high. The shadows already looked as if carved with an ax. The central

court was dusty. The women were slovenly. Some of the men were already drunk and still drinking. But the Radja would not relent.

His men were wearing solid-ivory bracelets, tightly fitted to the wrist by a cloth-covered bamboo circlet.

#### DANCE OF THE SWORD CARRIERS

My pictures of these sword carriers look posed. They are. But not by me. That way of holding the blade is as traditional with the Ngadas as it is with a British officer on parade (page 339).

The dance had hardly started before the men were ready to stop. Not so the women. Except for the brass spirals, reserved for bigger and better festival occasions, the women were "dressed up." To



Photograph by Mrs. Imeson De Con

#### WHERE DID YOU GET THAT HAT?

Some forgotten sculptor carved this caricature of an alien, evidence of the keen Balinese humor. Many years ago a dignified European wearing a tall topper visited Bali. Before long this incongruous portrait in stone appeared among the statuary of the Old Palace at Kloengkoeng (pages 324 and 325).

them, waving a silken square in a dance seemed preferable to pounding rice.

Looking at their pictures now, I wonder why I thought them so comely. But on that hot, dusty day, seeing so much finery and shiny oiled hair emerge from the thatched huts was a big surprise. If I ever return to that dusty kampong when another "ancestor" is being covered with flowers, I'll be on time!

No less dictatorial than a Ngada chieftain are the clouds above the Keli Moetoe lakes. Having been defeated on my first visit, I wanted to detour that far on my

way across the island to catch my ship at Maoemere.

"Will we go back to Keli Moetoe?" my chauffeur asked.

"We'll start for Maoemere at dawn. If it is clear when we reach the junction, we'll make the climb."

It was clear.

The side trail is nine miles long. If the bamboo bridges are in place and the culverts haven't collapsed, it's an hour's climb in second gear.

Half-naked mountaineers with bows and arrows tried to sell us raspberries. A section boss told us one bit of road was impassable. I watched the sky.

The lakes were discovered in 1915. In 1925 the Governor General came all the way from Buitenzorg to see these natural

wonders. Later the Crown Prince of the Belgians, now King Leopold III, paid them a visit. In those days, with copra selling at a good profit, the most elaborate resthouse in Flores was built in a casuarina grove just below the crater.

Today there is no fire in the kitchens, no water in the baths, no panes in some of the windows. The thatched roof is still good, but the foreign structure is falling into decay—this in a place where women in bright shirts and riding breeches might be pouring tea and laughing parties leaving to watch the shadow of night take

possession of the tricolored lakes.

The daily mists are to blame for the decay of this cool haven and, even now, clouds, sweeping up from the sea, were growing like genii released from a bottle between us and the sun.

Around the crumbling crater edge we raced, but my porter was distinctly afraid. Sure-footed and obedient, he stayed as far back from the wine-red lake as he could.

#### LAKES ABODE OF SPIRITS

The lakes are the abode of spirits. In the blue lake repose those of the old. In the light-green lake, whose color changes under the swinging sun, are the souls of those who died young. In the red-brown lake swarm the spirits of necromancers, magicians, and sorcerers (Plate VI).

Two mountaineers, armed with bows, came to shoot their carved-tipped arrows out in a wide arc. After an unbelievable wait, we watched them plunk into the ruddy waters. Even these men seemed fearful of the spirits into whose midst they shot. One showed me how to steady myself by crossing my legs and standing on the toes of one foot with the other to keep from falling into the satanic depths.

The last plate had hardly been exposed when the skirmishing clouds closed in. Near the junction ripe field corn, tied high



© Screen Traveler

#### MATERNAL SUNSHINE AND INFANT SHOWERS

To hear or see a child cry is rare in Bali. Babies are carried until they can walk. The child is free from pampering and is never beaten, but rather persuaded to obey. European-style schools provide elementary education. A boy helps his father drive the cows and water buffaloes. Girls learn weaving and cooking from their mothers (page 322).

up on tree trunks, was dripping like a thatched roof (page 340).

#### GREEN PALMS AND STORMY SKIES

During the ride to Maoemere the sun broke through and our winding road revealed rare beauty. When green palms, aslant against a stormy sky, sparkle with sun-kissed raindrops, Nature is far from dull.

Since Maoemere is riddled with malaria and most of the children have enlarged spleens, a new town is being built in the hills.





Photograph by Maynard Owen Williams

#### DANGLING JAWBONES RECALL HAPPY DAYS

Among the Ngada tribesmen of Flores, festivals are times of big "feeds." After feasts of water buffalo meat, the horns and jawbones of the animals are hung up in the verandas as souvenirs (page 337). Floor planks are of split bamboo.

On the beach, squatting among the splendid basketwork they had brought for sale, crinkly-haired men with the appearance of Papuans popped corn over a fire of coconut husks around which baked a circle of green-skinned plantains.

When I gave one a present for allowing me to take his picture, he made a wide-

armed gesture of welcome toward his islands to the east, toward Australia, New Guinea, and the South Sea.

But there in the harbor was my beloved *Reijniersz*, homeward bound. For this time, Maoemere, facing the mysterious islands in the Flores Sea, was journey's end.

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*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 May number, The Society should be notified of your new address not later than April first.*

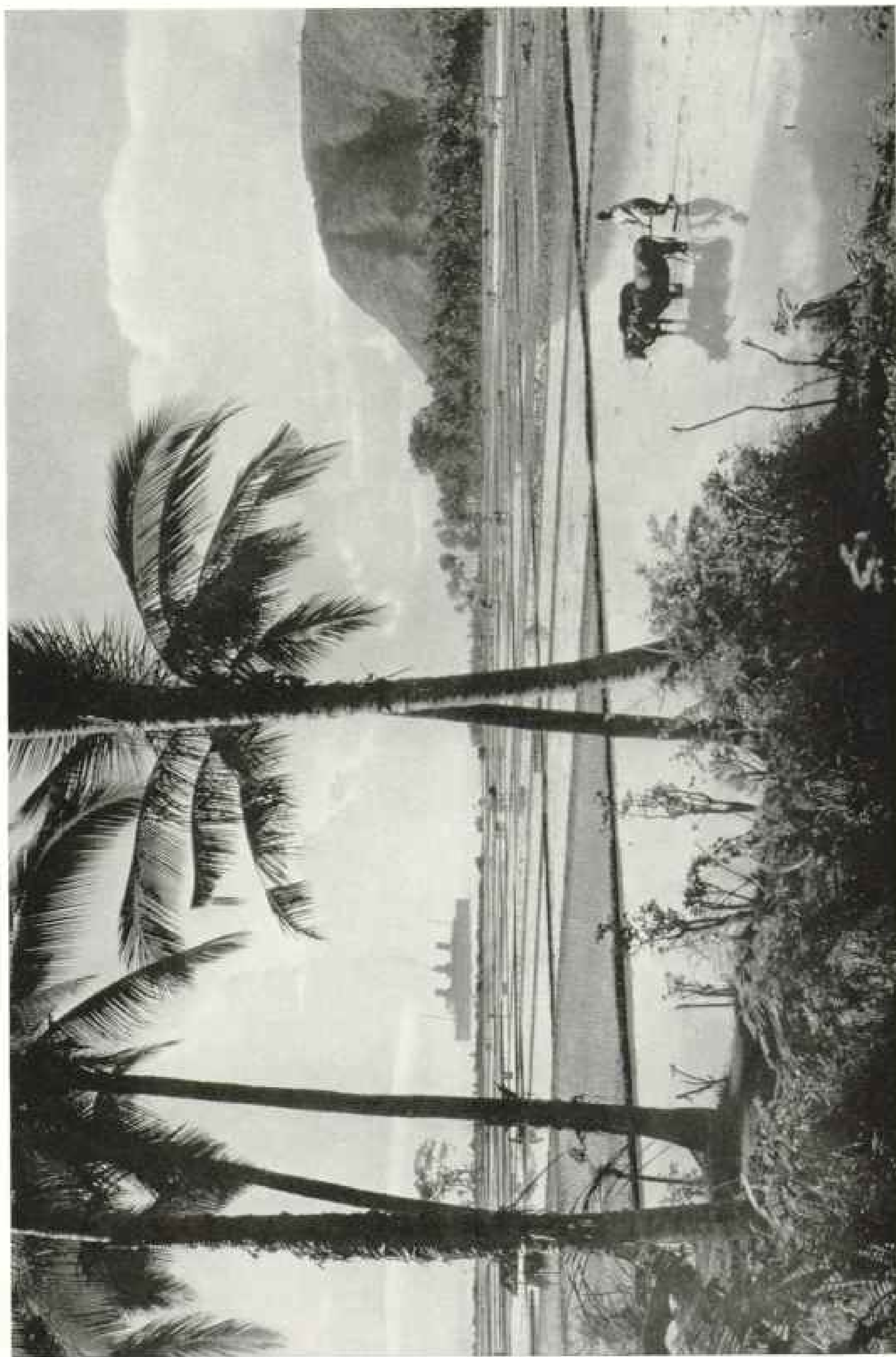
## Ways and Byways of an Island Paradise



© Screen Traveller

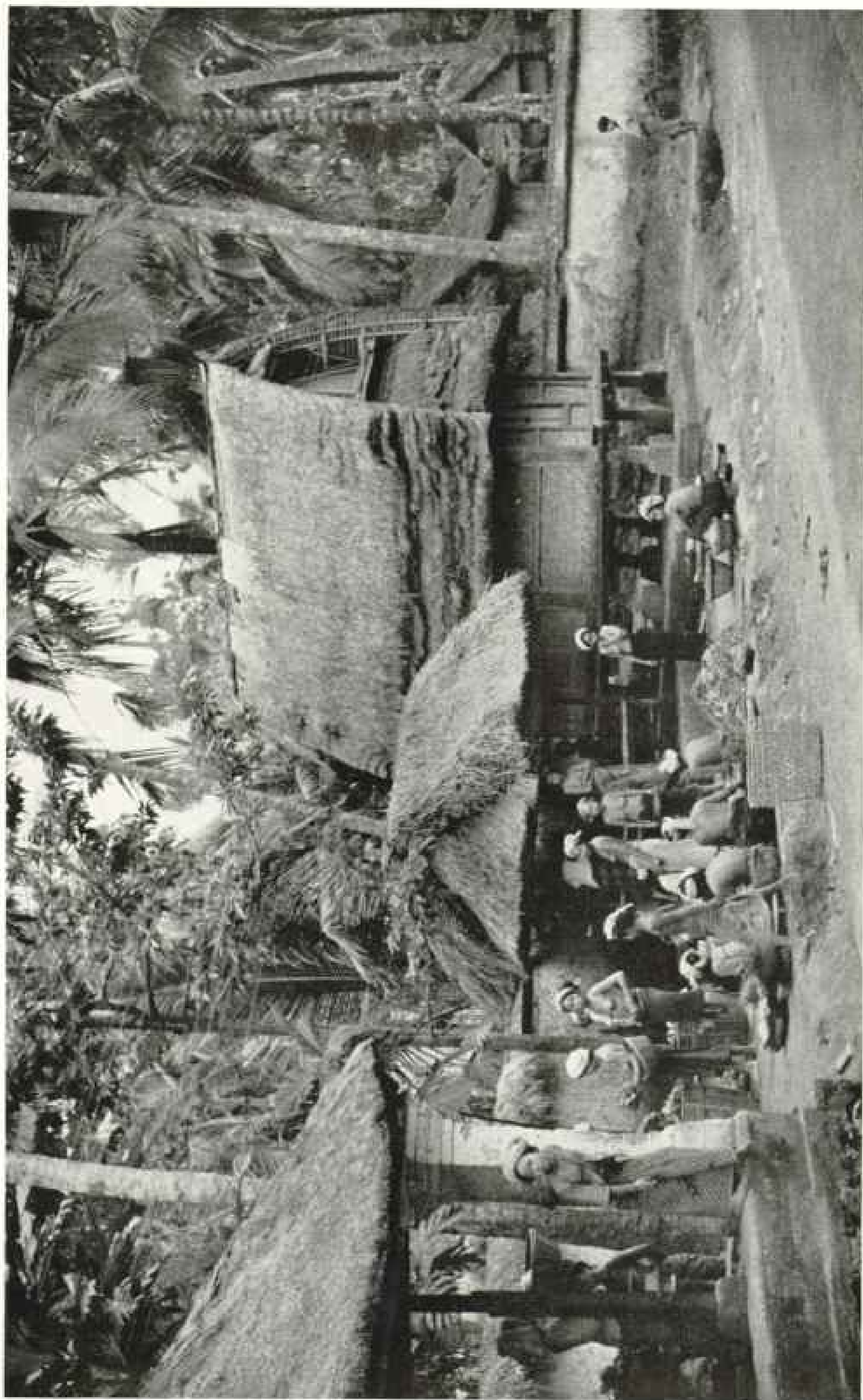
### IN BALINESE DANCING, EVERY LITTLE MOVEMENT HAS A MEANING

Bali's traditional dances combine subtle gestures and dramatic action in telling a story. Even the crook of a finger has significance. Shows are made up of music and dancing. Always there is orchestral accompaniment of rhythmic music, tinkling and tuneless to Western ears. Plays are staged at feasts and festivals both to entertain the audience and to propitiate gods and devils (Color Plate 1).



Photograph by Associated Screen News, Ltd.

"MOSAICS OF MIRRORS THAT REFLECT THE CLOUDS," BALI'S BIKED RICE FIELDS CARPET THE VALLEYS AND TERRACE THE MOUNTAINS. Every piece of irrigable land is devoted to growing the Balinese staff of life. Water is distributed by a system of canals, dams, bamboo pipes, and rock tunnels.



Photograph by Myron Owen Williams

NO HANDBAGS-HAMPER HAINANESE SHOPPERS; MONEY IS TUCKED IN SKIRTS OR SASHES AND THEY DO NOT USE LIPSTICK

Fruit, vegetables, spices, and dried fish are carried home in baskets balanced on the women's heads (page 315). All food is highly seasoned; meat is eaten only occasionally. Little money circulates; in many markets patrons trade by barter of one kind of product for another. The thatched building on stilts (right) is a rice storehouse.



Photograph by Philip D. Gendreau

TALLER THAN THEIR BEARERS ARE SOME OFFERINGS TO THE GODS

The kind and color of the gifts of food and flowers vary with the particular day and festival (Plate IV). To their devils, or evil spirits, the Balinese disdainfully throw messes of half-decayed food. Scavenging dogs devour these offerings. A woman going to the temple covers her breasts, often with a towel. A temple in Bali is made up of several pavilions and shrines within walled courts connected by stone or brick gates, sometimes of elaborate design.

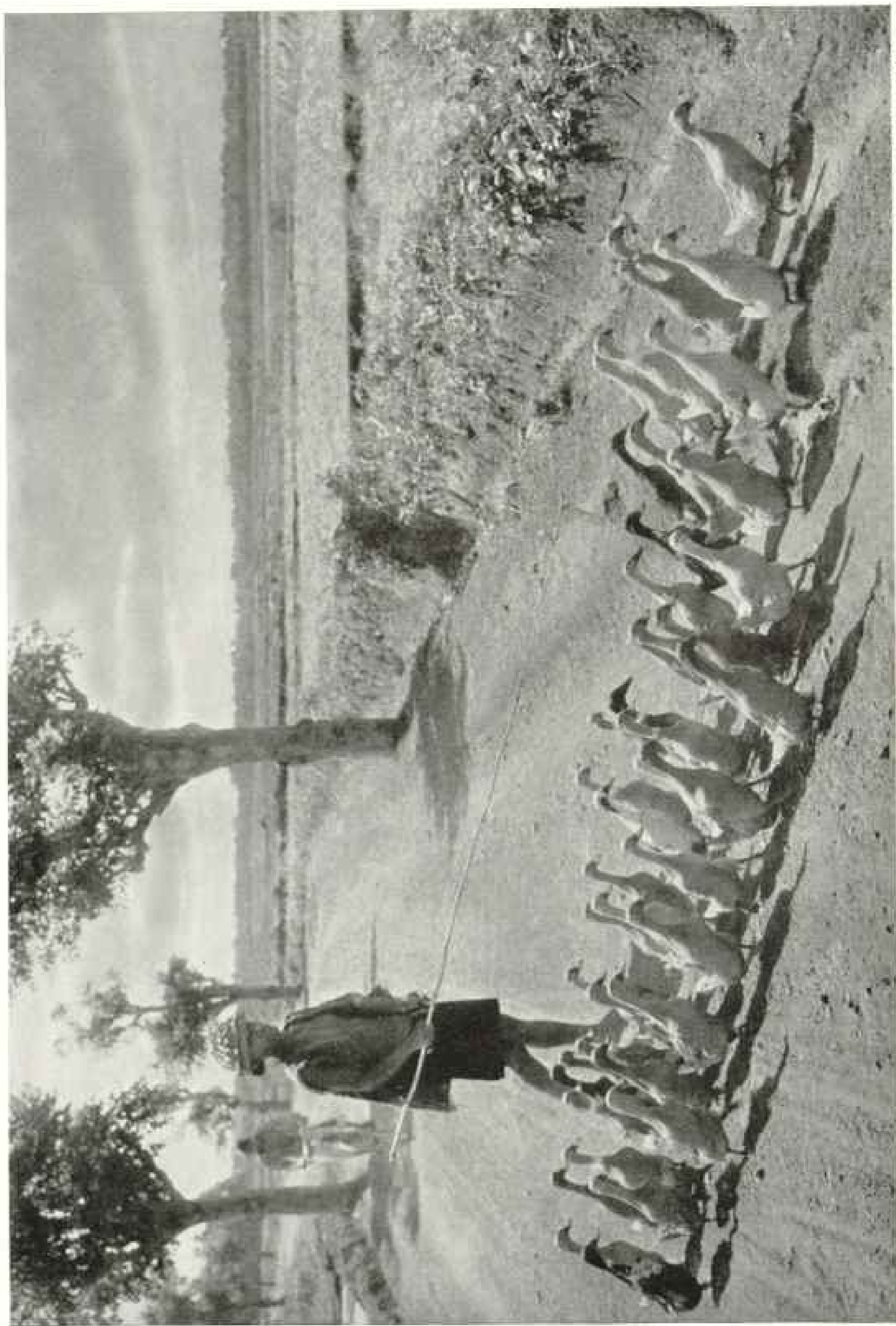


AROUND A TEMPLE BRAZIER, A FOREST OF WAVING FINGERS CASTS OUT DEVILS  
Participants in the Monkey Dance chant, screech, and gesticulate wildly.



Photographs © Globe, Paris

SUCCUMBING TO HYPNOTIC ECSTASY, MEN ARE "TRANSFORMED" INTO MONKEYS  
In such trance dances, Balinese actors become so frenzied that they sometimes attempt to stab themselves.



Photograph by Burton Holburn

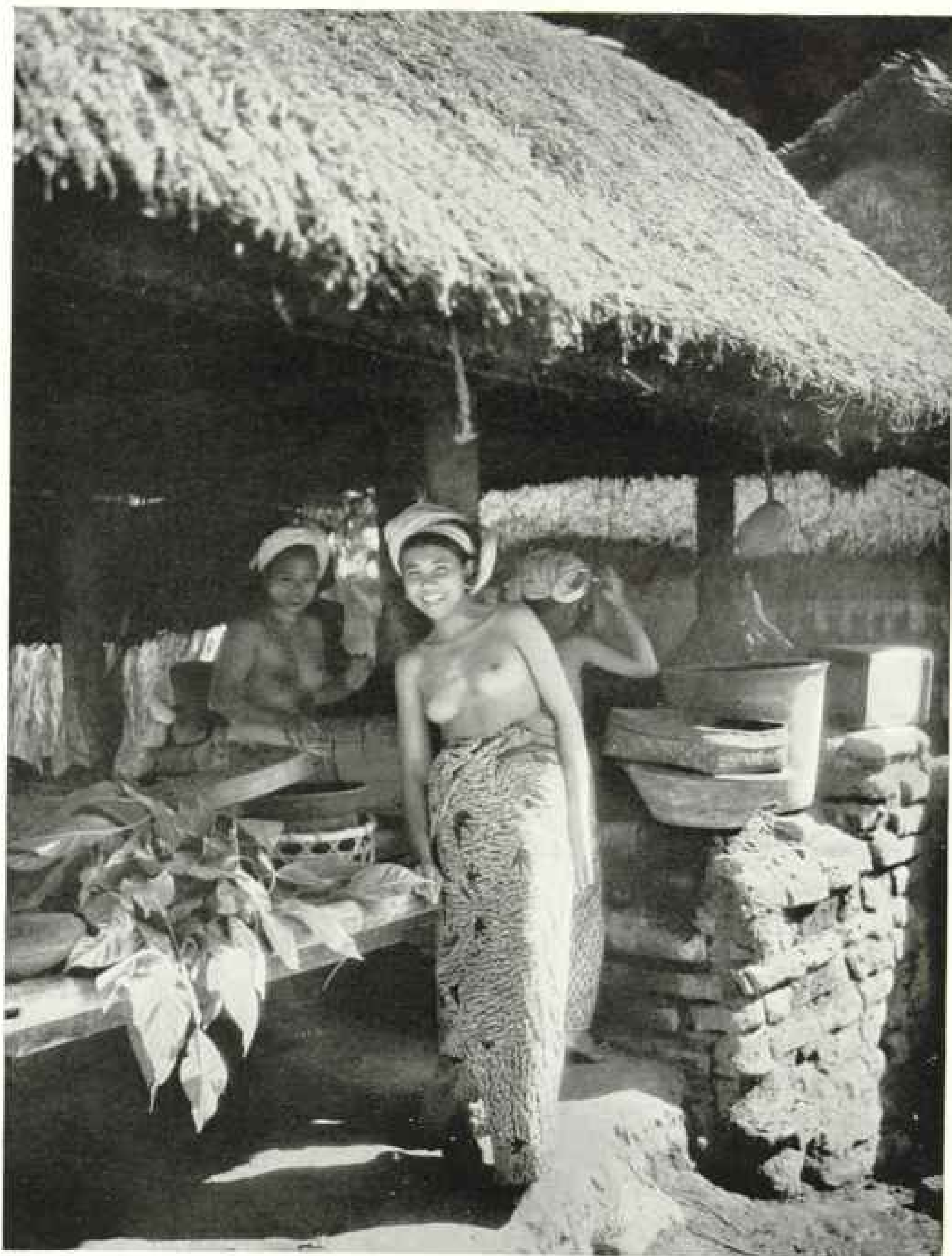
DISCIPLINED DUCKS FOLLOW A FLAG TIED TO A POLE, AND WILL STAY CLOSE TO IT EVEN WHEN THE GUARDIAN GOES AWAY



Photograph by Maynard Owen Williams

HARVESTED RICE IS BOUND IN FAT BUNCHES LIKE GIANTS' SLAVING BRUSHES





Photograph by Burton Holmes

"JOY OF LIVING" PERSONIFIED IS THE SMILING BALINESE WOMAN

Modest but friendly, the woman of Bali enjoys much independence. Income from sale of her pigs, fowls, weaving, or garden produce is hers "for keeps." She may sell all her worldly goods without her husband's permission, but he is not liable for debts she may incur. Here she wears the usual everyday dress—a skirt held at the waist by a bright-colored sash, because her legs must be concealed, and a headcloth. As in this shop or kitchen, many Balinese buildings, including some living and sleeping pavilions, have open sides.

# SPARROWS, TOWHEES, AND LONGSPURS

## These Happy Little Singers Make Merry in Field, Forest, and Desert Throughout North America

BY T. GILBERT PEARSON

*President Emeritus, National Association of Audubon Societies*

ONE sultry September-afternoon, when I was having difficulty holding the attention of my zoology students, I suddenly asked how they would like to put aside their notebooks and go with me to look for birds. Surprised, but willing, they arose and followed.

It was a quiet day; there was no sighing of the pines, or even a ripple along the tops of the broom sedge that extended across the field beyond the old rail fence. A blue haze hung along the horizon, as it often does in North Carolina during the autumn days. We advanced stealthily along a sandy road running through a cut-over woodland. Presently we heard from a near-by thicket a great commotion among the fallen leaves.

"A flock of quail," one whispered. "Or a big wild turkey," said another.

### A BIRD CALL DIFFICULT TO LOCATE

Then there came a sharp call, *cheewink, joree*, repeated many times. At once a discussion arose as to the direction from which the sounds were coming. Some thought they were from a bush in front of us; and others were just as sure that they were from our left, or our right.

Suddenly the feathered ventriloquist appeared, and with pounding, jerking flight dashed away and vanished. It was a red-eyed towhee. When I told the students that all the scratching they had heard had been made by that eight-and-one-third-inch bird, I saw on every face a look of incredulity. Murmurs of surprise were the only audible replies.

A towhee's personality dominates the thicket which he enters. His colors are striking and he is full of energy and industry. The call notes are clear and far-reaching. If you intrude too closely upon his privacy, he may briefly mount to some limb for a better view of you. If it is spring-time, you may even find him singing from some elevated perch (Color Plate I).

Ordinarily, this is not a bird of the door-

yard, although now and then hunger may force him to your feeding station. He lives, in part, upon ants, cockroaches, flies, boll weevils, and grasshoppers. In fact, he devours almost every kind of insect found on or near the ground. Seeds and grain also are staple articles of his diet, and sometimes gooseberries are eaten.

The towhee tribe is numerous, 24 kinds being recognized in North America. All but one belong to the genus called *Pipilo*, which contains five distinct species, three of which, in turn, are divided into 21 subspecies. The one species found east of the Mississippi River is the well-known red-eyed towhee. North America's five remaining species occupy western ranges from Alaska to Texas and northern Mexico.

One of these birds, the coloration of which remains the same throughout its entire range, and which therefore is not divided into subspecies, is the green-tailed towhee. I first made its acquaintance in northern California, and since then have seen it in many places; but I still find it difficult to think of it as a towhee, so much does it differ from representatives of the genus *Pipilo* I knew in former days.

Of all the kinds of towhees with which the far-western States are bountifully supplied, none is so well known as the somber-colored brown towhee. Not only is it an abundant species, but its habit of making itself at home in gardens and bushy lawns brings it constantly to human attention. It is a bird of town and wilderness, of the flat deserts and the wild arroyos, where few birds are more in evidence.

Furthermore, it may be seen throughout the year. When the dry season approaches and many other birds depart for the verdure of higher altitudes, the brown towhee stays in the parched chaparral. Most people know it, but not everyone calls it "towhee." Many speak of it as "brown bird" and others call it "bush bird." However, under one name or another, there are parts of California where



Photograph by William L. Finley and H. T. Bohman

TWO IN THE HAND AND ONE ON THE BUSH

Mr. William L. Finley made friends with this family of desert sparrows (Pl. II). The little fellow at right seems to feel he's being neglected, but the next mouthful will be his. Young birds react to the approach of food by stretching their necks, opening wide their mouths, and quivering. A newly fed bird makes less insistent demands, so the hungrier and more demonstrative nest mate gets fed next.

it is as well known as any other species of feathered life.

There are eight varieties of the species we call brown towhee, three of them inhabiting each its own particular region in California; three others are found in Baja California and one each in Oregon and Arizona, the latter ranging to Colorado. All closely resemble the California towhee (Plate II and page 362).

In the classification of birds the most numerous family is the Fringillidae, containing some 1,200 species and subspecies dis-

tributed throughout the world. In North America the representatives of this group are enrolled in three subfamilies, one of which, the Emberizinae, includes the towhees, sparrows, juncos, longspurs, and snow buntings—169 birds in all.

STOUT BEAKS  
CRUSH WEED  
SEEDS

In the color plates presented with this article are reproduced paintings of 32 of the more common members of this subfamily. All possess short, stout beaks well adapted for crushing seeds, of which they are voracious consumers. As destroyers of weed seeds, their value to farmers is incalculable.

To the field ornithologist, the mention of any section of the country is likely to bring to his

mind some bird that he has seen and enjoyed in that particular region. When I hear "Great Plains," my instant mental response is "lark bunting."

In western Nebraska, in Colorado, and in southern Saskatchewan, this striking white-winged, black bird has filled me with delight (Plate VIII). A male will rise from a rock or a slight elevation, fly upward for 15 or 20 feet and, after hovering for a moment, burst into a melody which ceases only when it sinks again to the earth.

The true sparrows include a large and

widely scattered assemblage of small birds with streaked plumage predominantly brown and gray. They are denizens of fields, old pastures, fence rows, and open groves. They gather their food almost entirely from the ground, and their colors render them inconspicuous, a fortunate protection when winged enemies are abroad.

There is a general superficial resemblance among most of the sparrows, and inexperienced bird observers often find difficulty in identifying them. However, not many species are met in any one neighborhood; therefore, with patience, one may learn to know at least the sparrows of the immediate locality. Although they are the plainest of all the feathered tribes, they are extremely interesting, and one soon discovers that each species possesses its individual traits.

Near my home in New York there is a college campus with an adjoining small park. Here every spring I find three kinds of sparrows. Early in April I begin to watch for the chipping sparrow, which is due to arrive any day after its winter sojourn in the southern States.

Generally my first knowledge of its presence is the sound of its voice. It cannot sing much of a song, only a monotonous *chippy-chippy-chippy*, repeated many times



Photograph by Alvin R. Cahn

WHILE BROODING HER YOUNG, A CHIPPING SPARROW IGNORES AN EGG THAT DIDN'T HATCH.

Either the neglected egg at her side was infertile or else it was allowed to get cold. Showing little fear of man, the eastern chipping sparrow often places its nest in gardens or beside lawns close to a road or house.

with virtually no variation. With my field glass I soon locate the little bird, his brownish-red cap and the white stripe over his eye easily identifying him (Plate V).

He and his mate will build a nest close by in the vine on a veranda or in some small evergreen, or perhaps out on a horizontal limb of a shade tree. I have never seen a nest except close to dwellings of man. Not once have I found one in heavy woodlands or forests.

The nest is constructed mainly of little twigs, grasses, and rootlets, and lined with hair. Where, in this age of automobiles,



Photograph by Arthur A. Allen

"SCREAM, SPATZY!" AN EVENING GROSBEAK ORDERS AWAY AN INTRUDER

Clinging by her claws to the feeding log, a greedy female house sparrow holds her ground—for the moment. Open warfare often ensues when birds of different species seek the same food.

the millions of chipping sparrows of the land find enough long hairs for their nest linings is indeed a mystery to me. These hairs sometimes become tangled about a sparrow, and, catching on a limb, cause tragedy to occur in the orchard.

The chipping sparrows stay near my home for seven months, and in November depart from the New York City region.

The second visitor that comes to my hunting grounds on the New York University campus is the song sparrow. Usually I find him by an old stone wall that borders a thicket on the slope. He is larger than the chipping sparrow; in fact, a typical specimen is fully six and a third inches in length, exceeding the measurement of the chippy by a full inch.

His name correctly describes one of his characteristics. I know few other birds so habitually given to song. He may be heard anywhere, day or night, singing even when on the wing. The song sparrow is not so tame as some other birds and, while it sometimes comes into your yard, it is ever alert and ready to dash to cover. Look for it along hedgerows and in bushes bordering streams in the fields.

When you startle a sparrow from the

grass and it flies away with a sharp chirp, watch its tail; for if the tail jerks and pounds as the bird flies you are most certainly looking at a song sparrow (Plate VI).

THE SONG SPARROW TRAVELS FAR

You might remember, too, that you are watching one of the great biological successes in the bird world. His range is enormous. Go to the Alaska Peninsula and you will find him; follow down the Pacific coast until you are among the semibarren hills of Baja California and in many places you will meet the song sparrow. Turn eastward through the great mountain chains, traverse central Canada all the way to Nova Scotia, go through the United States anywhere as far south as northern South Carolina, and in nearly every suitable region of this vast domain the song sparrow lives, rears his young, and sings to the delight of man.

It does not breed in the far-southern States, but even there you may find it in winter, flitting and singing in the brushy red gullies of Georgia, in the palmetto thickets of Florida, and along the hyacinth-choked bayous of Louisiana.

Throughout its range 26 subspecies have

developed under Nature's magic laws, but in any garden the song sparrow that you find is just the same alert, vivacious singer as any other song sparrow, although found half a continent away.

A third visitor that I welcome near my home every spring is the field sparrow. Sometimes I see him on mild days late in March before the chippy has arrived. He comes early, and in autumn seems reluctant to leave; some individuals even pass the winter on Long Island. He is larger than the chipping sparrow, and longer by a quarter of an inch (Plate V).

When you find this bird in your orchard, do not confuse it with the chipping sparrow. Notice that its cheeks are gray, while the other bird has a clear white stripe over its eye. The field sparrow has a real song, *che-wee, che-wee, che-wee*, followed by a trill, while the chipping sparrow sings only *chippy* with many rapid reiterations all strung closely together.

On the western shore of Lake Champlain there is a large sheep pasture, where spreading junipers grow, and a cedar swamp with ferns and haneberries. Here, in June, I sometimes go to listen to the white-throated sparrows sing (Plate VII), and to renew my search for one of their nests.

The song I hear is clear and pleasing, carrying far across the rocky pasture. It begins with two or three measured, high-pitched notes, followed by a quavering trill which diminishes until I do not always catch the ending. New Englanders say that the bird sings *old Sam Peabody, Peabody, Peabody*; but men from the other side of the St. Lawrence stoutly aver that what it says is *sweet, sweet, Canada, Canada, Canada*.

#### WHITE-THROAT HIDES ITS NEST

I have been very anxious to find its nest, which, I have read, is "sunk to the rim in moss or earth, and so cunningly concealed by surrounding and overhanging vegetation that it is difficult to find."

In this pasture, whenever I see a pair of white-throats exhibiting uneasiness at my presence, I begin a systematic hunt for their nest. I crawl over many square rods of earth, peering under every little bush and pushing aside the tops of every cluster of thick grass.

All this effort is vain, however, for never, as yet, have I been able to discover the hidden treasures of the white-throat and his mate. Before the goldenrod has reached

its glory, I have heard the young ones calling in the thicket where the haneberries are turning red, and I have known that they are being fed not far away from the nest which I have so vainly sought.

Hedgerows, bushes, and the brushy margins of woodlands are their favorite haunts, and often they are associated with other sparrows. They are a delight to have about the home, for they will visit the feeding station and often they will sing.

After a serious illness in the early winter of 1926, I was very weak, but my kind doctor allowed me to go out from the sanitarium every morning and trudge slowly about the Maryland fields. I rested on stumps, munching withered turnips and persimmons touched by the frost, but chiefly I watched for birds.

My favorite seat was in a patch of stalwart weeds bordering an extensive thicket. There were always birds about, and some of them often came very near.

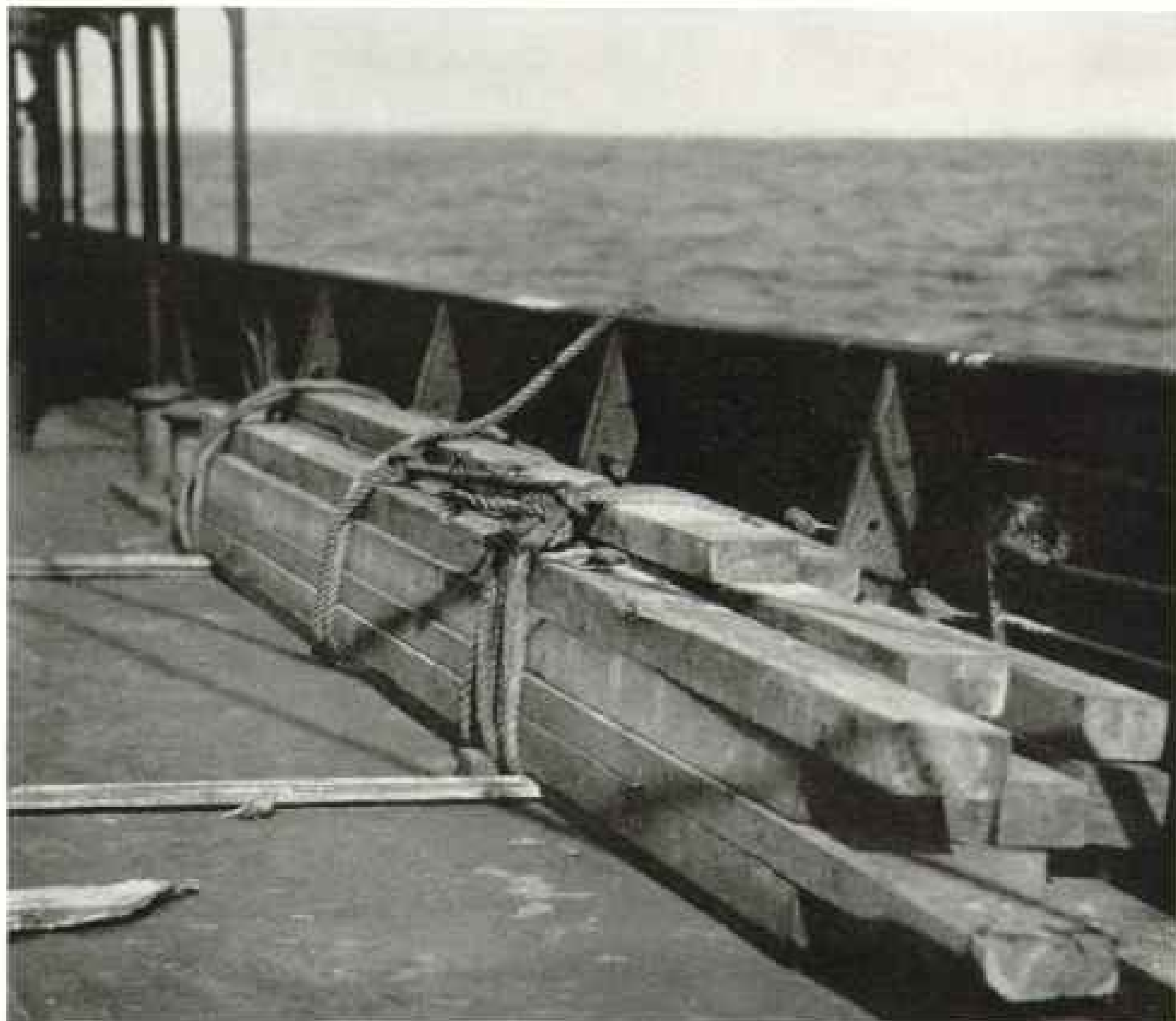
Thinking of this place recalls my most vivid memories of close acquaintance with tree sparrows. They were winter visitors, maybe from Labrador or perhaps from regions beyond the icy waters of Great Slave Lake. Once seen, these birds are easily remembered. They remind one of chipping sparrows, but the brown on the back is of a redder hue, and in the very center of the grayish-white breast there is a clearly marked spot of black (Plate V).

#### TREE SPARROWS ARE HAPPY SINGERS

Where I sat among the weeds those mild winter days, I caught many glimpses of the tree sparrows as they fed all around me. Now and then one would mount to the top of some weed stalk to gather the seeds not yet fallen to the earth, and at times some would fly up to rest on the limbs along the edge of the thicket. When not alarmed, they chirped among themselves, their little twitters and cheerful notes producing a subdued melody that spoke of contentment and happiness.

The next summer I found the western tree sparrow in the land where it mates and sings and builds its nest. It sings much as a canary sings, but with less volume and a noticeable absence of assertive boldness in its notes. The birds were not in flocks, but in scattered pairs.

To me the tree sparrow makes a strong appeal, whether seen in an old field where the broom sedge grows and the sumac and the persimmon ripen their fruit, or up near



Photograph by Ernest G. Holt

HITCH-HIKING JUNCOS SETTLE ON A SOUTHBOUND SHIP 150 MILES FROM LAND

Apparently blown out over the Atlantic during their fall migration, these neat, gray-coated travelers appeared on the deck of the *Fiborg*. The ship was bound for summery Caribbean ports far south of the junco's usual winter home. One bird hops about the deck (left foreground), while six others may be counted on the lumber pile.

the Arctic Circle where scattered bushes and evergreens adorn those great hills that bolster the bulk of Mount McKinley.

There are many kinds of sparrows in the world. In North America alone there are no less than 11 genera represented by 37 species, many of which present climatic variations of plumage. We may say that 119 kinds of sparrows are found on this continent north of Mexico.

The list does not include the house sparrow (*Passer domesticus*) of western Europe, which has so amply proved its amazing adaptability to new environment by readily becoming acclimated in this as well as in many other countries where it has been introduced.

This so-called "English sparrow" is classified as one of the weaver finches, which places it in a different family from

the Fringillidae to which the North American sparrows belong.

Sparrows are all small; for example, the tree sparrow weighs about seven-tenths of an ounce, and it takes a lusty towhee to tip the scales at an ounce and a half.

As a rule, all birds of this group fly very well, but they do not take such long migratory journeys as do the warblers, many of which annually go for the winter to northern or central South America.

In their tails there are 12 rectrices instead of 10 as in the powerful-flying swifts, but all are well developed.

A bird often associated with the roadside sparrows is the slate-colored junco, generally, in the South, called "snowbird." Juncos seem especially fond of the companionship of the white-throats. They feed together in the same weed patches;



Photograph by Acron

## "UNTO THE LEAST OF THESE"

A New York policeman gives a drink to a house sparrow overcome by heat. Titled "None So Small," this photograph by Victor Twyman of *The Daily News* won second prize in a national snapshot contest. Strangely, the familiar "English sparrow" really belongs to the weaver bird family and not to the sparrow group. Introduced 89 years ago at Brooklyn, New York, as a destroyer of insect pests, it soon became the noisiest citizen of every American city from Maine to California.

dash together to the same cover when alarmed, and when in early spring the white-throat begins to sing lustily, the juncos join in as best they can with their small, modest voices.

## DISTANCES JUNCOS TRAVEL ARE AMAZING.

I have found these juncos, incubating eggs or caring for young, at Blowing Rock and on Grandfather Mountain in North Carolina, and in winter have seen them almost as far south as the Gulf of Mexico.

On another occasion, in central Alaska, 3,500 miles from the Carolina mountains, I came upon juncos feeding their young. On foot I had left Dawson, where in all its plainness and haunting memories of golden romance it lies by the mouth of Klondike River, and followed a trail for miles over

the hills toward an Indian village on the right bank of the Yukon.

The place seemed so far removed from my usual haunts that I was far from expecting to see a familiar friend. Of course I knew that many of my bird acquaintances travel far, but here was wilderness where I was looking for new and little-known species.

Suddenly close at hand I heard the sharp metallic, kissing click of a slate-colored junco. There were two of them, one carrying food for its young. What a tremendous part of North America some of these birds cover in their migrations twice each year—and I was still nearly 700 miles from the junco's extreme northwestern summer range where Point Barrow looks to the waters of the Arctic Ocean!



### Red-eyed Towhee

(*Pipilo erythrophthalmus erythrophthalmus*)

Average Length, Eight and One-third Inches

This bird has been known to naturalists since Catesby published an account of it in 1758. It breeds in the Transition and Upper Austral Zones in most of the region from southeastern Saskatchewan and southeastern Nebraska eastward to southern Maine and northern Georgia. It winters from eastern Nebraska and the Ohio and Potomac Valleys to Texas and central Florida.

It is a thicket-loving species, being especially fond of cutover land where sprouts and young saplings abound, or of scrubby lands with patches of brush and briars. Often it frequents hedges and old walls or rail fences bordered with brush and vines.

In the mountains of North Carolina, years ago, there arose complaints, probably ill-founded, that the towhee made a business of pulling up newly planted corn. Therefore the State Legislature decided to place its name on the list of birds having no legal protection. By error, however, it was listed among the game birds; and for 25 years thereafter the towhee was officially a game bird in that State. Not until 1928 was the statute corrected and the handsome bird given the legal status it so justly deserves.

Towhees are not gregarious by nature and rarely are many of them seen together, although at times several may collect where food conditions are particularly favorable. Of course, in some regions they are more plentiful than in others. Standing on the scrubby slopes of Blue Hill, Massachusetts, I counted one day eight male towhees singing within my hearing, but to me this was a most unusual experience.

The nest of the towhee is built on the ground or in low bushes or brush piles. It is constructed of twigs, weed stems, leaves, and strips of bark, all skillfully woven together and finished with a lining of grass or of hair.

Three to five spotted eggs are laid. When a female is sitting on her nest, her colors blend so well with the surroundings that one may come within a few feet without noticing her presence. At times the male shares with his mate the duties of incubation, and both exhibit the greatest solicitude for the young when danger threatens.

The towhee is one of nearly 200 varieties of birds that the parasitic cowbird depends upon to hatch her eggs and rear her young. As many as six cowbird eggs have been found in one towhee's nest.

In 1871 Coues reported the discovery that the towhee breeding in central Florida has white eyes, and that only two instead of three of the outer tail feathers are tipped with white. Thus it was proclaimed that the towhee of eastern North America consists of two climatic varieties, one of which henceforward was to

be known as the white-eyed towhee (*P. e. alleni*).

Howell in 1913 reported still another subspecies, the Alabama towhee (*P. e. canaster*) from Alabama and Georgia. In general, all these birds bear such a close resemblance that at a little distance only the most experienced students can distinguish among them.

### Spurred Towhee

(*Pipilo maculatus montanus*)

Average Length, Seven and Three-quarters Inches

In the three southwestern Provinces of Canada and in the United States, westward of a line running through eastern Colorado and down into Mexico, there is found a bird that closely resembles the common towhee of the eastern States. The chief difference is that there is more white on the tail and that there are white spots on the back.

The specimens first described in 1831 are now called arctic towhees. Eighteen years later it was learned that the spotted-backed towhee found in southwestern British Columbia and western Oregon was slightly different, and the Oregon towhee was described.

In 1858 a third climatic variety came to light. Thirty-three years later another subdivision was recognized. Today we have 10 subspecies of this one bird.

Their names and the dates of their recognition by scientists are as follows:

Arctic towhee—1831, Oregon towhee—1849, San Diego towhee—1858, large-billed towhee—1891, San Clemente towhee—1897, San Francisco towhee—1900, spurred towhee—1905, Nevada towhee—1911, Sacramento towhee—1913, Cape Colnett towhee—1926.

These birds are so nearly alike that the average observer in the field could scarcely be expected to distinguish among them. There seems to be little known difference in their habits and almost any basic fact that is stated regarding the habits of the spurred towhee may be taken to apply with equal truthfulness to all of the others.

### Texas Sparrow

(*Arremonops rufivirgatus rufivirgatus*)

Average Length, Six Inches

For a long time after this bird was described to science in 1851, it was known as the "green finch." The olive-green colors of the upper parts, including wings and tail, do not readily suggest a sparrow, for generally the sparrows run strongly to shades of gray and brown.

It is an inhabitant of the chaparral regions of lower Texas, and southward into Tamaulipas, Nuevo Leon, and San Luis Potosí, Mexico. The nest of twigs, weed stems, bark, grasses, and sometimes hair, is built in low bushes. The eggs, usually four in number, are white.

SPARROWS, TOWHEES, AND LONGSPURS



*Allan Brooks*

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Painting by Allan Brooks

TOWHEES ARE HANDSOME SONGSTERS OF THE BRUSHLANDS

They are often heard but less seldom seen. The brisk, bustling **Red-eyed Towhee** (male and his mate, right and left, above) is fully at rest only when pouring out its pleasant song. This bird's other common name, "chewink," is derived from its call note. Of even more striking appearance is the **Spurred Towhee** (male and a young bird, center pair), a far-wester. Chaparral thickets of the Southwest are home to the inconspicuous **Texas Sparrow** (lower right), once known as the "green finch."

### Green-tailed Towhee

(*Oberholseria chlorura*)

Average Length, Six and Three-quarters Inches

Deposited one morning at a small railway station in California with three hours to wait before the next train, I obtained a horse and rode off among the hills in search of birds new to my experience. In the clearing mist the sun was lighting up the dripping foliage on every side, an ideal condition to expect activity to begin among the birds, and it was not long before my hopes were realized.

I heard a *wex*, *wex*, and looking around at once discovered, in the top of a small tree, the author of the notes. Its size and its grayish-yellow color suggested a greatly overgrown warbler, but its throat was white like that of some of the sparrows, and it wore a very distinct cap of reddish brown.

Eagerly I studied the tail, but my binoculars revealed only dark yellowish feathers. In the angle of light which played upon it, I could detect no green, but there was no mistaking the bird; it was indeed a green-tailed towhee.

Neither on this occasion, nor later when I came to know it better, did its colors or its movements ever completely satisfy me that it should be called a towhee, with which I had so long been familiar. I have always felt like calling it the red-capped sparrow-warbler, or some other such descriptive name.

The familiar voice of this towhee is often heard even when its owner is well hidden behind a screen of desert shrubbery. With much flashing of its green tail, this trim, glossy-coated beauty scratches busily among the brush. Seemingly, it is very proud of the red feathers of its cap, for it has a way of raising these when faced by an intruder.

The green-tail places its nest on or near the ground in chaparral, mesquite, sagebrush or cactus. The nest is made of grass, small twigs, and shreds of bark and is lined with fine grass or, occasionally, with horsehair.

In summer it is found from Oregon to southern California and eastward into western Texas. The winters are passed along the southern fringe of its summer range and southward in Mexico to Cape San Lucas and Guanajuato.

### Cañon Towhee

(*Pipilo fuscus mesoleucus*)

Average Length, Eight and One-half Inches

This bird is closely allied to the California towhee, but the rich brown cap and sparsely spotted breast make its identification easy. It is found from southeastern Colorado and western Arizona to western Texas and northern Sonora. Like other towhees, it is a brush-loving species and builds its nest indifferently in mesquite trees, in cholla cactus, or among the daggers of the yucca, but rarely at a distance of more than ten feet from the ground.

In their selection of food, the brown towhees

are omnivorous. Any insect that comes near is quickly snapped up and swallowed. Seeds of many kinds are eaten.

### California Towhee

(*Pipilo fuscus crissalis*)

Average Length, Nine Inches

The eight varieties of the "brown towhee" closely resemble the California, which is abundant in western California from Monterey to the Mexican border and eastward to the San Joaquin Valley (page 355).

It not only haunts bushy places in the wilderness but also comes to city lawns and parks. As an excuse for a song it gives vent to a series of squeaky notes which do not rank high as music. A fluffy, friendly bird, it darts about in awkward bobbing fashion.

### Desert Sparrow

(*Amphispiza bilineata deserticola*)

Average Length, Five Inches

I recall enjoying this handsome songster in southern Arizona, where I found it quite common.

Its songs may be heard on all sides. One who works his way through the thorny brush, or climbs the hills where the greasewood and squaw-grass flourish, will probably not long be out of sight or sound of this denizen of the desert wastes. It lives in the region where the scaled quail, the verdin, and the road-runner dwell. No other desert bird is more solicitous of its nest and young than is the desert sparrow. When danger approaches, the excitement of the parents becomes intense. They call continually and fly excitedly from bush to bush, the male sometimes bursting into song.

Desert sparrows breed generally farther north, as in Nevada, Utah, and Colorado. However, some are found in summer also in California and western Texas. They winter largely in Mexico.

### Northern Sage Sparrow

(*Amphispiza nevadensis nevadensis*)

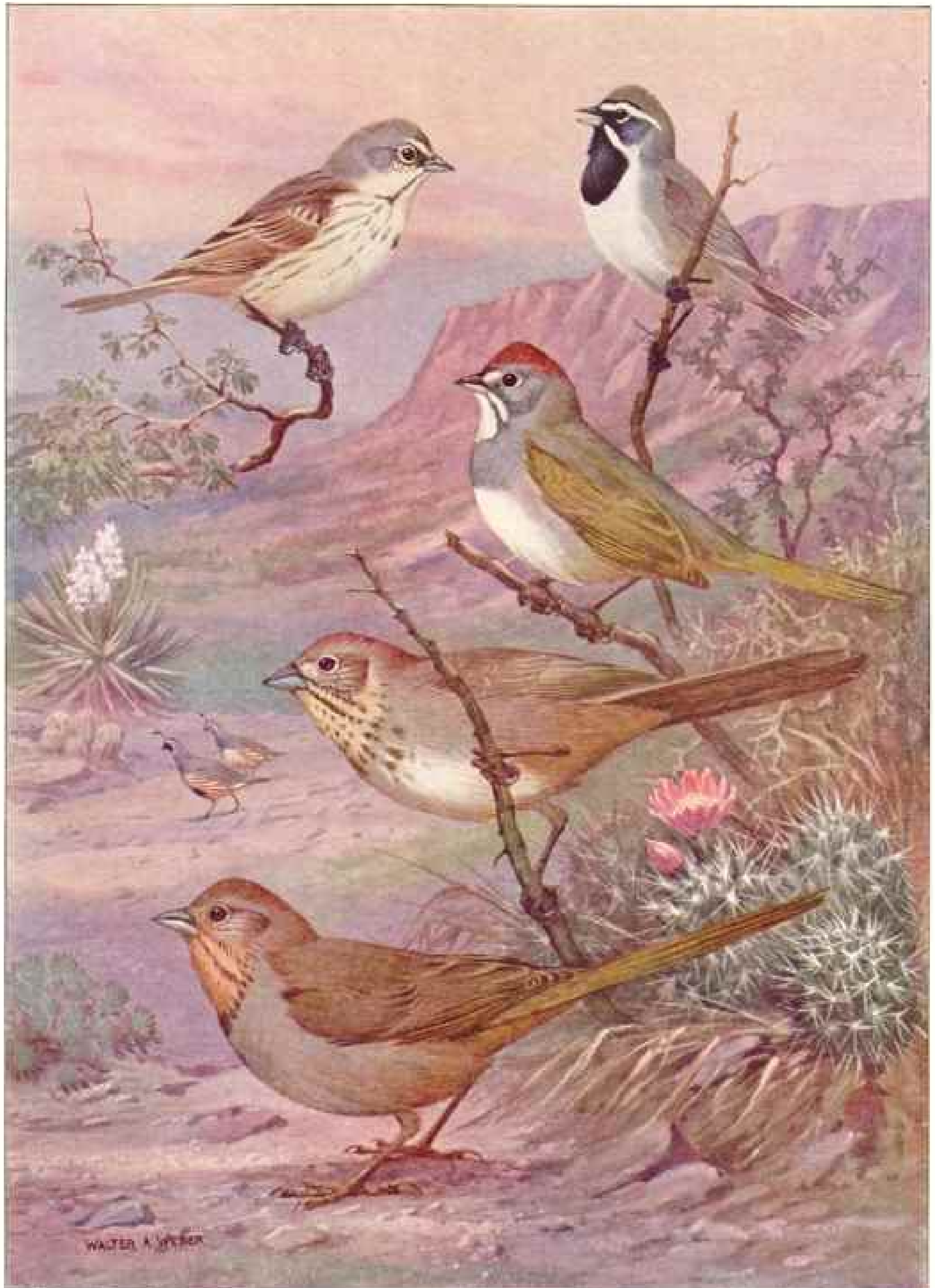
Average Length, Six Inches

Great expanses of sagebrush, creosote, and general chaparral, from Washington southward through California and Texas, and for hundreds of miles over the plateau of Mexico, form the dwelling place of the northern sage sparrow and its fellow subspecies, the California sage sparrow (*A. n. canescens*).

It is distinctly a bird of sagebrush, feeding in its shadow, building its nest in part of sagebrush twigs and placing it among the stems of the sagebrush. The grayish tones and faint streakings of its plumage blend well with the surrounding vegetation.

It is, during most of the year, a very silent bird. Only in spring and early summer does its song show the gayer and more joyous side of its nature. Then far and wide the sagebrush rings with music of innumerable sage sparrows.

SPARROWS, TOWHEES, AND LONGSPURS



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Painting by Walter A. Weber

MODEST PLUMAGE OF WESTERN TOWHEES BLENDS WITH THEIR ARID RANGE

Amid mesquite and cactus dwells the black-billed **Desert Sparrow** (upper right), which shares its south-western range with quail (Gambel's variety, left center) and road-runner. The reddish cap feathers of the **Green-tailed Towhee** (second from top, right) literally stand on end when the bird is surprised by an intruder. The **California** and **Cañon Towhees** (bottom and next to bottom, respectively) are subspecies of the bird popularly known as the "brown towhee." Upper left is the **Northern Sage Sparrow**.

### Ipswich Sparrow

(*Passerculus princeps*)

Average Length, Six and One-quarter Inches

On December 4, 1868, C. J. Maynard while walking among the sand dunes of Ipswich, Massachusetts, shot a bird hitherto unknown. It was named Ipswich sparrow.

No one knew where it came from until May, 1894, when Dr. Jonathan Dwight found the species breeding on Sable Island, Nova Scotia. Its nest has not been found elsewhere. The bird winters along the beaches of the Atlantic coast as far south as North Carolina.

### Eastern Henslow's Sparrow

(*Passerherbulus henslowi surranni*)

Average Length, Five Inches

This modest bird is a retiring little inhabitant of unwooded country from New York and New Hampshire southward. In summer its favorite habitat is wet meadows, where, hidden in grass or weeds early in June, one may find its nest with the four or five dainty spotted eggs.

It passes the winter in the southeastern States, going as far south as Florida and frequenting abandoned fields grown up in broom sedge. Like the grasshopper sparrow, it is very skillful in keeping out of sight.

Eastern Henslow's sparrows begin to reach the Washington region in spring about April 10. Here they are locally common summer residents. After the young are hatched and reared, the augmented families linger on through much of October before joining the last of those hosts of birds which for weeks have been hurrying southward every night.

The western Henslow's sparrow (*P. h. henslowi*) breeds from Ontario and South Dakota to Ohio and northern Texas. It winters from southern Texas to western Florida.

### Savannah Sparrow

(*Passerculus sandwichensis savanna*)

Average Length, Five and One-half Inches

The Savannah sparrow is another of those small species that breed over a surprisingly large part of North America.

Its summer range extends from arctic Alaska to Labrador and southward to New Jersey, Indiana, and northern New Mexico. In winter it spreads over the country from New Jersey, Indiana, and California to Guatemala.

At present it is classified into six closely related subspecies. The eastern Savannah sparrow breeds from northern Manitoba and northern Quebec southward to Iowa and southern New Jersey, and winters from the southern part of its summer range to Cuba, the Gulf coast, and northeastern Mexico. It is abundant in many regions, frequenting meadows, especially damp ones where long grass abounds.

About one-half of its food consists of seeds, the remainder of insects. When startled, it

flies low over the grass for a distance, then darts suddenly out of sight. Its song, usually delivered from a weed stalk or low bush, consists of a brief trill, musical but weak.

### Eastern Grasshopper Sparrow

(*Ammodramus sennariarum australis*)

Average Length, Five and One-third Inches

This sparrow's song is a splendid imitation of the buzzing sound produced by a grasshopper. It lives in grass and weed patches, mounting a weed stalk now and then for seeds or flying to the top of a fence to sing.

When taking flight, it flutters wren-fashion for a short distance and then, as if completely exhausted, drops quickly into cover again.

The nest, made on the ground, is skillfully hidden in a slight depression. This the bird approaches and leaves by slipping quietly through the grass.

In appearance it is much like the Savannah, but its breast is unstreaked and there is yellow at the bend of the wing. The grasshopper sparrow is distinctly a ground bird, for it not only nests and feeds on the ground, but usually sings on the ground, and it is supposed always to sleep on the ground.

The eastern grasshopper sparrow inhabits much of the territory east of the Great Plains from southern Wisconsin, southern Ontario, and southern New Hampshire southward to South Carolina, Georgia, and Alabama. It winters from Illinois and North Carolina to Cuba, Yucatán, and Guatemala.

Four subspecies are recognized. There is a western grasshopper sparrow (*A. s. bimaculatus*) found from Minnesota to California, and a Florida grasshopper sparrow (*A. s. floridana*) of the Kissimmee Prairie.

### Sharp-tailed Sparrow

(*Ammodramus caudacuta caudacuta*)

Average Length, Five and Three-quarters Inches

The sharp-tailed sparrow is one of several species of sparrows inhabiting the salt marshes of the Atlantic coast of the United States. It breeds from New Hampshire to Virginia and winters from New Jersey to northern Florida. In many localities it is very abundant.

When found, the birds seek to escape observation by running along the ground, as a rule being very reluctant to take wing.

As the bird is continually creeping and running through the coarse grass of the beaches, its feathers are subjected to great wear. Partially to offset this, it acquires two new sets of feathers each year. The molt that occurs just before the beginning of the nesting season results in an almost complete change of plumage, while that which takes place at the end of the breeding period produces an entirely new suit of feathers.

The nest is built in tussocks of grass or dried seaweed above the usual high-water mark.

SPARROWS, TOWHEES, AND LONGSPURS



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Painting by Walter A. Welch

SPARROWS BELONG TO THE MOST NUMEROUS OF ALL BIRD FAMILIES

The sparrows form a branch of the great finch family, which is represented by about 300 varieties in the United States and 1,200 throughout the world. When surprised, the **Sharp-tailed Sparrow** of the Atlantic coast (lower left) runs for cover among the coarse reeds. In wet meadows live the **Eastern Savannah Sparrow** (left center) and the **Eastern Henslow's Sparrow** (upper left). A grasshopperlike buzzing song has named the **Eastern Grasshopper Sparrow** (upper right). Lower right is the **Ipswich Sparrow**.

### Eastern Vesper Sparrow

(*Pooecetes gramineus gramineus*)

Average Length, Six and One-quarter Inches

The eastern vesper sparrow is a bird of the fields and dry meadows. It breeds from Minnesota, Ontario, and Nova Scotia south to Nebraska and North Carolina, and winters from the southern part of its summer range to the Gulf of Mexico. The western vesper sparrow (*P. g. confinis*) ranges from British Columbia to California and Texas.

This rather pale, streaked sparrow is often found along country roadways. To many its song is even sweeter than that produced by the song sparrow, especially late in the evening, when to some ears its melody is the most inspiring music to be heard in the fields.

Mr. John Burroughs was especially attached to this bird. He enlarged on the exquisite beauty of its evening song and in the 1880's was in part responsible for the adoption of the name "vesper" sparrow. Before this it bore the name "grass finch" and sometimes "hay-winged hunting." Personally, I have never considered the evening song of this bird superior to the music it renders at other times. The natural hush of evening and the absence of distracting artificial sounds at the close of the day make all bird songs stand out more clearly. But to me there is no essential difference between the daytime and evening notes of this modest, sprightly vocalist.

Although chiefly a bird of the ground, the vesper sparrow frequently perches on fences, telephone wires, and the limbs of trees. It sings from such elevations, and, in the mating season, often flies aloft and pours out its music.

During nesting time it rarely is seen in marshy ground because it builds the cradle for its eggs and young in dry upland fields. The nest is sunk in some slight depression in the earth, often in a grass clump or the shelter of a weed or beside a clod. It is made entirely of dried grasses, rootlets, inner bark, and hair. The eggs are four or five in number and are marked with brown dots and splashes. The principal breeding season is from mid-April until the middle of June.

### Western Lark Sparrow

(*Chondestes grammacus strigatus*)

Average Length, Six and One-half Inches

There is many a dusty road in the West where one may come upon a lark sparrow that prefers to run ahead of one rather than take flight. The white and chestnut stripes on its head make it by far the most conspicuously marked ground bird of the region.

Even as one watches, it may leap into the air to seize a passing insect, or it may mount some boulder or a convenient fence post and entertain the listener with a song of unusual sweetness and charm. Its song consists of

numerous clear, rich notes, intermingled with trills. In autumn perhaps a score or more of these birds may burst into song from a fence.

The nest of grasses, rootlets, and perhaps long hairs is secreted on the ground or in a low bush. The eggs are three to five in number, and the white or pinkish shell is spotted and scrawled with black and purple markings.

There are two forms of this bird, one being the eastern lark sparrow (*C. g. grammacus*), which inhabits the country from western Minnesota and southern Ontario southward to Alabama and Louisiana. Eastward it is found as far as western Pennsylvania and Maryland. It winters as far south as eastern Mexico.

The western lark sparrow breeds from British Columbia and Saskatchewan southward into northern Mexico. It passes the winter from northern California and southern Texas southward to Guatemala.

In spring the male often entertains his mate while singing by dancing about with many fluttering gestures, during which his white-rimmed tail is widely spread.

### Rufous-winged Sparrow

(*Aimophila carpalis*)

Average Length, Five and One-Third Inches

Arizona and northwestern Mexico are regarded as the range of the rufous-winged sparrow. Good field marks to watch for are the rufous wing patches and the rufous stripes on the head. The bird often associates with other sparrows, especially the western chipping sparrow, the general habits of which are similar. It is found up mountain slopes to an elevation of 4,000 feet.

### Scott's Sparrow

(*Aimophila ruficeps scotti*)

Average Length, Five and One-half Inches

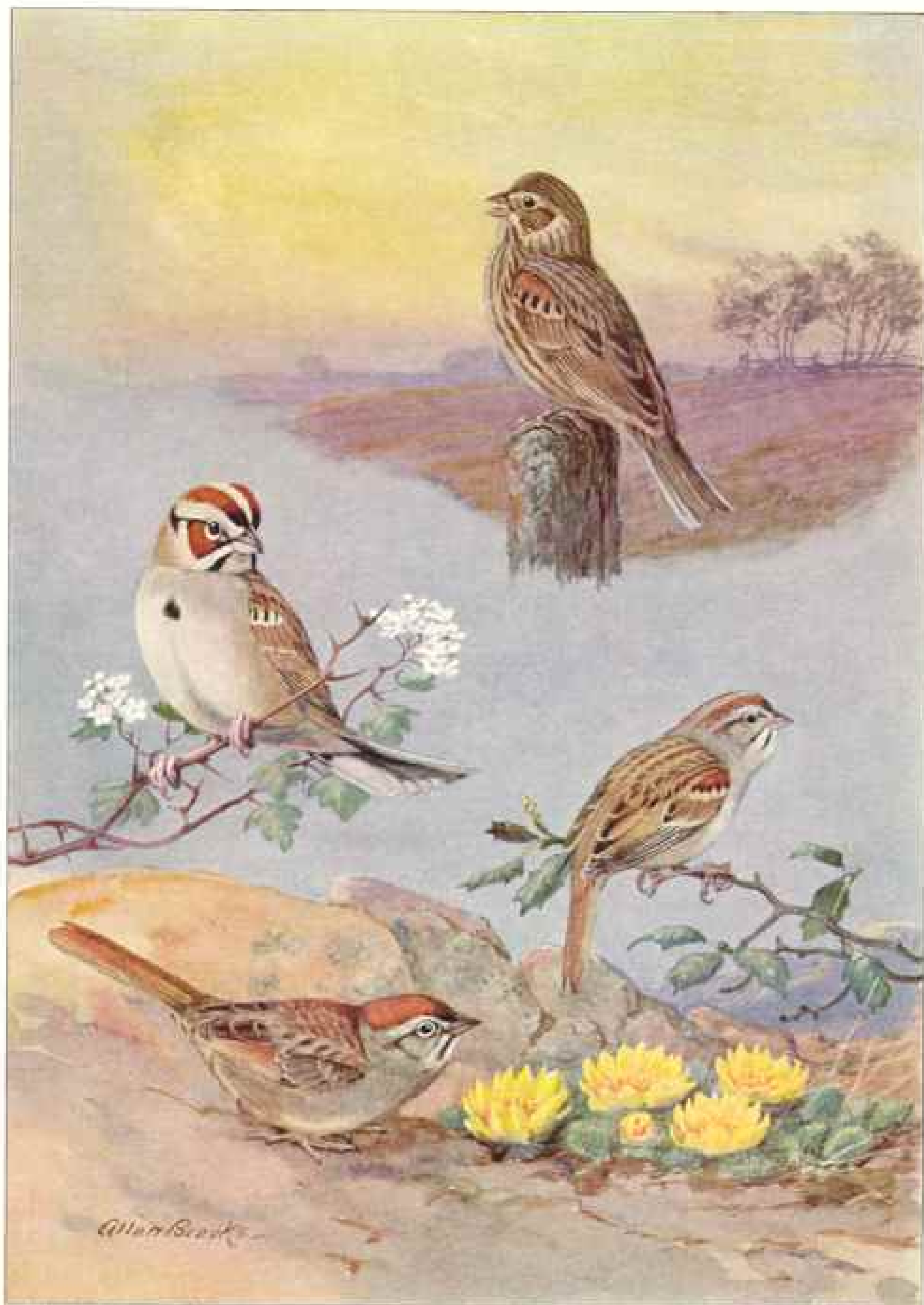
This bird might well be called the "ground-creeping sparrow." Its unhurried movement as it passes from sight behind a bush does not suggest a creature stricken with terror because of an observer's presence, but rather it reveals a dainty little feathered object exhibiting a nonchalance that is most charming. It prefers thus casually to pass from sight rather than depart in panic on swiftly beating wings.

This species is classified as one of the eight subspecies of a far-western bird known as the rufous-crowned sparrow.

From southern Colorado it ranges through much of Arizona, New Mexico, and southwestern Texas to Durango, Mexico, and is common in many of the little mountain ranges that one finds in that portion of America. In summer it is sometimes found up to an altitude of 10,000 feet. It haunts hillsides and gullies and places where small bushes or cacti abound.

In its nest, on or near the ground, three to five pale-bluish unspotted eggs are laid.

SPARROWS, TOWHEES, AND LONGSPURS



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THE VESPER SPARROW'S PLAINITIVE MELODY PIERCES THE EVENING CALM

The hush that mantles Nature at sunset throws into relief the sweet caroling of the **Eastern Vesper Sparrow** (on the post, above). The white and chestnut stripes on the head of the **Western Lark Sparrow** (left center) make it easy to identify as it runs along dusty roads in the West. Desert mountain slopes in Arizona and northwestern Mexico are frequented by the **Rufous-winged Sparrow** (right center). The **Scott's Sparrow** (lower left) is a ground-creeping bird of the Southwest.



### Eastern Chipping Sparrow

(*Spizella passerina passerina*)

Average Length, Five and One-third Inches

One of the birds that undoubtedly has profited by the advent of the white man to North America is the eastern chipping sparrow. It has largely forsaken the wilder regions to dwell near the abode of man. Here the open fields and orchards are more to its liking and there is less molestation from its natural enemies. Over much of Canada and eastern United States, as far southward as Georgia and central Texas, it is a well-known inhabitant of gardens and lawns.

It winters abundantly in the southern States from Oklahoma and southern New Jersey to the Gulf of Mexico. Here it often congregates in flocks, especially as spring approaches. In a field near Summerville, South Carolina, one day at sunrise, a friend and I watched a company of 60 or more that alighted in a leafless tree.

Soon they began to drop down, a few at a time, among the dry, dead cottonstalks. Many settled near our bird trap to feed on the seed scattered as a lure for them. When I pulled the string of the trap 14 were captured.

My companion placed bird bands around their legs and released them one by one to join their friends in the treetop. Half an hour later when the trap was again sprung we found that several of the prisoners wore aluminum bands they had recently acquired. We may in time learn that some of them have been handled by birdbanders in New Jersey, Ontario, or elsewhere, who, reporting the numbers on the bands, will add to our knowledge.

From British Columbia and Alberta southward to the mountains of Chihuahua, the western form of this species (*S. p. arizonae*) may be found, but it is not so distinctly an inhabitant of the cultivated lands, being quite at home in regions uninhabited by man.

### Eastern Field Sparrow

(*Spizella pusilla pusilla*)

Average Length, Five and Three-quarters Inches

Among the flocks of sparrows of different species that we find in the brown fields of autumn, there often occurs the eastern field sparrow. From New Jersey, Pennsylvania, and Missouri southward to the coast of the Gulf of Mexico, it is a common winter resident, being distributed more or less locally according to the natural food conditions.

It does not have the habit of collecting in large flocks like the chipping sparrow, and often is found quite singly and alone. It is one of our sweetest-singing birds, and its clear, plaintive notes are among the most common sounds of our northern fields and meadows in spring and summer.

The song is delivered from a low perch, often a dead limb on some bush or tree, and begins with four or five clear whistled notes, all of which descend in pitch and lead quickly to a terminating, almost insectlike trill. Thus the performance, which begins in leisurely fashion, ends with a breathless rush.

In spring the field sparrow is partial to abandoned fields overgrown here and there with bushes or briars. In such an environment it builds its finely lined nest of grasses, weeds, and rootlets. Often the cradle for the eggs and young is nestled in the fork of a low huckleberry or in a cluster of small blackberry vines. Now and again it is built on the ground, but even when one is placed in a bush it is never at an altitude of more than a few feet. The spotted eggs number either four or five. Two broods are raised each year.

The western subspecies of the field sparrow (*S. p. arenacea*) is found in summer from Montana and North Dakota to Nebraska. It passes the winter from the southern limits of its breeding range to Texas, Louisiana, and Nuevo Leon.

### Eastern Tree Sparrow

(*Spizella arborea arborea*)

Average Length, Six and One-third Inches

Early in October small flocks of eastern tree sparrows begin to enter the United States from their summer home in Canada. By the last of the month their numbers have grown to large proportions, for by then some hundreds of millions are well distributed throughout the eastern and southern States.

Before departing for the north the next March or early April, they have consumed thousands of tons of weed seeds. To the farmer they are one of the most valuable of Nature's helpers.

As warmth begins to creep into the air of early spring, tree sparrows begin to sing, and the volume and frequency of the bursts of song increase until they depart for their summer home in the lands lying between Newfoundland on the east, and far-away Mackenzie near the Canadian Rockies. A western race (*S. a. ochracea*) is slightly paler.

### Worthen's Sparrow

(*Spizella wortheni*)

Average Length, Five Inches

Almost identical in general appearance with the western chipping sparrow is the Worthen's sparrow of New Mexico and northern Mexico to Tamaulipas. The brown of the crown is not so reddish, nor are the stripes on the side of the head so distinct.

Little is known of the habits of this rather obscure bird, described in 1884 from a specimen taken at Silver City, New Mexico.

SPARROWS, TOWHEES, AND LONGSPURS



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THE "CHIPPY" HAS PROFITED FROM MAN'S CULTIVATION OF THE LAND

The pert little **Eastern Chipping Sparrow** (left center, with young bird) has largely forsaken wilder regions to live in gardens, fields, and orchards, where its favorite foods are more abundant. One of our sweetest-singing birds is the **Eastern Field Sparrow** (upper figure). The very abundant **Eastern Tree Sparrow** (lower right) nests in Canada, and in October appears in hordes in the eastern and southern States. At the lower left is the little-known **Worthen's Sparrow** of New and Old Mexico.

### Slate-colored Junco

(*Junco hyemalis hyemalis*)

Average Length, Six and One-quarter Inches

The common dark-gray snowbird so well known throughout the colder months in eastern North America is the slate-colored junco.

The line of demarcation on the breast where the slate-colored feathers stop and the white plumage begins constitutes a splendid field mark to look for. Also, the bird in flight usually displays the white outer tail feathers.

People who place food in their yards look for the junco as one of their regular winter guests. In summer it ranges from Alaska through central Alberta to Michigan, Nova Scotia, New York, and Pennsylvania, placing its nest generally on the ground in well-hidden situations. It winters from eastern Canada to the Gulf of Mexico.

I have often wondered where the juncos spend the night. One would naturally suppose that their resting place would be within the shelter of some convenient bush. Many of us have come upon them in such situations after the birds evidently had settled for their night's repose. But once I found one roosting in a broken gourd lying on a shelf in a buggy shed. For more than a week one spent each night on a veranda rafter, a hiding place I discovered by the cautious use of a flashlight. It is safest to say that these juncos usually roost in trees and bushes.

Their feet must become very numb on cold, snowy nights, and many have been found with toes partly gone, presumably from frostbite.

### Oregon Junco

(*Junco oreganus*)

Average Length, Six Inches

The head feathers of the male Oregon junco are noticeably black, a color which in the female is replaced with gray. The *Junco oreganus* is a western species that is found over a vast region of widely varying environmental conditions. It breeds from Yakutat Bay, Alaska, southward to northern Oregon, and winters in the western States southward as far as northern Mexico.

### Song Sparrows

(*Melospiza melodia*)

Average Length, Six to Seven Inches

No other native sparrow is so widely distributed in North America and none is better or more favorably known than the song sparrow.

This streaked bird with the identifying dark brown spot in the center of the breast may be found in almost any bushy field, along fence rows, or the borders of marshes and swamps, in gardens, about lawns, or in fact almost anywhere except in thick woods and in regions barren of vegetation. Its song, so loud, so cheerful, and so melodious, is hailed with de-

light by thousands of nature lovers who may hear it at almost any time of day, and, in some localities, any day of the year.

It has a very sprightly, exuberant spirit and is one of those birds that seem especially clean and healthy. Observers have commented on its comparative freedom from parasites.

That these birds have strong individuality and are passionately devoted to their environment is well known. Male and female song sparrows, carried by Syracuse University naturalists in closed containers, and in several instances liberated at dusk, were nevertheless able to find their way back to the point of original capture. Three birds (34-140217, 34-140253, 34-140275) were set free at a point nine miles east of the city and were recaptured two, three, and twenty-one days later, respectively, at the point on the university campus where they were originally taken. 34-140217 was subsequently caught and taken to Chittenango, a village about fifteen miles east of Syracuse. After liberation there, it returned and was caught again at the original point of capture thirty-six hours later. It was then taken to Cortland, about thirty-five miles south of Syracuse, and released. It was again recaptured six days later at the original point, 1936.

Mrs. Margaret Morse Nice, whose home is in the outskirts of Columbus, Ohio, for years has worked unremittingly, spying upon the intimate home life of several pairs of these birds that live near her home. She has learned many new facts and has been able to correct certain long-accepted but inaccurate statements about this sparrow's habits.

Mrs. Nice has found that many of the song sparrows that breed in the neighborhood are not migrant birds that have spent the winter farther south and returned in spring to the Columbus region, but are permanent residents that have passed the winter close at hand. By the time the migratory waves of song sparrows from the south begin to sweep by in March, the local pairs of birds have already preempted favorable nesting sites and are ready to defend them against the new arrivals. The intruding migrants are promptly attacked and encouraged to leave at once for other parts.

The resident song sparrows begin to sing by the latter part of February. Frequently one will render his song as many as two or three hundred times in an hour. While song sparrows are usually secretive and retiring, their fear of discovery seems to vanish in the spring. At this season they come boldly into the open to sing or to fight others that trespass on their territories. They often invade the domain of neighboring song sparrows and get into fierce battles with them.

Under sheltering weeds the female makes the nest and incubates the eggs. She also continues to brood the young for some time, to protect them from the weather and prying enemies.

(Continued on page 376)

SPARROWS, TOWHEES, AND LONGSPURS



WALTER A. WEBER

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Painting by Walter A. Weber

WINTER BRINGS CHEERY "SNOWBIRDS" TO THE DOORYARD

The plump **Slate-colored Junco** (bottom, adult facing a streaked young bird) is known to many only as the "snowbird." The cheerful song sparrow is the most familiar and widely distributed species of its family. Best known is the exuberant **Eastern Song Sparrow** (center three, adult feeding young birds), which breeds over most of eastern North America. At the upper right is the Southwest's **Desert Song Sparrow**. The **Oregon Junco** (upper left) makes its home on the Pacific coast.

**Golden-crowned Sparrow***(Zonotrichia coronata)*

Average Length, Six and Three-quarters Inches

This unusually handsome bird ranges from the Aleutian Islands to central British Columbia in summer, and passes the winter from central Oregon to Baja California. In the parks of San Francisco it is often seen. Perhaps some of those that recently have been captured and illegally brought to New York for sale as caged birds were taken within a radius of 50 miles from the Golden Gate.

Stragglers have appeared in Nevada and Colorado, and lost or wind-blown individuals have wandered to Wisconsin and even eastward as far as Massachusetts. It is a large sparrow, specimens usually measuring seven inches in length. The plumage is alike in both sexes.

The golden-crowned sparrow is not a bird of the open fields. It distinctly prefers woods and thickets along streams and sloughs.

**White-throated Sparrow***(Zonotrichia albicollis)*

Average Length, Six and Three-quarters Inches

The so-called "Peabody bird," or white-throated sparrow, breeds from Great Bear Lake to northern New York, Massachusetts, northern Michigan, northeast Wyoming, eastern Montana; it winters from Baltimore, Louisville, and St. Louis to Florida and Texas.

Few birds are more sociable, and a group of them may be found almost anywhere, often in company with other sparrows. At times they feed with their friends, the slate-colored juncos. In late winter, spring, and summer they give vent to a beautiful song. Their ordinary call notes are metallic *chips*, which, however, are softer as roosting time approaches.

In the white-throat's northern breeding haunts, in the evergreens or in bushy undergrowth among the burnt timber, its clear, sweetly melancholy whistle accentuates the emptiness of the wilderness and yet cheers the listener. Its bulky nest, made chiefly of grasses and moss, is placed on the ground or in low bushes, preferably in burnt-over clearings.

Since the white-throated sparrow is a ground-feeding bird and is readily attracted to the vicinity of dwellings, it has been banded in large numbers, the total to January 1, 1939, being about 155,000. It would be expected that these birds would yield a comparable number of return records, and that the facts would furnish basic data relative to the migrations of the species. Such, however, is not the case.

Operators of stations in the winter area, such as Thomasville, Georgia, and Summerville, South Carolina, have obtained return records showing that these birds come back to the exact winter quarters occupied in previous seasons, but stations located at points between the wintering and nesting grounds rarely recapture banded birds of this species.

The fact that they do not return to the banding stations on their migration routes indicates some unusual aspects of their travels, which it is hoped will eventually be discovered by banding studies.

**Eastern Fox Sparrow***(Passercella iliaca iliaca)*

Average Length, Seven and One-quarter Inches

The colors of this bird, suggesting those of the red fox, render it a very conspicuous inhabitant of the countryside. It is not inclined to come near man's abode except on rare occasions, although in winter the hope of food may draw it to your feeding station. In small flocks it inhabits thickets, patches of large weeds, and the brushy borders of woodlands. As such regions are the dwelling places of red-eyed towhees and various other sparrows, it is not uncommon to find them all in the same thicket searching for their dinner.

Fox sparrows are continually turning over dead leaves that strew the ground, scratching with both feet at the same time. Vigorously they dig with the beak, sharp eyes ever alert for any tiny seed or insect. They consume the seeds of various kinds of small wild fruit and such dormant or active insects as they find.

An early spring snowfall which may cause the song sparrow to go supperless to roost does not daunt the fox sparrow. Unhesitatingly it digs away the snow and goes right on with its search among the fallen leaves.

The summer home of this bird extends over a vast territory from Newfoundland to Manitoba, and northward as far as trees are growing, from northern Quebec to northwestern Alaska.

The advance guard of the southward-bound fox sparrow migration enters the United States in September, and within the next six weeks millions of individuals are scattered generally over the eastern and southern States. Few of them winter as far north as New England or even Washington, D. C.

The fox sparrow's song is unsurpassed among the sparrows. The bird does not wait for warm weather to begin its music. There are records of its singing in Massachusetts as late as October and as early as January, February, and March. The migration song, however, is far inferior to that produced in the lands where it raises its family.

Sixteen varieties of this beautiful sparrow are recognized by bird students. With the exception of the eastern fox sparrow, they are all found in western North America. The western representatives vary slightly in plumage, and generally are darker than the eastern form.

**White-crowned Sparrow***(Zonotrichia leucophrys leucophrys)*

Average Length, Six and Three-quarters Inches

The white-crown is an aristocrat of the great sparrow family. Its pleasing garb of

*(Continued on page 376)*

SPARROWS, TOWHEES, AND LONGSPURS



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Painting by Walter A. Weber

PERSISTENT EATERS OF WEED SEEDS, SPARROWS ARE FARMERS' FRIENDS

Their stout beaks are perfect seed crushers. The **White-crowned Sparrow** (center pair, adult right, immature left) nests in the higher western mountains and in Canada northward to the limit of trees. A male **White-throated Sparrow** perches (upper right) below a plainer immature female. Alder and evergreen thickets are favored by the Far West's **Golden-crowned Sparrow** (upper left). Unsurpassed among the sparrows is the rich, lull-toned song of the **Eastern Fox Sparrow** (bottom figure).

### Lapland Longspur

(*Calcarius lapponicus lapponicus*)

Average Length, Six and One-half Inches

The best known of this little group of birds with long rear toenails is the Lapland longspur. It breeds in Siberia, in Lapland, and over much of Arctic America. With the approach of cold weather it moves irregularly through the central States to Texas, and occasionally on the east coast to South Carolina.

Observers of its habits on the tundras tell of its beautiful tinkling song, which it delivers usually on the wing after an upward flight of 30 or 40 feet.

In migration or on its winter feeding grounds it often associates with horned larks or snow buntings. Sometimes hundreds of thousands of these birds may be seen in flocks in the western Central States, and it is an experience long to be remembered when one of these great assemblages is seen flying overhead, all singing at once and flooding the prairies with their music.

It is well known that there are sometimes tremendous losses of bird life during periods of stormy or unseasonable weather.

Such a misfortune overtook a vast migratory movement of Lapland longspurs in Minnesota on the night of March 13-14, 1904. The night was cold, very dark, and a heavy wet snow was falling. In the morning it was discovered that an incredible number of northward-moving longspurs had perished.

Dr. T. S. Roberts conducted a careful investigation of the catastrophe. On the ice of two small lakes covering about two square miles lay the bodies of no fewer than 750,000 longspurs!

In the surrounding country, dead birds lay on house roofs, in the streets—in fact, everywhere. Literally millions perished that fatal night within an area of approximately 1,500 square miles. Examination of a large number of these birds revealed that in all cases their stomachs were empty. Weakness resulting from hunger may have contributed to their destruction.

### Lark Bunting

(*Calamospiza melanacorys*)

Average Length, Six and One-half Inches

The male of the lark bunting is one of the most conspicuous of the small birds that in summer inhabit the Great Plains region of central and western North America. Its black plumage with large white wing patch renders it a bird not easily overlooked.

The lark bunting likes the untilled prairies and rocky hillsides, and often it has been driven from favorite regions by the advent of the plow. On the grassy plains it occupies much the same place in the bird world as does the bobolink of more eastern regions.

Also like the bobolink, it undergoes unusual molting processes. In winter plumage the black feathers of the male have largely disappeared and he much resembles the female.

In autumn these buntings desert their prairie home and in flocks roam the country from Arizona and Texas southward well on to the cactus-strewn plateau of Mexico. Here they remain until the approach of spring, when they begin to move northward, the white and black plumage of the males once again in evidence. A flood of song announces that another mating season is close at hand.

Its four or five pale-blue eggs are laid in a nest of grass and fine roots.

### Eastern Snow Bunting

(*Plectrophenax nivalis nivalis*)

Average Length, Seven Inches

The eastern snow bunting is in summer distinctly a polar species, breeding as far north as there is land on which to place its nest. Along the vast arctic wastes of North America, from northern Greenland to northwestern Alaska, it is one of the few small birds that the traveler is likely to encounter. It is also found in the arctic regions of the Old World. In winter snow buntings may be seen in flocks almost anywhere in central Europe, and at times even in northern Africa.

In southern Canada and in the northern States they are quite common winter residents; on rare occasions they wander as far south as Florida. But where, in all the world of frozen whiteness, the "snowflakes" are able to find enough seeds to keep them in excellent physical condition is a difficult question for man to answer. A collector found in the stomach of one of them some 1,000 pigweed seeds.

One of the most stimulating sights in a winter landscape is a flock of these white birds moving erratically here and there over the snow-clad fields. In perfect unison they wheel, mount, veer to the left or right, and make sudden swoops toward the earth.

You are sure they have alighted, and the next instant discover you were mistaken, for there they go close to the snow, then up and away. Again you may see them on the surface of the snow, pausing here and there, running, walking, or even jumping from place to place.

Sometimes they come about haystacks or swarm over the barnyard, always active and full of an abundant vitality. Their happy calls are sweet.

In early spring snow buntings often collect in vast assemblies and slowly, irregularly, begin their erratic flight toward the frozen ground of the north, chirping musically.

A snow bunting banded at McMillan, Michigan, February 17, 1931, was shot at Igdlorpait, Greenland, by an Eskimo, April 30, 1931, sent to the Zoological Museum at Copenhagen, and then to Washington, D. C.

SPARROWS, TOWHEES, AND LONGSPURS



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Painting by Walter A. Weber

DRIFTING "SNOWFLAKES" ENLIVEN WINTRY FIELDS

Visitors to the Arctic tundras tell of the sweet, tinkling mating song of the **Lapland Longspur** (right center, male in summer and winter dress) in its breeding-range at the top of the world. Popularly called "snowflake" during winter visits to "the States," the **Eastern Snow Bunting** (male in summer plumage, lower right, and winter garb, left) nests in the polar regions. In sharp contrast to his pale, streaked mate is the striking black-and-white male **Lark Bunting** (pair on branch, and male flying).



### White-crowned Sparrow

(Continued from page 372)

gray and brown, its black and white crown stripes, and its neat form quickly arrest the attention of the bird observer. In many ways it resembles the white-throat, although it is a distinct species. Like most of our North American small birds, it is migratory in habit. In winter it is spread over most of a great territory extending from lower Baja California and eastward through Arizona, Kansas, the Ohio and Potomac River Valleys, and below this line as far as Florida, Louisiana, and much of the plateau of western Mexico. Its summer range includes suitable localities in the higher mountains of California, New Mexico, Wyoming, Oregon, and northward and eastward to the tree limit in northern Manitoba and Quebec. It occurs accidentally in southern Greenland.

Early in April, northward-moving white-crowns begin to appear in the middle States. Some years they are fairly common migrants; other years but few are seen. By the middle of May or a little later, the wave of these migrants has passed on toward the north and bird observers in the southern region see no more of them until the early days of autumn. During the fall migration their appearance in this region is confined almost entirely to the month of October.

In the spring the transient white-crowns often frequent open pastures and fields, or may appear along roadsides. In autumn I have found them mingling with other sparrows in cornfields, or in weed thickets where the ripened seeds lie scattered and furnish a food supply that is easy to garner.

In the eastern United States we are seldom privileged to hear the song of this bird given with the full power with which it is rendered in its summer home. Usually we catch only snatches of song, which, however, are pleasing, even if sad, in their cadence. The white-crown's melodies may be heard on warm days in early spring and often come from the shelter of woodlands rather than from the open fields. The full song consists of two long-drawn-out notes, the second one followed by three rapidly repeated lower whistles. The effect is rich, plaintive and very pleasing.

One day shortly after we had made camp in the valley of the Snake River in Wyoming, I discovered that a pair of white-crowned sparrows were carrying food to a spot a few rods from my tepee. On each trip an old bird would alight in a cluster of growing plants forming a bed about forty feet across. These plants were from twelve to fourteen inches in height.

After watching for some time and noticing that the birds always alighted at about the same place, I went to look for the nest. The most painstaking search failed to reveal their

hiding place. Whenever I retired to a little distance, feeding operations would be resumed. I searched virtually every square foot of that weed patch in vain. At length I climbed a tree, field glasses in hand, and spotted the nest.

Adjoining one side of the weed patch there was an area well covered with smaller weeds that were only three or four inches high. Here, eighteen feet from the border of the area of larger plants, the nest was discovered on the ground. The parents would alight among the tall plants, then run out to the border and, mouselike, slip through the thin growth of short weeds to the nest and its four hungry young.

The white-crowned sparrow feeds upon many kinds of insects, including ants, caterpillars, various beetles, and grasshoppers, also spiders. It also consumes many seeds and waste grain in their season.

It was described in 1772 and is thus one of the earliest members of our great sparrow group to be given scientific recognition.

### Song Sparrows

(Continued from page 370)

The male brings food to the nest. As a rule, the eggs hatch in twelve days and the young remain in the nest from twelve to fourteen days longer.

One year Mrs. Nice found that sixty-four pairs of song sparrows were inhabiting approximately fifty acres in the region where she studies. She made notes on the nests that came to grief. The eggs, young, or nests are destroyed chiefly through natural causes, such as rats, snakes, cats, wandering dogs, and rain storms. When a nest is ruined or its contents taken, another is built at once. Thus as many as four are often built in a single season. Even if the first nest is unmolested, at least one more brood of young will be reared by the same pair of sparrows.

It was found that two-thirds of the first nests came to grief. The percentage of successful nests increased as the season advanced. On the fourth attempt the birds were successful in bringing up their young in sixty per cent of the cases.

One amusing discovery was the way a male song sparrow can tell the sex of a strange song sparrow. He cannot tell by the color of the feathers because the plumage of both sexes is alike. His method is to attack the intruder. If it is a male it flees. If it simply sits still and says *eee eee eee*, it is a female!

The plumage of the song sparrow and, in some cases, its size vary in different parts of its range, which extends from Alaska to Mexico and from the Atlantic seaboard to the Pacific coast.

There are 26 subspecies of the song sparrow.

The Aleutian, desert, and sooty sparrows are all far-western forms, and their nesting habits and songs are very similar.

# THE SMALLEST STATE IN THE WORLD

## Vatican City on Its 108 Acres Is a Complete Sovereignty Internationally Recognized

BY W. COLEMAN NEVILS, S.J., D.D., PH.D.

*Illustrated with photographs by Holisher from Three Lions*

WHEN Numa Pompilius, soothsaying king of legendary Rome, about 600 B.C. chose an eminence from which to declare to the people his *vaticinia*, supposed messages from the gods, he could hardly have "divined" that a comparatively small part of his Vatican Hill would one day become a complete and separate City-State, recognized internationally as having all the usual appurtenances of empires and kingdoms, geographic, political, civil, and diplomatic.

The ridge which begins with the Janiculum and ends with Monte Mario was not one of the famed seven hills of Rome. It was outside the ancient limits of the city.

Recently a telephone operator, instructed to transmit a cablegram from the writer's residence in New York to the Vatican City, asked, "In what country, please?"

The secretary replied, "It's a city completely surrounded by Italy."

Though spoken in jest, the statement was entirely accurate. Premier Mussolini has defined the Vatican City as an "inviolable island."

### THE SIZE OF A GOLF COURSE

Occupying only as much space as would be needed for a generous 18-hole golf course, it is the smallest territorial sovereignty in the world (map, pages 382-3). The Liechtenstein Principality of 65 square miles and the Republic of San Marino with 38 would be huge beside it. Even the Principality of Monaco, with 370 acres, exceeds it. Its total area is 108.7 acres.

Despite its smallness, however, the sovereignty embraces within its limits the largest church in the world, the Basilica of St. Peter, and one of the most extensive of all palaces, an edifice of a thousand rooms.

Pius XI said at the time of the Lateran Accord ten years ago: "This territory is small, but we can say it is the largest in the world, since it contains a colonnade by Bernini, a dome by Michelangelo, treasures of science in the gardens, in the libra-

ries, and in the beautiful galleries, and then the tomb of the Prince of the Apostles."

From 1870, the year of the unification of Italy, to 1928 the Sovereign Pontiff was only a guest in his own household and a voluntary prisoner who never left the Vatican or appeared even by representative at any public civil function. The Vatican was the property of the Italian Government, which merely granted the use of it.

In 1929, however, a dispute of nearly sixty years was peacefully closed, and the vexing Roman Question was solved. On February 11 Cardinal Gasparri, on behalf of the Holy See, and Benito Mussolini, in the name of the King of Italy, signed three documents: a treaty, a concordat, and a financial convention. The Italian Chamber of Deputies and the Senate passed the agreement three months later with few dissenting votes, and it became law for Italy. On May 27 the royal signature was added, and on May 30, the eve of his 72d birthday anniversary, Pius XI also signed.

The Lateran Treaty consists of a preamble and 27 articles. Its essential point is the effective recognition of the full ownership by the Papal See of the Palace and all other land and buildings within the newly created Vatican City, and the See's absolute power and sovereign jurisdiction there. The Italian Government cannot intervene in any way in its affairs.

According to the general code of international law, Italy recognizes the right of the Vatican to have a diplomatic service, and full diplomatic relations are established for the first time between Quirinal and Vatican. All cardinals receive the honors due princes of royal blood.

### 37 COUNTRIES SEND ENVOYS TO THE HOLY SEE

At present 37 countries send diplomatic representatives to the Holy See. The treaty guarantees that, "By reason of the recognized sovereignty, the diplomatic representatives of the Holy See and couriers



IN A STREAMLINED OBSERVATORY, GIANT NEW TELESCOPES SCAN THE STARS

The four-century-old building in the Vatican, erected by Gregory XIII when he reformed the calendar, has been abandoned by the astronomers. Now they study the heavens in a modern structure at Castel Gandolfo, the Pope's summer home. Director from 1906 until his death in 1950 was the Reverend John G. Hagen, S.J., who had been head of the Georgetown University Observatory at Washington, D. C., for 18 years before going to the Vatican. His successor, the Reverend John W. Stein, S.J., shown above, was one of his pupils at Georgetown.

despatched in the name of the Sovereign Pontiff enjoy in Italian territory, even in times of war, the same status as is due to the diplomatic representatives and couriers of other foreign states according to the provisions of international law. . . .

"Envoys of foreign governments to the Holy See will continue to enjoy in the Kingdom of Italy all the privileges and immunities which pertain to diplomatic agents according to international law. Their embassies or legations may still be located in Italian territory, possessing the immunity due to them according to international law, even though their Governments may not have diplomatic relations with Italy."

The final sentences of Article 26 are epoch-making: "The Holy See declares the Roman Question definitively and irrevocably settled and, therefore, eliminated; and recognizes the Kingdom of Italy under the Dynasty of the House of Savoy with Rome as the Capital of the Italian State. Italy on her side recognizes the State of the Vatican under the sovereignty of the Supreme Pon-

tiff." The Law of Guaranties and any other law or act contrary to the present treaty were abrogated.

Article 16 of the treaty exempts from all taxes, "whether ordinary or extraordinary, whether levied by the State or by any other entity whatsoever," the two palaces of St. Apollinaris, the Spiritual Retreat House at Sts. John and Paul, and six Pontifical Institutes, among them the Gregorian University, over which at present a distinguished American Jesuit presides.

The university, which was opened in 1551, during the lifetime of the founder of the Society of Jesus, numbers among its alumni twelve Pontiffs, including the reigning Pius XI and the renowned Leo XIII. There are now fifty-six nationalities in attendance.

In addition to these specified basilicas and religious institutions, the See has possession of the pontifical Castel Gandolfo, summer residence of Popes from 1629. It is seated high above the Alban Lake at an altitude of 1,397 feet.



#### VATICAN CITY'S PHARMACY HAS NO SODA FOUNTAINS

Operated by clerics, the medical dispensary sells drugs only. Here prescriptions for the Pope, the Papal Court, and townspeople are filled. There are no show windows. Vatican City also has a welfare center, where free milk is distributed to babies of the poor. Funds to supply the milk are the gift of an American benefactress.



#### COLLECTORS AND VISITORS BOOST SALES OF VATICAN CITY STAMPS

Brisk demand from all parts of the world makes philatelic printing much larger than it would be if only postal needs were to be met (pages 389 and 391). The small State was accorded the right to issue its own stamps under the Lateran Pacts. A full set of Vatican coins was struck in 1930.



THE POPE SPEAKS TO THE WORLD THROUGH THE MODERN MIRACLE OF RADIO.

Marconi, of wireless fame, built the powerful Vatican plant and presided at the opening broadcast of Station HVJ on February 12, 1931 (page 411). The Italian inventor explained the special ladderlike aerial and modern short-wave equipment to the Pontiff in detail.



Photograph by W. Sebrow from Black Star

POPE PIUS XI DEDICATES THE VATICAN'S NEW POWER PLANT

The white-robed Pontiff and Cardinal Pacelli listen to the ceremonies, held in 1935. Modern generators and equipment supply the small State with ample current. Today a marble tablet on the wall commemorates this event. Seated on the Pontiff's left is Camillo Serafini, Governor of Vatican City. Reading an address is Count Ratti, nephew of the Pope and Vatican official.

The village consists of one street, which ends with a square in front of the Pontifical Palace. Recently the Vatican Observatory staff has occupied new quarters there, and the scientific apparatus is of the latest and most advanced type (page 378). The removal of the Vatican City Observatory to Castel Gandolfo was imperative, since observations from the century-honored site were impeded by the extensive illumination of present-day Rome.

The old observatory situated in the Vatican Gardens had been in operation since 1582. It was established by Gregory XIII, whose reformation of the calendar required expert astronomical assistance. The late director, the Reverend John G. Hagen, S.J., had been many years head

of the Georgetown Observatory in Washington; and his successor, the Reverend John W. Stein, S.J., a Netherlander, made some of his astronomical studies in Washington at the same observatory under the tutelage of Father Hagen.

#### VATICAN CITY HAS ITS OWN POLICE

For many years the police and guard service within the Vatican has been well organized. The Guardia Nobile, the most



PIUS XI ENDS THE LEGEND OF "THE PRISONER OF THE VATICAN"

On his richly decorated sedan, borne by scarlet-clad papal chair-bearers, the Pope entered St. Peter's Piazza in a solemn procession on July 25, 1929. For nearly 60 years the Popes had voluntarily secluded themselves in the Vatican as a protest over differences with the Italian Government. Reconciliation came with the Lateran Accord. Technically, the Pope did not leave Vatican territory on this occasion, for the piazza is part of the territory of the new State, but he passed beyond the Vatican walls. Helmeted soldiers about the sedan are Swiss Guards. Gentlemen of the Household wear white Elizabethan ruffs.

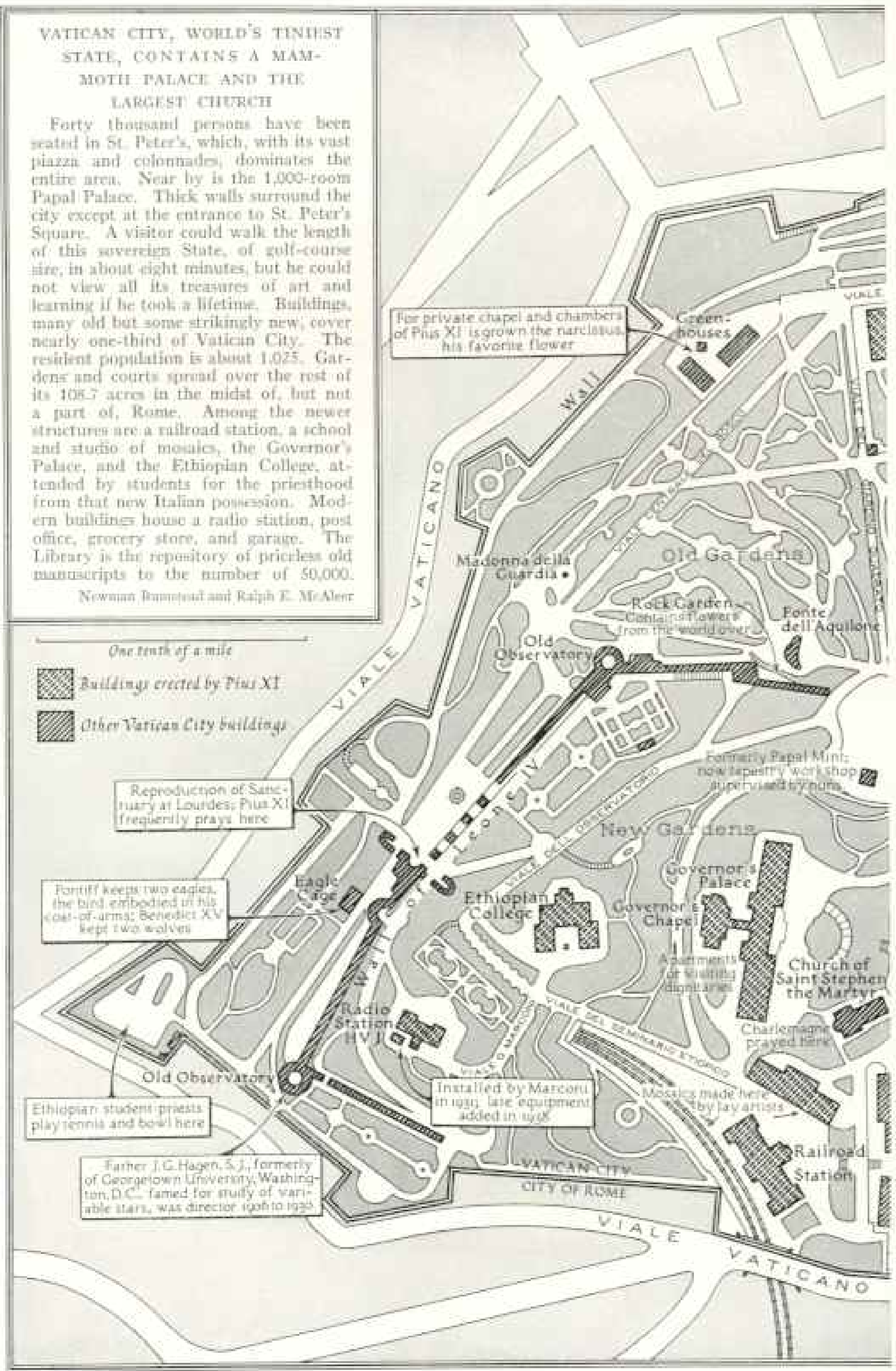
distinguished corps of military service, is the mounted bodyguard of the Pope at public functions; hence its service is quite limited. During the vacancy of the See the corps stands at the service of the College of Cardinals. The post of commander is always entrusted to a Roman prince.

The Palatine Guards, known as the Guardia d'Onore, have a few duties to perform as directed by the Major-domo and Maestro di Camera (Master of the

VATICAN CITY, WORLD'S TINIEST STATE, CONTAINS A MAMMOTH PALACE AND THE LARGEST CHURCH

Forty thousand persons have been seated in St. Peter's, which, with its vast piazza and colonnades, dominates the entire area. Near by is the 1,000-room Papal Palace. Thick walls surround the city except at the entrance to St. Peter's Square. A visitor could walk the length of this sovereign State, of golf-course size, in about eight minutes, but he could not view all its treasures of art and learning if he took a lifetime. Buildings, many old but some strikingly new, cover nearly one-third of Vatican City. The resident population is about 1,025. Gardens and courts spread over the rest of its 108.7 acres in the midst of, but not a part of, Rome. Among the newer structures are a railroad station, a school and studio of mosaics, the Governor's Palace, and the Ethiopian College, attended by students for the priesthood from that new Italian possession. Modern buildings house a radio station, post office, grocery store, and garage. The Library is the repository of priceless old manuscripts to the number of 50,000.

Newman, Bunstead and Ralph E. McAlerr



For private chapel and chambers of Pius XI is grown the narcissus his favorite flower

Reproduction of Sanctuary at Lourdes; Pius XI frequently prays here

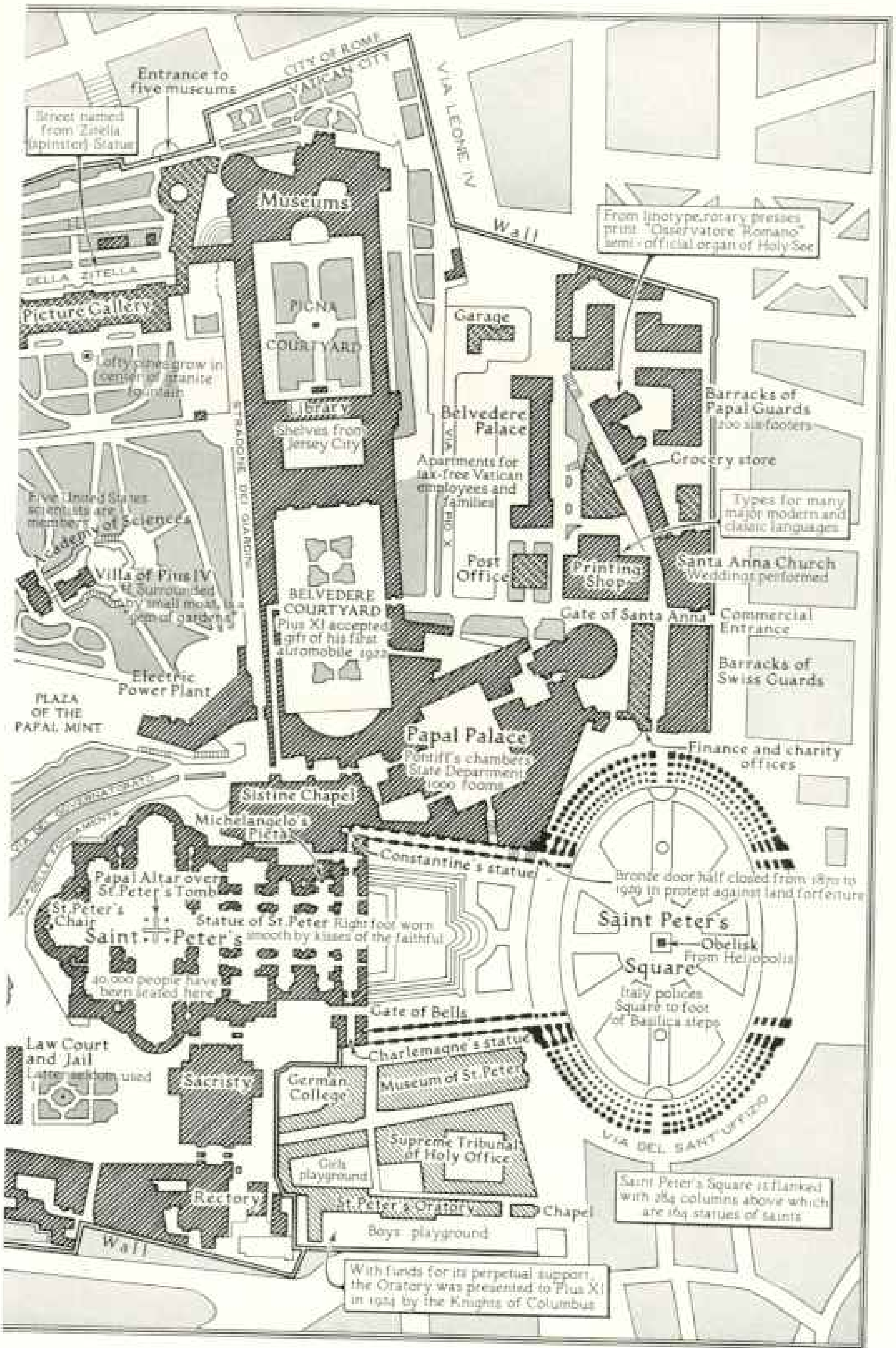
Fontiff keeps two eagles, the bird embodied in his coat-of-arms; Benedict XV kept two wolves

Ethiopian student-priests play tennis and bowl here

Father J.G. Hagen, S.J., formerly of Georgetown University, Washington, D.C., famed for study of variable stars, was director 1906 to 1930

Installed by Marconi in 1931, late equipment added in 1938

Mosaics made here by lay artists



Entrance to five museums  
Street named from Zinella (spinster) Statue

Museums

DELLA ZITELLA

Picture Gallery

Leafy pines grow in center of granite fountain

PIGNA COURTYARD

Library

Shelves from Jersey City

Garage

Belvedere Palace

Apartments for tax-free Vatican employees and families

Post Office

From linotype, rotary presses print "Osservatore Romano" semi-official organ of Holy See

Barracks of Papal Guards  
200 six-footers

Grocery store

Types for many major modern and classic languages

Printing Shop

Santa Anna Church  
Weddings performed

Commercial Entrance

Barracks of Swiss Guards

Five United States scientists are members of Academy of Sciences

Villa of Pius IV  
Surrounded by many small moats, formal gardens

BELVEDERE COURTYARD  
Pius XI accepted gift of his first automobile 1922

Papal Palace

Pontiff's chambers  
State Department  
1000 rooms

Gate of Santa Anna

Finance and charity offices

PLAZA OF THE PAPAL MINT

Sistine Chapel

Michelangelo's Pictas

Constantine's statue

Saint Peter's

Obelisk  
From Heliopolis

Square

Italy polices Square to foot of Basilica steps

Papal Altar over St. Peter's Tomb

St. Peter's Chair

Statue of St. Peter  
Right foot worn smooth by kisses of the faithful

Saint Peter's

40,000 people have been seated here

Gate of Bells

Charlemaigne's statue

Law Court and Jail  
Latter seldom used

Sacristy

German College

Museum of St. Peter

Girls playground

Supreme Tribunal of Holy Office

Rectory

St. Peter's Oratory

Chapel

Boys playground

Saint Peter's Square is flanked with 284 columns above which are 164 statues of saints

With funds for its perpetual support, the Oratory was presented to Pius XI in 1924 by the Knights of Columbus





Photograph courtesy Royal Italian Embassy

ST. PETER'S VAST SQUARE AND BASILICA DWARF VATICAN PALACES AND COURTS

From the air, the magnificence of the entrance colonnade and great church are revealed. Diagonally in line, from lower right, lie the piazza, domed Cathedral, and the Governor's Palace. Beyond the upper colonnade (right) rises the Papal Palace. Other buildings may be identified from the map, pages 382 and 383.

Household). All Roman citizens, they serve without pay, though an annual allowance is granted for uniforms.

The Pontifical Gendarmery is made up of Italians who have completed a period of service in the Italian Army and who have certificates of good character from civil and religious authorities. They must be at least five feet nine inches tall. Physically, Julius Caesar's distinguished grandnephew, Augustus, would not have qualified.

The corps of Papal Gendarmes at the present time musters 100 men and three officers. Their main duty is the policing of the Vatican Gardens, where they have their barracks. They are also the police of the Palace. On some special feasts their music corps gives a concert in the courtyard of Saint Damasus.

Best known of the Vatican Police De-

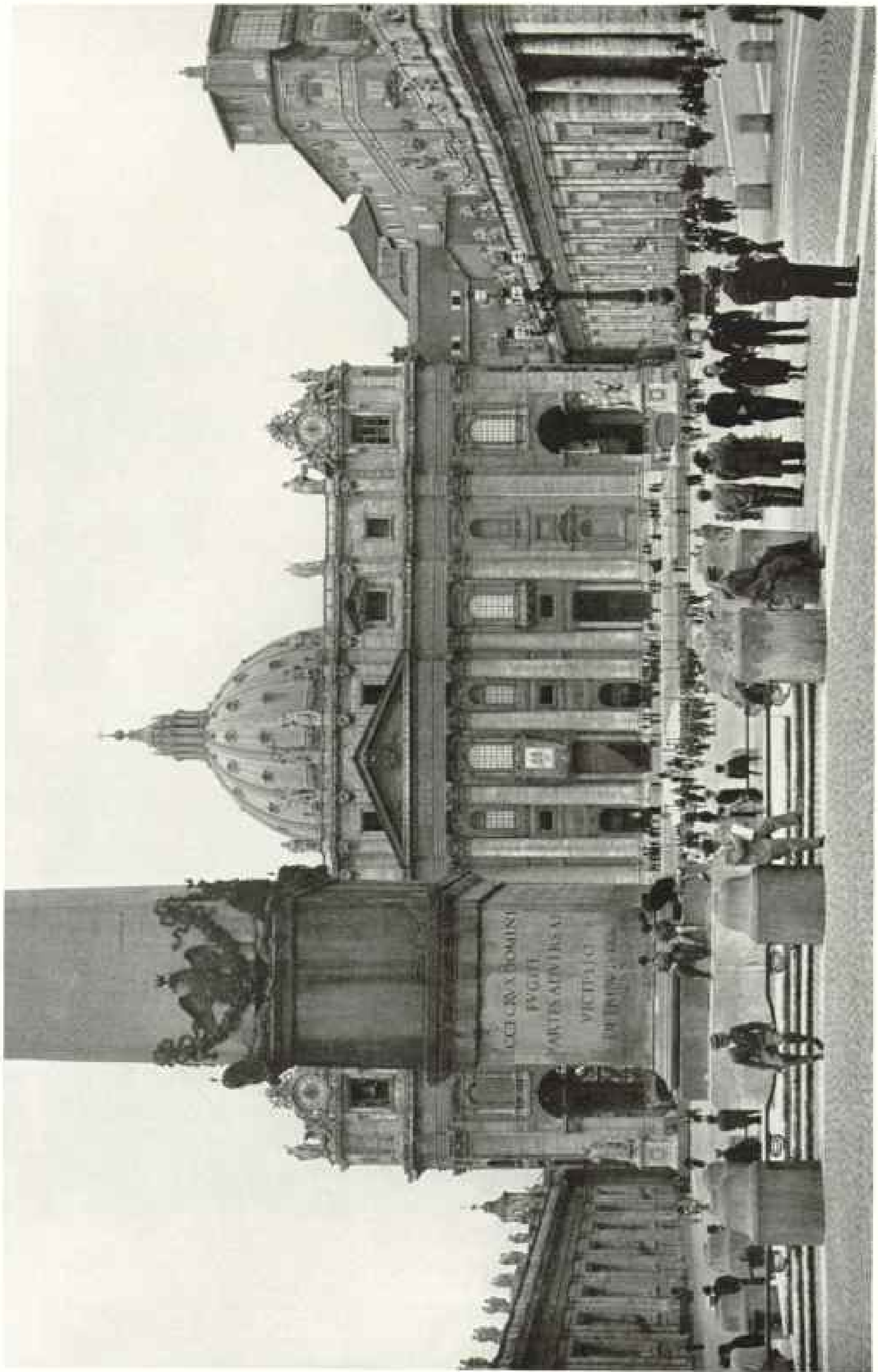
partment are the Swiss Guards, whose establishment goes back several hundred years (pages 392, 407, 408). At the instance of Cardinal Schinner, a Swiss, in 1505 the two cantons of Zurich and Lucerne made a treaty with Julius II whereby the former would supply 250 men as a bodyguard, and since then a corps has always been present at the Vatican. The number has been reduced in recent times to 110 men and ten officers.

Especially since the signing of the Lateran Accord, the Swiss Guards have a community of their own. No one is allowed in their barracks, their hospitality being dispensed elsewhere. Their language is the German dialect of their home cantons, and their cuisine is likewise under native control, with the usual Swiss specialties—sausages, cheeses, and beer.



SWISS GUARDS SWING THROUGH A PONTIFICAL LIBRARY ENTRANCE

Above the portal, the Latin inscription proclaims the opening of a passageway to the Library, Archives, and College of Learning, established in the Vatican by Pius XI "under the protection of Mary, Mother of Wisdom." The Pope directed that approaches to the new buildings lead from the street, so that scholars from all over the world could enter without passing through the labyrinthine halls of the palaces. The Vatican Library is essentially a repository of manuscripts. The coats of arms of the reigning Pope and Cardinal Librarian are placed on the covers of bound manuscripts, but not on books.



Photograph by Branson De Coo

MICHELANGELO DESIGNED THE MIGHTY DOME OF ST. PETER'S, LARGEST CHURCH IN THE WORLD

Construction of the huge building, in the form of a Greek cross, was begun in 1506. Progress was interrupted several times and the form was changed to a Latin cross. The work was not completed for 120 years. The original structure which it replaced was erected by the Emperor Constantine sixteen centuries ago. In the center of the vast square on which the Basilica fronts stands an obelisk (left foreground) that once rose in the Emperor Nero's Circus.



SCHOLARS LEARN TO READ A LONG-FORGOTTEN LATIN SCRIPT

From actual documents and letters in the "Secret Archives," now open to students, they gain understanding of the ancient handwriting. Thus they are able to consult the files themselves. From the style of writing they know the age of the manuscript.



A STUDENT PORES OVER CENTURY-OLD LETTERS

In the "Secret Archives" section of the Vatican Library, sorted and repaired documents are stitched together and filed. Such original sources are valuable to historians. Thousands of other manuscripts await classification in warehouse-like rooms (pages 385, 401, 405). Pope Pius XI has a special interest in this work because he was prefect of the Library during the World War.

Their indoor amusements are the familiar card games of their people, and other simple diversions of a peasant club. They have an excellent trumpet corps.

To keep fit through exercise rather than diet, they play football, but with a set of rules far different from those prevailing in the United States.

Their formal uniform, modified in design four hundred years ago by Michelangelo, is a striking combination of red, yellow, and blue. On ordinary occasions they wear steel-blue garb with black caps.

Their commander, who receives their ap-

plications for admittance, enjoys the rank of colonel, a quartermaster acting as his secretary and ordnance officer. Only native Swiss may join the corps, and each candidate must present a certificate from home showing eligibility for military service in Switzerland.

Besides this, he must have a baptismal certificate and a testimonial letter as to character signed by his parochial superior. It is required that he be at least five feet eight inches tall, of good health and with no body disfigurement.

The candidates defray the cost of the journey to Rome, but after a year of good conduct they receive a refund paid in installments over a period of seven months.

If any wish to retire, they are

quite free to do so on three months' notice. A pension of one-half pay on retirement is granted after 18 years of service; two-thirds after 20 years; five-sixths after 25 years, and full pay after 30 years.

#### THE JAIL HAS ONLY ONE PRISONER

The new Vatican City possesses a model jail—a model not only in its structure, but in its upkeep. From the establishment of the independent State up to the middle of December, 1938, only eleven persons have been brought to trial under the Pontifical Penal Code. One of this number was ac-

quitted; nine received prison terms ranging from five days to three years.

As this is written, the sole occupant of the jail is an erstwhile Vatican Library book keeper charged with embezzlement.

In the post office, a one-story structure built by Pius XI, is also the telegraph office, with long-distance as well as local telephone service. Vatican stamps are so popular as souvenirs that their sale has placed them among the Vatican City industries (pages 379, 391). The telephone service claims connection with five continents.

For some years Monsignor Enrico Pucci has been covering the Vatican for important papers of the United States, the *Times* of London, and South American newspapers. Chevalier Enrico Marchetti is the manager of the telegraph office. At its opening the Pope presided, showing intense interest in the equipment.

There are two important publications in the Vatican City, the *Acta Apostolicae Sedis* and the *Osservatore Romano*. Strictly ecclesiastical, the first named is the official news service of the Pope as head of the Church. It has a circulation of about 10,000. As the official bulletin of the See, it publishes bulls, encyclicals, and other official papal pronouncements, and also the decrees of the Roman Congregations, the advisory councils of the Pontiff.



OLD SHEETS OF PARCHMENT TAKE A GELATINE BATH

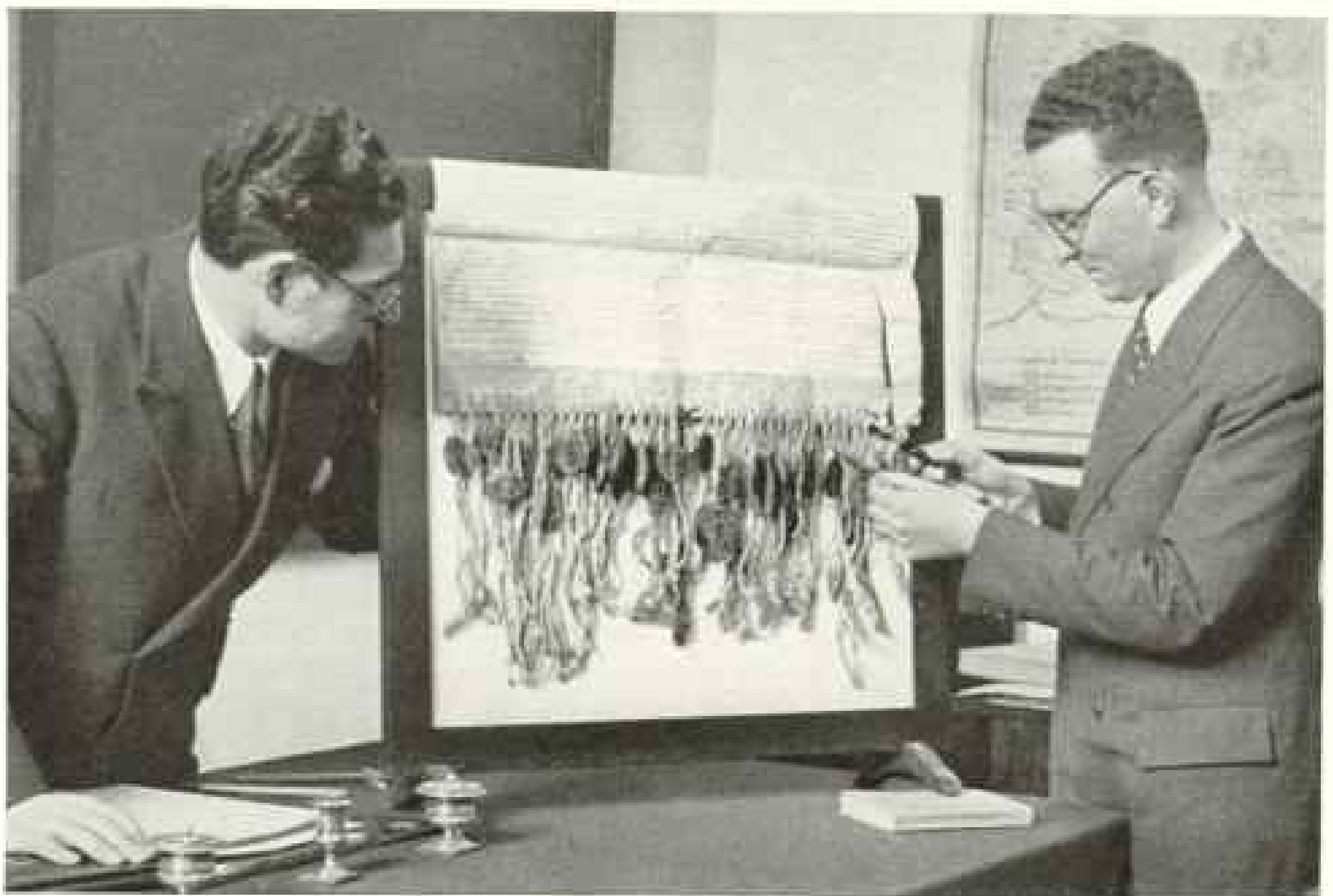
The jellylike substance holds the repaired leaves together and protects them from parasites and other enemies, including time itself. The latest scientific discoveries also are used in Vatican workrooms to preserve paper manuscripts, wholly or partially threatened by corroding ink (pages 401, 405).

The *Osservatore Romano* is the city newspaper. It deals with the more important news and decisions of international import, the proceedings of the Papal Court, the activities and programs of the Pope.

Since the Lateran Accord, the printing plant has been removed to quarters within the Vatican City and completely equipped with up-to-date machinery. The editor is a layman, Count della Torre. The daily issue of *Osservatore Romano*, which is published in Italian, is about 50,000 copies, while the *Acta Apostolicae Sedis* is for the most part in Latin, with an occasional letter or proclamation in Italian.



**DIPLOMATS AND CLERGYMEN FROM MANY LANDS VISIT THE PAPAL SECRETARY**  
 Entering reception rooms under escort of a Pontifical Guard, they await their appointments. Thirty-seven countries now send official envoys to the Vatican City-State.



**FORTY SEALS STILL CLING TO A SEVEN-CENTURY-OLD PACT.**

Priceless is this document in the Vatican Library, confirming donations of lands by German rulers to the Pope. It was inscribed and sealed in 1245 at the historic Council of Lyons, at which Innocent IV deposed Frederick II, Holy Roman Emperor.



VATICAN CITY'S POST OFFICE USES UNITED STATES STAMP-CANCELING MACHINES

Modern cages for the sale of stamps and other up-to-the-minute equipment have been installed. The telegraph station also is located in this building, which was erected by Pope Pius XI. A familiar portrait of the Pontiff hangs on the wall. Another innovation in the small State is the railroad station, near the "frontier," reached by a double-track railway. Huge bronze gates close the aperture in the wall through which the tracks pass and they are opened only upon the infrequent arrival of trains. The railroad is used principally by State personages on formal visits. Usually transportation to and from Rome is by automobile.





BENEATH A MEDIEVAL BATTLE SCENE, SWISS GUARDS LEARN MODERN TACTICS.

Here, in barracks, the men wear a steel-blue fatigue uniform with wider tunic, knee breeches, dark-blue stockings, and laced boots. Another military unit of the Vatican is the Noble Guard, chosen from the nobility and always headed by a Roman prince appointed by the Pope. This group escorts the Pontiff to audiences and when he leaves his apartments. The Palatine Guard and the Pontifical Gendarmery are other ceremonial organizations. Actual police work in the State is carried on by a group of "plain-clothes men" who wear civilian attire (page 381).

A publication called *Illustrazione Vaticana*, an illustrated magazine, appears twice a month. The same press issues a weekly publication, *Rassegna Internazionale*, which deals with political phases of world interest.

For several hundred years the *Tipografia Poliglotta Vaticana* enjoyed international repute, but since 1910 it has been transferred to the Vatican Press. Needless to say, it requires expert management, which is not easily obtainable and is always expensive, especially when works are published in every kind of type—Roman, Arabic, Sanskrit, and Russian, as well as Hebrew and Greek. This press also publishes

the *Gerarchia Cattolica*, new choral editions, and similar works.

Among the most artistic and best-known industries of the Vatican City is that of mosaics. The perfection this art has reached is amazingly evident in the imitative reproduction of renowned paintings in St. Peter's, where almost all the altars are so adorned. The studio possesses a carefully catalogued set of more than 11,000 different colored glass pastes. Even small models require many years of painstaking and patient labor (pages 402, 403).

As gifts to royalty and rulers, the Pope occasionally selects particularly beautiful

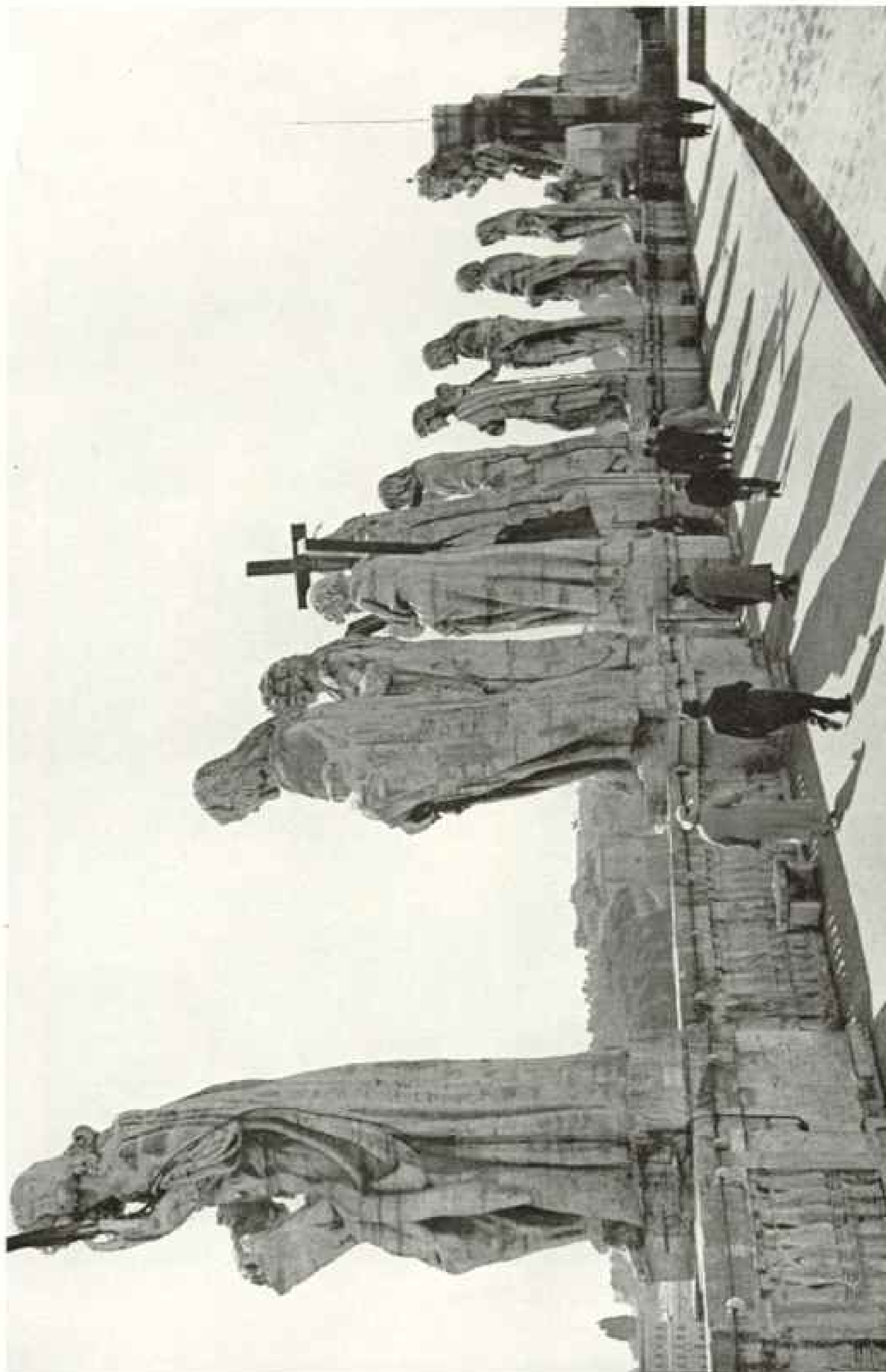
## Vatican City: Treasure House of the Ages



Photograph by G. Felini from *Wide World*

### POPE PIUS XI GREETES WORSHIPERS AT A JUBILEE IN ROME

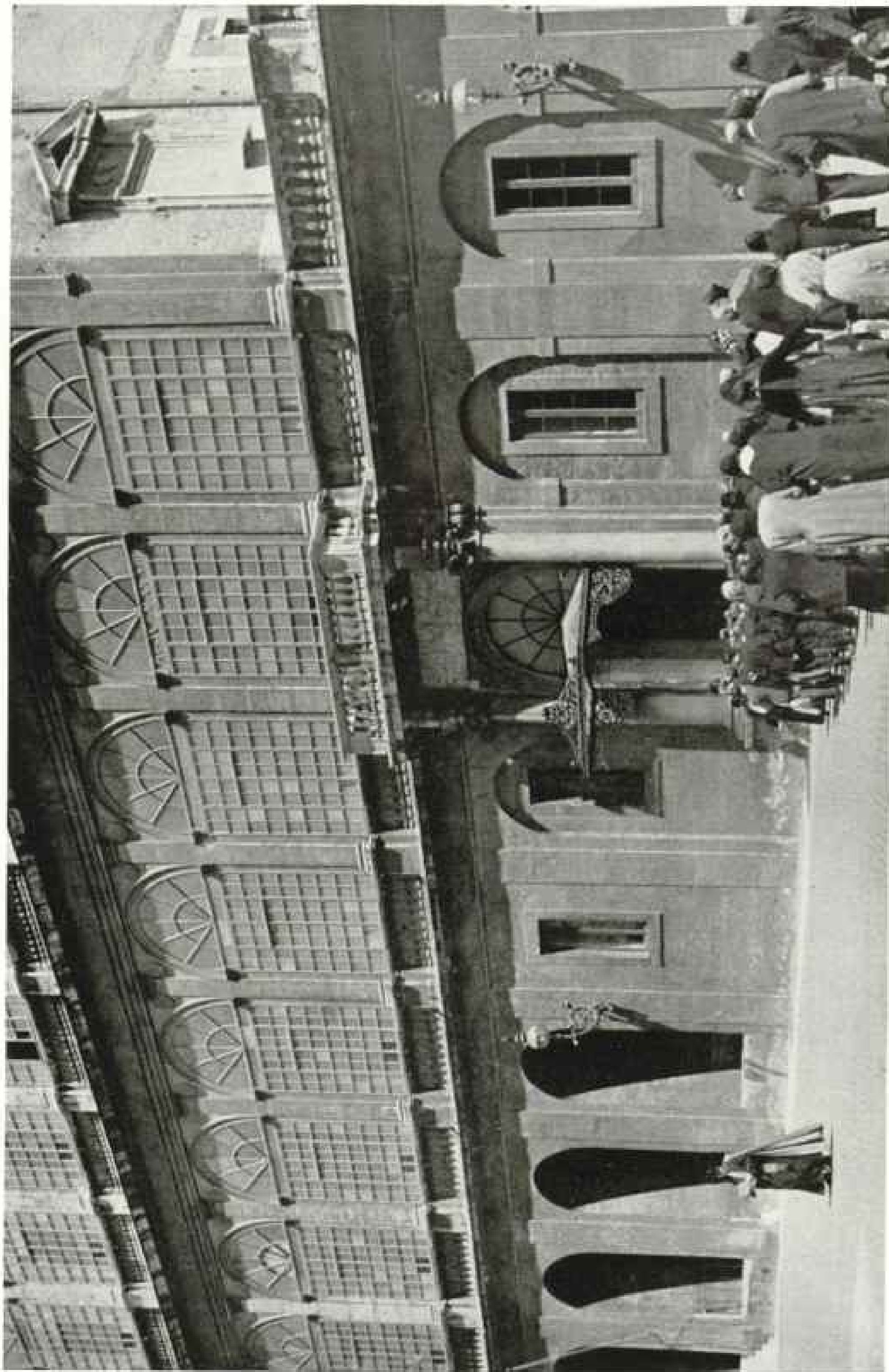
The Pontiff proclaimed 1933 a Holy Year to mark the nineteenth centenary of the Crucifixion. On April 1 he officially began observance when he opened the doors of St. Peter's by tapping upon them with a golden hammer. Here he appears on the balcony of Santa Maria Maggiore, largest of the 80 churches in Rome dedicated to the Virgin Mary. From the balustrade of the edifice, built fifteen centuries ago, hangs a tapestry with the papal emblems, tiara and crossed keys, and below them the personal arms of Pius XI.



Photograph by Hollibier from 'Three Lamps'

HEROIC STATUES OF THE SAVIOUR AND APOSTLES DWARE STROLLERS ON THE ROOF OF ST. PETER'S

The carved figures, 18 feet high, surmount the facade and gaze down into St. Peter's Square. They have occupied their lofty station, 167 feet above the pavement, for more than four centuries.



Photograph by Hollobar from Thrice Lima

**PILGRIMS ARRIVE AT NOON IN THE COURTYARD OF SAINT DAMASCUS, ENTRANCE TO THE APARTMENTS OF THE POPE**

Here Mussolini entered the Papal Palace on his historic visit of February 11, 1932, third anniversary of the signing of the Lateran Accord. Aycadris in the palace walls long ago were enclosed with glass to protect the priceless frescos within from exposure to dust and weather.



Photograph by Hollister from Three Lions

**EVEN GIANT STATUES ATOP THE ROOF SEEM SMALL FROM ST. PETER'S LOFTY DOME**

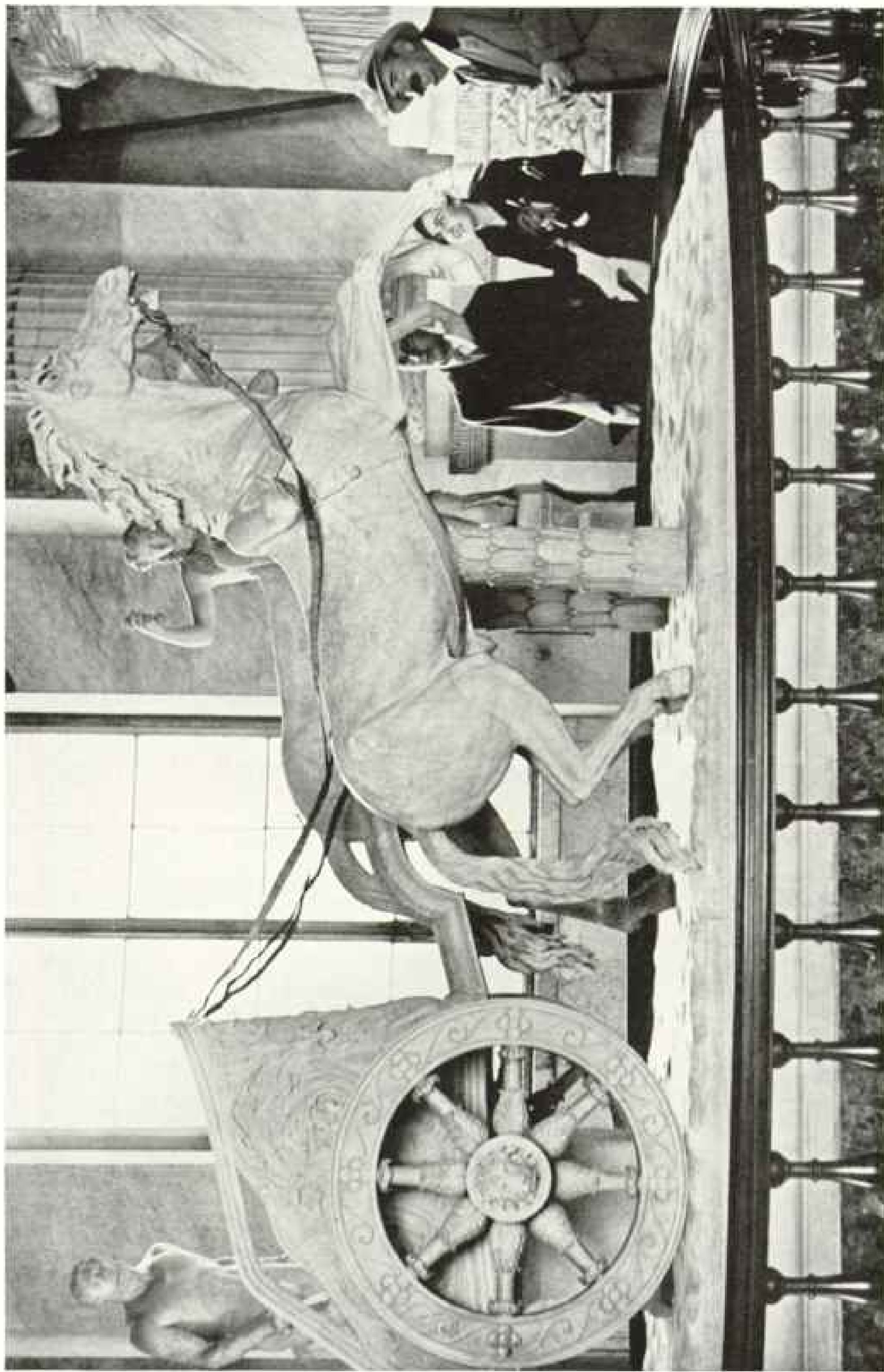
Pilgrims on their way up to the mighty dome arrive at this vast terrace, which is studded with small cupolas and guards' houses. Across the broad expanse of roof run streets and alleys. Even a post office is located here. Continuing their climb to the top, visitors look down upon St. Peter's Square, partially enclosed by the impressive colonnade shown in the background (page 400). As they turn, the entire Vatican City-State, with its historic buildings and gardens, spreads out more than 400 feet below. Beyond, in a vast panorama, stretch the Tiber and the metropolis of Rome.



Photograph by Hollister from *Three Lions*

NOW AN INDEPENDENT STATE, VATICAN CITY HAS BUILT ITS OWN "CAPITOL"

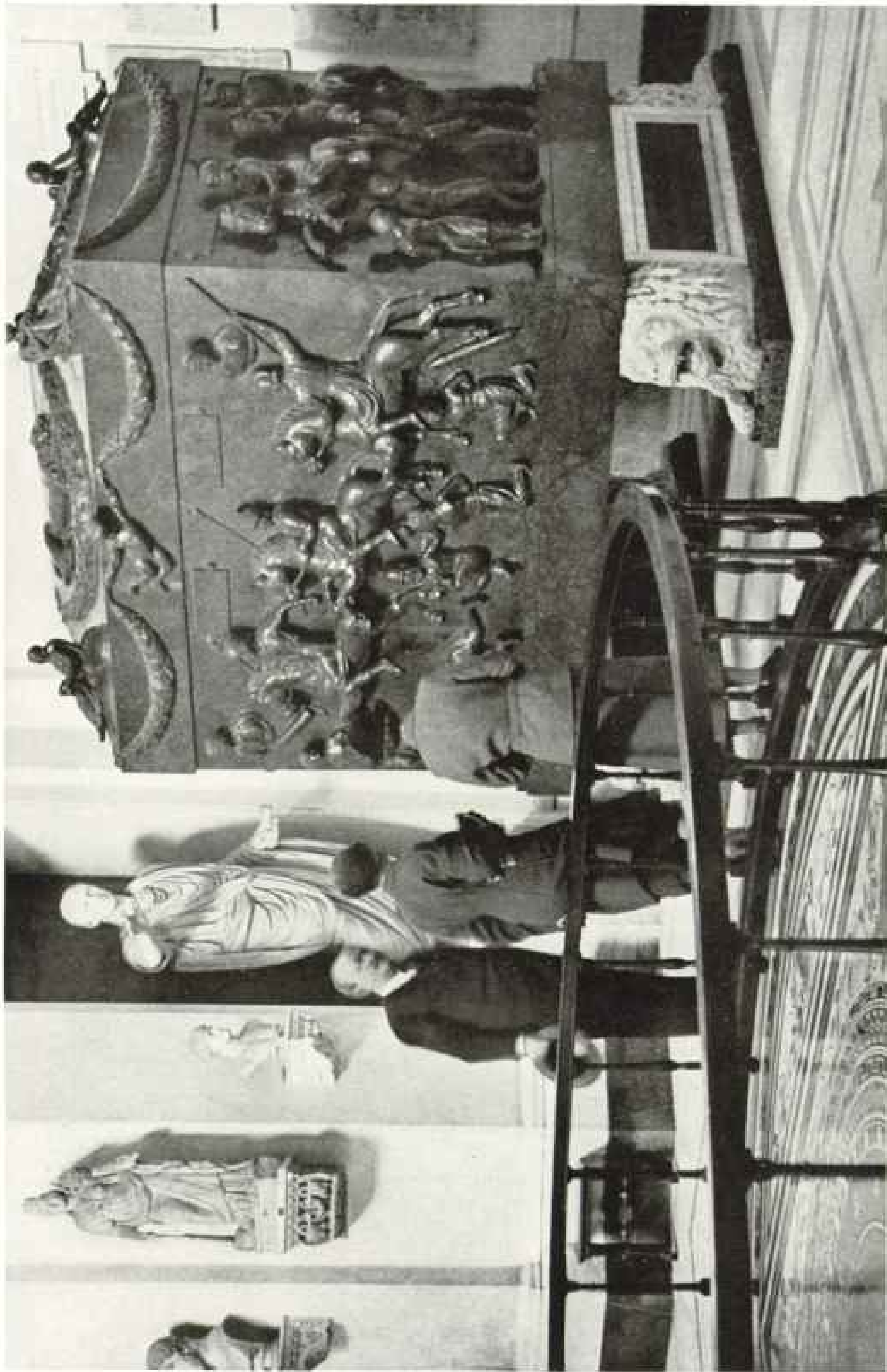
The imposing structure was dedicated after the signing of the Lateran Accord of 1929 (page 377). Here the Governor's apartments, administrative offices, and suites for distinguished guests are located. Between the building and St. Peter's, from which this view was made, lies a mosaic pavement, with the papal emblem marked in evergreens and flowers in the center. The crossed keys represent Christ's gift to St. Peter of the keys to the Kingdom of Heaven. The tiara is the symbol of temporal power. Surrounded by a garden (background) stands the new Ethiopian College, attended by students for the priesthood from that Italian colony.



Photograph by Tibbeler from Thierre Lébou

SCULPTORS SKILLFULLY RESTORED THIS MARBLE CHARIOT GROUP, ONCE A HEAP OF SHATTERED FRAGMENTS

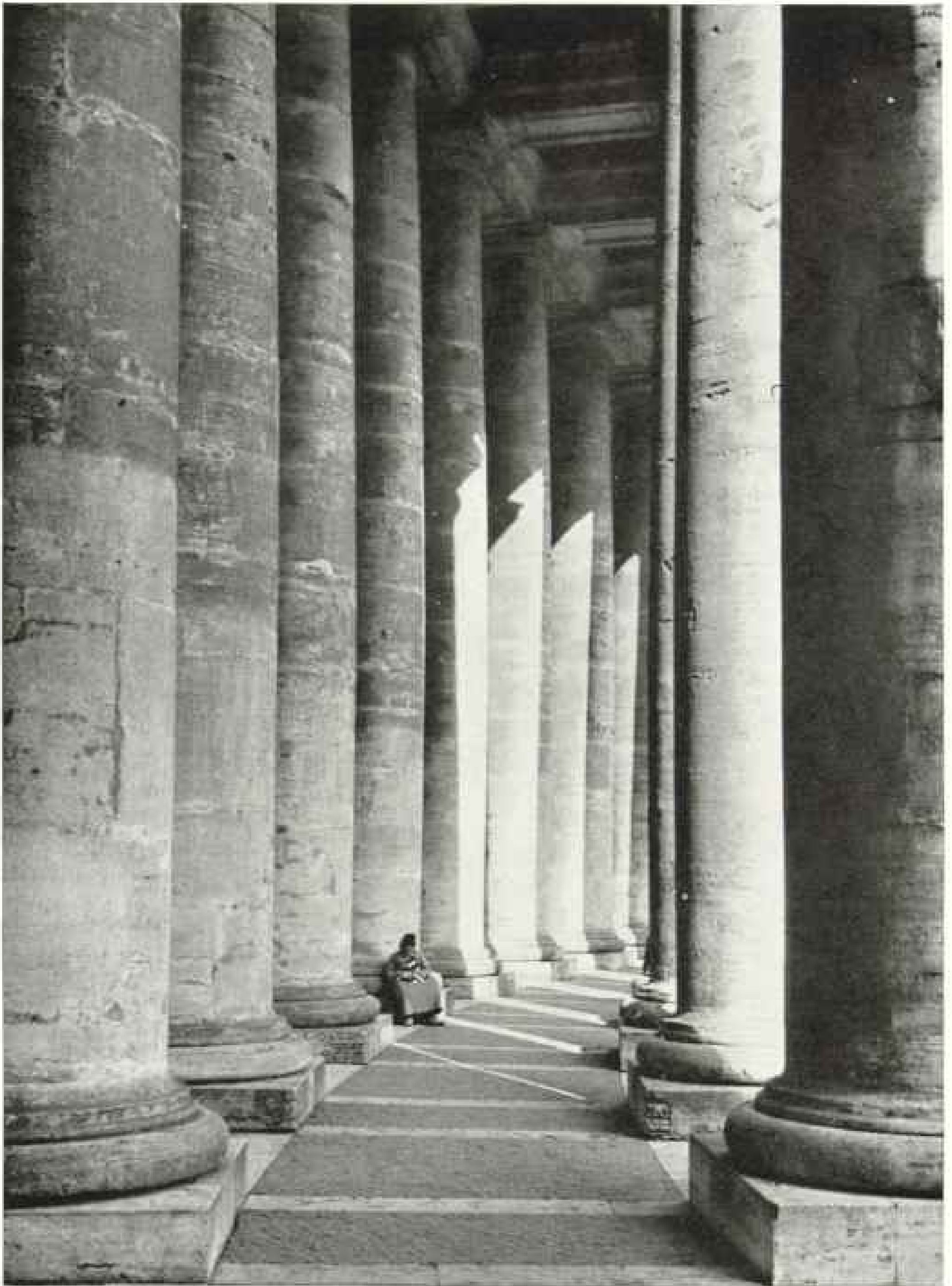
Found a century ago, the work of an unknown second-century artist was put together in the Vatican studios after many months of painstaking effort. Missing pieces were replaced. Sometimes the workers have only a few bits of stone from which to reconstruct an antique figure (page 401).



Photograph by Bulfinch from Three-Lights

FROM A RUINED TOMB NEAR ROME, THE SARCOPHAGUS OF ST. HELENA, MOTHER OF CONSTANTINE, FOUND ITS WAY TO THE VATICAN. Relief sculpture depicts the victories of her famous son. The coffin is of porphyry, found in Egypt and much used by the Romans. Porphyry consists of folded crystals embedded in a compact base of red or purple rock.





Photograph from Philip D. Goodreau.

#### HUGE SEMICIRCULAR COLONNADES OF MARBLE ENCLOSE ST. PETER'S PLAZA

Rising in four rows, the 284 giant columns provide three covered avenues at either side of the vast open space before the Basilica. Beyond the pillars at left the center passageway is wide enough for two carriages to drive abreast. The colonnades were erected by Bernini nearly 300 years ago at the direction of Pope Alexander VII. They are surmounted by balustrades on which 164 statues stand (page 396).

mosaics, such as the exquisite reproduction of Guido Reni's famous picture of St. Peter presented to President Wilson.

Since the middle of the 16th century there has been a pontifical school and studio of mosaics—an old and celebrated institute. The new edifice, situated just behind the Vatican City railway depot and near the Governor's Palace reared by Pius XI, is simple in its exterior. Here young and aspiring artists receive instruction. The studio also serves as an exhibition and salesroom.

Visitors to the Catacombs are immediately struck by the historically instructive and piously inspiring mosaics that have been hidden underground since the days of the Caesars. They furnish, not only in Rome but in Greece and elsewhere, a happy hunting ground for archeologists.

Another prosperous industry is that of manuscript repairing and bookbinding (page 405). The renovation of manuscripts seems to have been contemporaneous with the Vatican itself, and progress has been made constantly in step with the skill of each period.

#### MODERN CHEMISTRY HELPS PRESERVE OLD MANUSCRIPTS

During the last half century the preservation and freshening of faded parchment and paper manuscripts have received special chemical attention to offset the corroding influence of the ink. There is a special board, employed since 1896 in investigating and utilizing every discovery that can contribute to the preservation of these written and embossed treasures. In 1898 a successful international conference was called by the prefect of the Vatican to consider this all-important industry. This department for several years has had the best mechanical safeguards against fire.

Among the greatest restorations of modern times was that of Cicero's *De Republica*, unknown till 1822. Through the skill of Monsignor Angelo Mai, the then prefect of the Vatican Library, and with the aid of chemical reagents, the valuable books of Rome's great prose writer were almost miraculously brought to light from a palimpsest of the 7th century.

The Library possesses a manuscript of Dante's *Divina Commedia* which Boccaccio had presented to Petrarch. There are also several important manuscripts of Vergil, one dating from the 5th century.

The Library possesses more than 6,000

incunabula, many made more valuable by restoration (pages 388-9).

#### NUNS WEAVE GORGEOUS TAPESTRIES

Included in the industries of the Vatican City is that of tapestry making. The unpretentious workshop is operated by nuns whose patience is often taxed but never conquered in the effort to restore priceless hangings (page 404). The repair and the making of tapestries, like the building of Rome, are not accomplished in a day. Three or four years are often consumed in a restoration, or in the creation of a new tapestry, with its design, its variegated threads, its careful and painstaking weaving.

In 1930 Pius XI presented to the Library of Congress reproductions of 15 papal bulls issued before the year 1000. The gift was made in recognition of the aid given by Mr. Charles Martel, chief cataloguer of the Library of Congress, and by two associates who went to Rome in 1928 to help install the Library of Congress cataloguing system in the Vatican Library.

Great assistance had also been rendered in Washington to Monsignor Eugène Tisserant (now Cardinal) and Enrico Benedetti, and to Professor Don Carmelo Scalia, who were all of the Vatican Library staff and had come to the United States to study the methods used in the Library of Congress.

Cordial relations between the two libraries have resulted in the presentation by the Vatican of a large set of photographic reproductions of pontifical papers of historical value, especially in their bearing on the early years of the New World. Of these, the most interesting is the photostat copy of the Treaty of Tordesillas between Spain and Portugal to enforce the decree of Pope Alexander dividing the newly discovered lands between the two powers. The bull was issued May 4, 1493; the treaty, which somewhat readjusted the division, was signed the following year.

The Vatican has such abundance of masterpieces of all ages for the instruction of scholars and artists that if some unthinkable catastrophe should destroy all other collections, critics say the five great museums would suffice for the perpetuation of esthetic culture, pagan as well as Christian.

The Museo Pio-Clementino is the oldest collection of antiquities in the world. Among the many treasures it contains are the familiar, because frequently reproduced, Belvedere Torso (page 410), Apollo Bel-



TWENTY CENTURIES HAVE NOT DIMMED THIS MOSAIC'S BRILLIANT COLORS  
 Found in a garden of ancient Tusculum in 1741, the intricate work was brought to the Vatican.  
 Every detail of the pattern is still visible. The Vatican museums abound in art treasures.



MAKING MOSAIC MINIATURES TESTS EYES AND NERVES

Shape and size of each tiny stone is determined beforehand. Each bit is fitted into place on a bed of cement, joining the edges of the pieces next to it with delicate exactness. When the last fragment is in place, the whole surface is ground and polished until it appears as a smooth plate of stone. Some mosaics above the altar of St. Peter's entailed 20 years of arduous work.



TIERS OF DRAWERS STOCK 28,000 VARICOLORED STONES FOR THE MOSAIC STUDIO

These small fragments of jasper, marble, agate, and glass, classified by shade, some day will appear in a work of art. Near by is a furnace in which two bits of color may be fused together, to attain an elusive tint. So wide is the range on hand that this process is not often necessary (page 392). Fine examples of Vatican mosaics are enshrined at Catholic University and at Georgetown University, both in Washington, D. C.

vedere, and Laocoön. This same museum possesses one of the few ancient statues of which the head has never been separated from the trunk—that of the youthful Octavian, the great Augustus Caesar, whose bimillenary birthday has just received world-wide commemoration.\*

While the Library is surpassed by others in the number of printed books and by a few in the number of manuscripts, it is, in the importance of material, foremost among the libraries of the world (pages 385, 387, 388). It was founded as a manuscript library, and printed books acquired through gift or purchase are primarily intended to facilitate and promote the study of manu-

\* See "Augustus—Emperor and Architect," by W. Coleman Nevils, NATIONAL GEOGRAPHIC MAGAZINE, October, 1938.

scripts. The total manuscript collection numbers about fifty thousand.

The Vatican Archives contain about 60,000 volumes, cassettes, and bundles, and in some of these there are as many as 2,000 documents. It is estimated that there are about 120,000 parchment and paper documents. There is a veritable labyrinth of indices.

#### HOW THE CITY IS GOVERNED

Because of the unique constitution of the Vatican City-State, the government is not easy to classify in the usual recognized forms of political science.

It is called a sovereignty. While the full executive powers are invested in the Sovereign Pontiff, there was created on June 7, 1929, by a pontifical law, the office of



ITALIAN DELICACIES INVITE BUYERS AT THE CENTRAL GROCERY

Staple goods line the shelves, but meat, fruit, and vegetables are sold elsewhere. Next door, at a village tavern, townsfolk drink coffee made on a special machine of glittering chrome. Each cup is prepared individually, by a process in which steam is passed through the grains.



NUNS PATIENTLY REPAIR A PRICELESS GOBELIN

In their workshop they ponder the correct shade of thread to match the original. Sometimes years are required to complete a restoration. The most famous tapestries in the Vatican, designed by Raphael four centuries ago, were woven on the looms of Flanders. Twice the exquisite hangings have been torn from the walls by invaders and spirited away. Despite mishandling, they were painstakingly repaired upon their return and still flash their rich coloring. New tapestries also are made here. When a particularly fine one has been finished, the Pope cuts the warp with golden scissors.



SKILLFUL ARTISANS RESTORE WHAT "MOTH AND RUST BOTH CORRUPT"

Fungus, mice, and insect enemies have virtually ruined this venerable book; yet with the help of modern chemistry it will become a readable document. A small army of experts labors daily in the restoration shops of the Vatican Library to give new life to ancient works. Hundreds of thousands of old manuscripts need constant care and repairing (pages 389, 401).

Governor of the Vatican City, for the protection of property, the maintenance of public order and hygiene, and the ordinary relations with the Italian State.

The Governor, who is appointed by the Pontiff, is assisted by a secretary-general and a central council. He supervises and exercises immediate control of all public service, such as wireless telegraphy stations and similar civic centers, and regulates all administrative and financial transactions within the Vatican City.

By the ratification of the Lateran Accord, the See was willing to accept far less than was due by the Law of Guaranties. According to the financial agreement, seven hundred and fifty million lire (about \$39,375,000) was stipulated in currency, and a billion lire (about \$52,500,000) in five per cent Italian Government bonds.

This was a comparatively small payment as indemnity due for losses sustained by the See in 1870. It is reported that the Vatican has limited itself to drawing fifty million

lire annual interest, presumably to cover in part current expenses of the city. The Vatican has its own coinage.

A special law court, the Tribunal of First Instance, has been created to hear and pass judgment on civil and penal cases in the Vatican territory. The Tribunal of Sacra Romana Rota acts as a court of appeals. The constitution provides a complete legal system. Persons who have committed crimes on Italian soil and take refuge in the Vatican City are by agreement to be handed over to the Italian police.

When Pius XI refused further territory which was offered by the Italian Government, he is reported to have said: "I have no desire to have subjects."

At a later interview he remarked: "We desired to have the minimum of territory, only so much as to allow the Holy See to perform its spiritual office with complete sovereignty in its own domain."

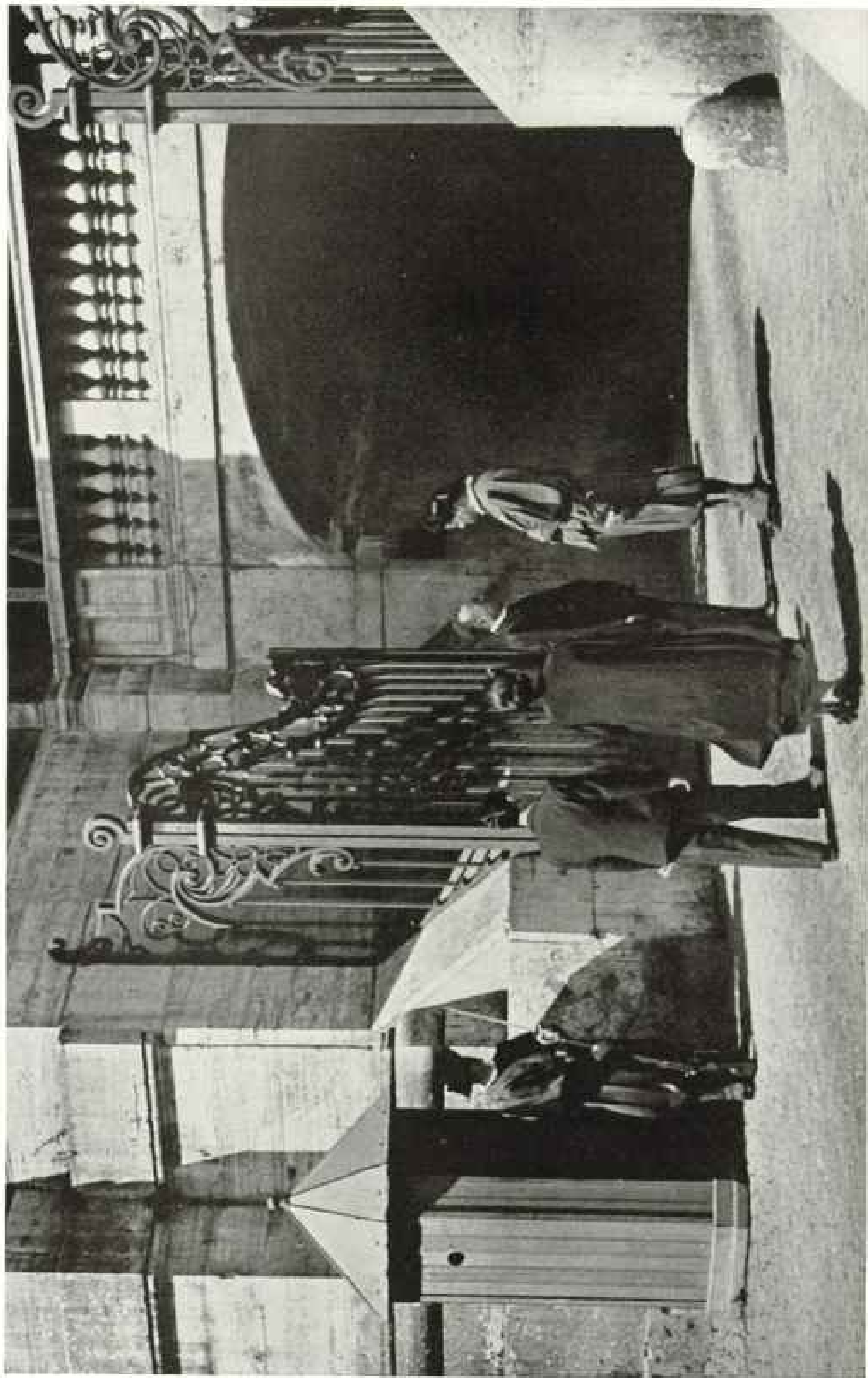
Pontifical citizenship is limited to cardinals resident in Vatican City or in Rome,



Photograph by G. Felici from White World

PIUS XI MARKS HIS CORONATION ANNIVERSARY IN THE SISTINE CHAPEL

From the papal throne at one side of the altar, surrounded by Vatican clergy, he celebrates Mass. Achille Cardinal Ratti, Archbishop of Milan, became Pope on February 6, 1922. Behind the crucifix in this chapel of the Popes is Michelangelo's masterpiece, "The Last Judgment." Above the throne are Renaissance frescoes.



SWISS PAPAL GUARDS SCRUTINIZE ALL WHO ENTER THE VATICAN

Members of the historic company have guarded the Pope and protected the Apostolic Palaces for more than four centuries. In 1505 the Swiss cantons of Zurich and Lucerne made a pact with Pope Julius II to supply 250 soldiers as a bodyguard. Today the number has been reduced to 110 men and ten officers. They still wear their 16th-century uniforms of blue, yellow, and red; modified in design by Michelangelo. Hats are black with red strings (page 384).





A SWISS GUARD HELPS A COMRADE DON RUFF AND ARMOR.

Only on festive or particularly solemn occasions do the guardsmen wear their four-century-old plumed helmets and coats of iron. When the Pope is borne aloft on his portable throne (page 381), he is surrounded by six armor-clad members of the company. Despite infrequent use, the historic armor is cleaned and polished daily.

and to any others having fixed residence in the city for reasons of dignity, charge, office, or employment.

A news dispatch from Rome October 9, 1930, reported that, according to a census of that year conducted by the Government of the Vatican City, there were 530 citizens. Of these 389 were Italian, 118 were Swiss, 11 were French, 5 were German, and 2 were Spanish. Norway, Austria, the Netherlands, Ethiopia, and the United States were represented by one each. To-day the population is placed at slightly more than a thousand.

Visitors to the Vatican City find it a relief that no passports are required. There are no customs lines to pass, no immigration agents to satisfy.

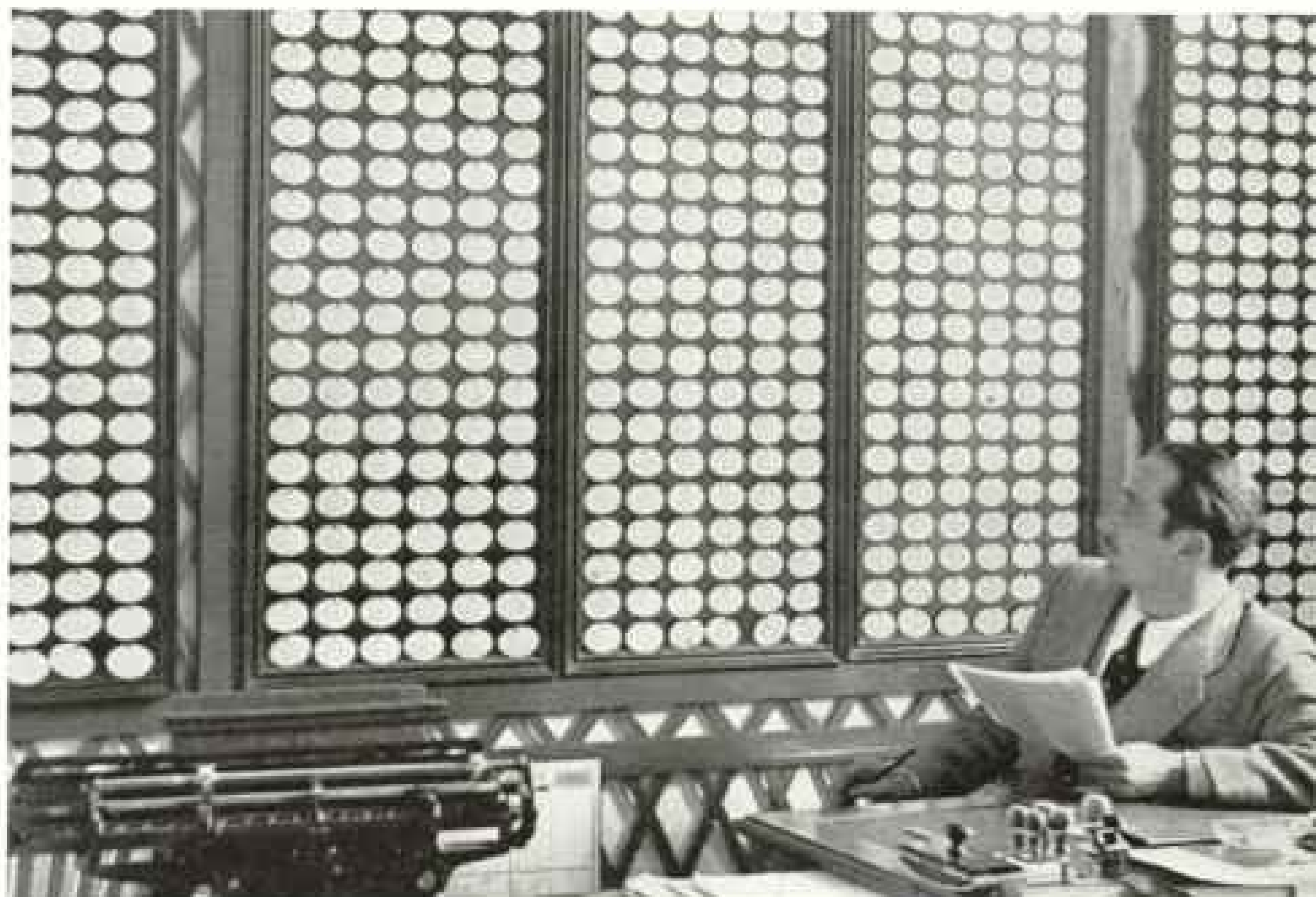
At the actual frontier of the pontifical State, which is at the northern side of the Basilica of St. Peter, there is a gate where foreign visitors are given special permits.

A reassuring welcome is given in a kindly way by a Swiss Guard in striking uniform.

Despite the ease of entrance and the graciousness of officials on all sides, one cannot escape a feeling of remoteness from the usual modern environment. There is something of a wonderland about it all, like a dream that one has fallen between the illustrated pages of a medieval tale.

Still another unique relief is that there are no traffic problems, even on "Main Street" of the Vatican City, as *Via Delle Fondamenta*, which rounds the rear of the Basilica, has been called. Nor is there a shopping district with intrusive advertisements or electric signs; one can go or stop as he pleases, whether he sees green, red, or yellow.

Modern business conditions are completely absent, though there are no signs of depression. Actually, one who returns now to Rome after an absence of more than ten years feels, at sight of the elaborate



"CASE RECORDS" OF EACH PLANT IN THE NEW ROCK GARDEN COVER THIS WALL.

Index cards show the care and treatment required by the hundreds of blooms, which thrive in this latest botanical development of Vatican City. Plants have been received from many parts of the world, including the United States and islands of the South Pacific.



CARDINAL PACELLI, PAPAL SECRETARY OF STATE, IS A FAMOUS LINGUIST

Once he addressed an international press conference in Vatican City, speaking in seven languages. The Pope described the accomplishment as a feat of "Pentecostal eloquence." Cardinal Pacelli visited the United States in 1936. On his desk venerable inkstands and pens contrast with new dial telephones. A precious silk tapestry adorns the wall.



RELIC OF SUPERB GREEK SCULPTURE IS THE FAMOUS BELVEDERE TORSO

Many authorities believe the figure probably was a statue of Hercules, carved by Apollonius in 69 B. C., when he visited Rome. It rests on a revolving stand in the vestibule of the Belvedere, where it was brought by Pope Clement VII. Michelangelo drew inspiration from studying it.

Governor's building and some smaller structures which have arisen, that there has been in the interval something of a building boom.

An atmosphere of conservatism pervades all, however, and age-old customs seem to possess the right of eminent domain. Only a hardened iconoclast or prosaic Philistine would have it otherwise.

#### A MOTORCAR IN THE VATICAN STABLES

While Pius XI is most conservative in the essentials of the pontifical sovereignty, in accidentals he is progressive. From his earliest years he was interested in scientific progress. It is not surprising, therefore, to find during his pontificate a magnificent modernization in the Vatican.

In the first year of his reign, 1927, the first automobile made its appearance. It was presented by the Milanese admirers of

their former Cardinal-Archbishop. The machine was taken into the Belvedere Courtyard, where with almost boyish glee the Pontiff received it personally and immediately went for a tour of the Vatican Gardens. It had to be housed in the old-fashioned coach house for the papal carriages.

Today several up-to-date motorcars reside with the once-honored carriages.

The Pontiff's first favorite car was of American make; it bore the license plate "Vatican City I." In addition, there are two cars of Italian make, one of French, and one of German. The cars carry the pontifical coat of arms. On December 20, 1929, an American-made car carried the Pope to the Basilica of St. John Lateran—the first excursion made by a Pontiff in 59 years.

While for convenience and luxury the modern automobile far surpasses the old-time conveyances used for centuries, the



OIL, ALCOHOL, AND AMMONIA HELP RESTORE THIS FADED OLD PAINTING

Where colors have disappeared entirely, Vatican artists repaint the design, after tedious matching of shades. Then they cover the work with a thin layer of liquid resin which is exposed to alcoholic fumes. This prevents the paint from becoming brittle again. Sometimes the canvas is so fragile it must be reinforced by additional layers on its back.

elaborate coaches drawn by six horses were a more gorgeous spectacle and to the old-timers more suitable.

Among the many interesting characters in the Vatican City a few years ago was the official coachman. He had held this exalted position to five different popes, from Pius IX to Pius XI. Alas, with the introduction of the more efficient, though less picturesque, motorcar, his usefulness, which already was declining on account of his age, became for him painfully lost. Up to his departure from this world, he still clung to the pontifical stable and sighed unto tears as he discoursed of the good old days of coach and four.

Since American cars predominate among all the automobiles of the Vatican City, the visitor from the United States feels at home as they move by. In one of the

garages, all but five of 20 or more automobiles are from America. Five are of native workmanship.

#### MARCONI INSTALLED THE VATICAN RADIO

The Vatican possesses one of the most powerful broadcasting stations in the world. The late Marchese Guglielmo Marconi, genius of wireless, generously made the installation early in 1931, shortly before his last visit to the United States (page 380). The station is furnished with most elaborate equipment, and it is reported that the Pontiff enjoyed on several occasions the detailed account of Marconi's explanation of the apparatus, showing greatest interest in the newest mechanical devices.

The world-wide enthusiasm over the Pope's first broadcast, on February 12, 1931, need only be mentioned. Marconi

himself superintended the transmission, introducing to the world the voice of the Pontiff, heard for the first time on the air. Because of short wave, all parts of the world can be on the receiving end.

#### A LENGTHY NEWS DISPATCH

One of the longest news dispatches to come out of Vatican City was sent entirely over the radio, May 21, 1931. It was the Pope's encyclical on Labor, a message of 18,250 words. His encyclical on Marriage, 18,000 words, came partly by radio and partly by cable. American newspapers have frequently printed such messages in full. The complete text of the encyclical on Marriage, for example, appeared in the *New York Times* January 9, 1931.

Perhaps the walls of the Vatican, some fourteen feet thick, never experienced greater surprise than during a month of 1930 when some American engineers were sent over by the International Telephone and Telegraph Company of New York to bore them through for the installation of an elaborate and up-to-date telephone system.

The proud and priceless frescoes of the Loggias, the Library, the museums, and the marvelous walls of the Sistine Chapel must have shuddered at such intrusion from abroad.

Of all the modernization accomplishments, this was the least expected. Yet such has been the skill and expertness of the architects and workmen that no jot or tittle of beauty has been marred and greatest utility has resulted. Perfect restoration has been effected.

Up to 1929 the telephone system was meager, comprising four or five telephones at the most, and the "central" was in the control of the firemen, whose official duties have been very slight.

Now there are telephones wherever there is any possible need, from the cupola of St. Peter's to the underground workshops. Moreover, the system is so installed that communication can be had with any country in the world.

#### PAPAL TELEPHONE 101

The Pontiff was presented with a solid-gold telephone, which now rests upon his desk. It is embossed with the papal arms and images of the four Evangelists. While the telephone book lists the Holy Father's number as "one-o-one," his receiver is unresponsive to the touch of dial, and only

a private secretary can arrange a hearing.

The company has reported that nearly 300 miles of wiring have been installed and that there is a capacity for approximately one thousand telephones. There are 30 wires going to the outside.

In addition to the telephones, there are several competent loud-speakers in the great Basilica and also in St. Peter's Square. These are used for all of the greater ceremonial functions.

The Pope is patient with photographers; in fact, he is said to have remarked wittily that one of the reasons for the creation of the world seems to be that it may be photographed. However, he is opposed to motion-picture cameras and has prevented their introduction.

Scores of American-made typewriters are in use by the secretarial staff of the Vatican City. The Pope also uses an American-made fountain pen from a desk set which was presented to him. Through the personal use of an American safety razor he has dispensed with an official barber. He accepts no valet assistance in dressing.

#### MIDDY CHEERS IN THE CONSISTORY

Perhaps the pinnacle of modernization was scaled a few years ago when the Hall of the Consistory, the damask walls and gilded ceiling of which were more accustomed to the placid and dignified voices of Their Eminences, the Cardinals, reverberated with nine shouts of "N-A-V-Y" and "Three cheers for the Holy Father!" given by a hundred midshipmen from the United States Naval Academy.

When the cheer ended, the Pope exclaimed in English: "Do it again; it's worth an encore!"

The lads from Annapolis had been granted an audience, and Pius XI had made them an address on patriotism, extolling the glories of their native land. When he waved his hand in greeting, the cheerleader gave him the unprecedented experience of a hearty handshake. It was most graciously received.

The Vatican City is the newest sovereignty in the world, and yet the oldest. While it presents in many phases the sublimation of this modern mechanical age, its customs and traditions are centuries old. From its hundred-odd acres it extends its influence to every quarter of the globe, and like a small, mighty, almost invisible spotlight, its rays penetrate all the continents.

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## ORGANIZED FOR "THE INCREASE AND DIFFUSION OF GEOGRAPHIC KNOWLEDGE"

To carry out the purposes for which it was founded fifty-one years ago, the National Geographic Society publishes this Magazine monthly. All receipts are invested in The Magazine itself or expended directly to promote geographic knowledge.

Articles and photographs are desired. For material which The Magazine can use, generous remuneration is made. Contributions should be accompanied by addressed return envelope and postage.

Immediately after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. Four expeditions have followed and the extraordinary scientific data resulting given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures. As a result of The Society's discoveries this area has been created a National Monument by proclamation of the President of the United States.

The Society cooperated with Dr. William Beebe in a deep-sea exploration of undetected life off Bermuda, during which a world record depth of 3,028 feet was attained August 15, 1934, enabling observations of hitherto unknown submarine creatures.

The Society also had the honor of subscribing a substantial sum to the expedition of Admiral Peary, who discovered the North Pole, and contributed \$100,000 to Admiral Byrd's Antarctic Expeditions.

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

The Society's notable expeditions to New Mexico have pushed back the historic horizons of the southwestern United States in a period nearly eight centuries before Columbus crossed the Atlantic. By dating the ruins of the vast communal dwellings in that region, The Society's researches have solved secrets that have puzzled historians for three hundred years. The Society is sponsoring an archaeological survey of Venezuela.

On November 11, 1935, in a flight sponsored jointly by the National Geographic Society and the U. S. Army Air Corps, the world's largest balloon, *Explorer II*, ascended to an officially recognized altitude record of 72,395 feet. Capt. Albert W. Stevens and Capt. Cyril A. Anderson took aloft in the gondola nearly a ton of scientific instruments, and obtained results of extraordinary value.

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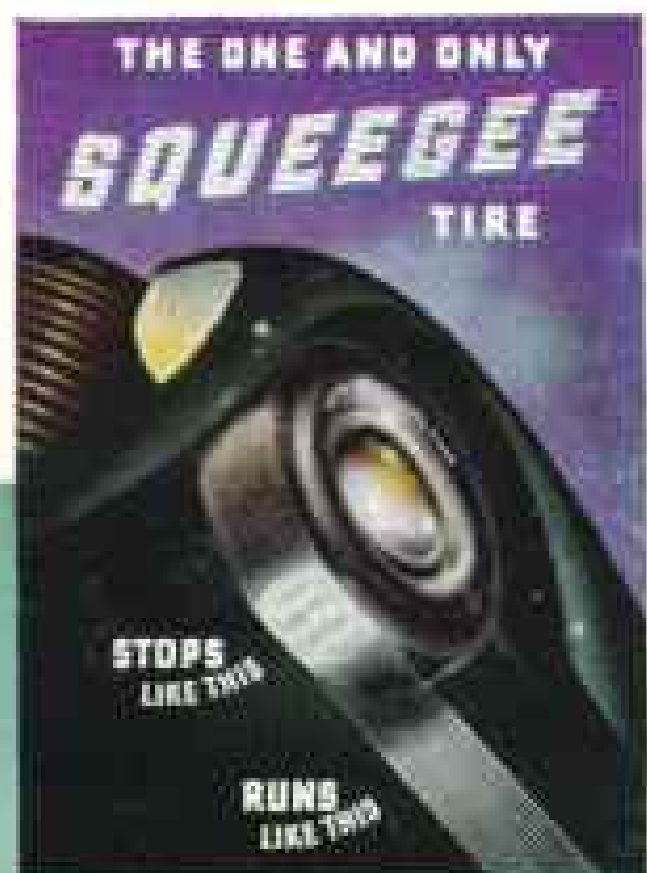
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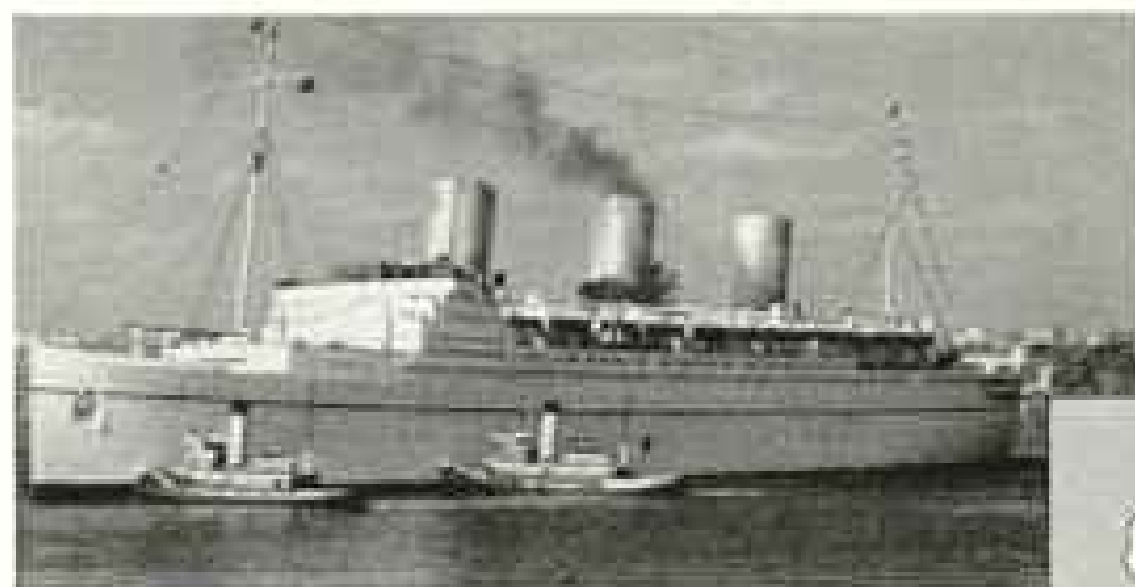
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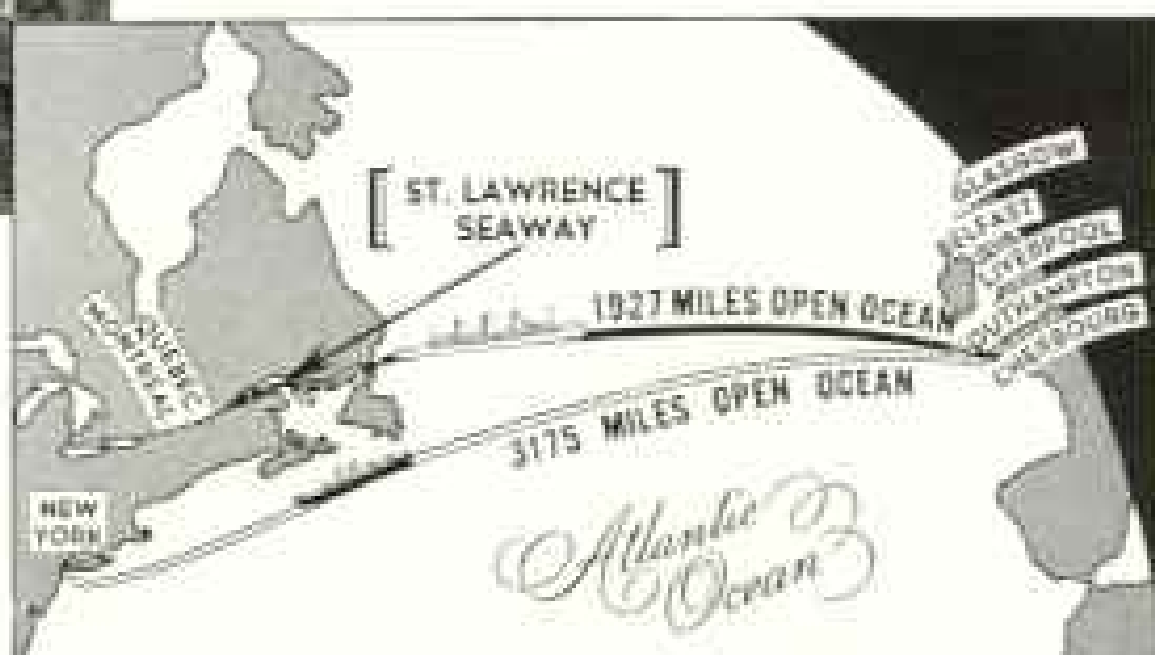
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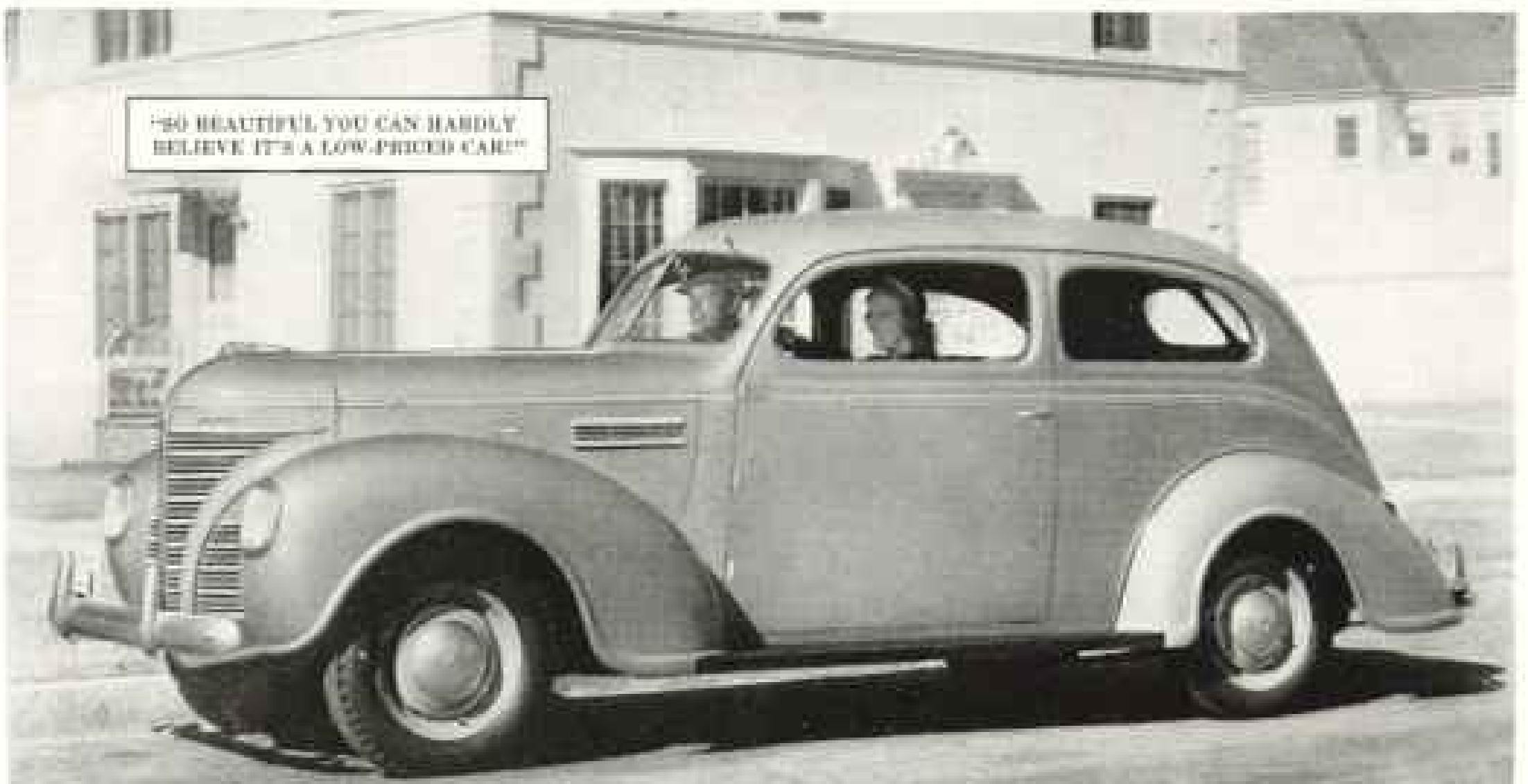


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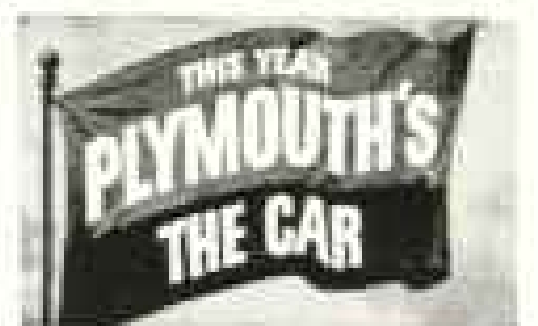


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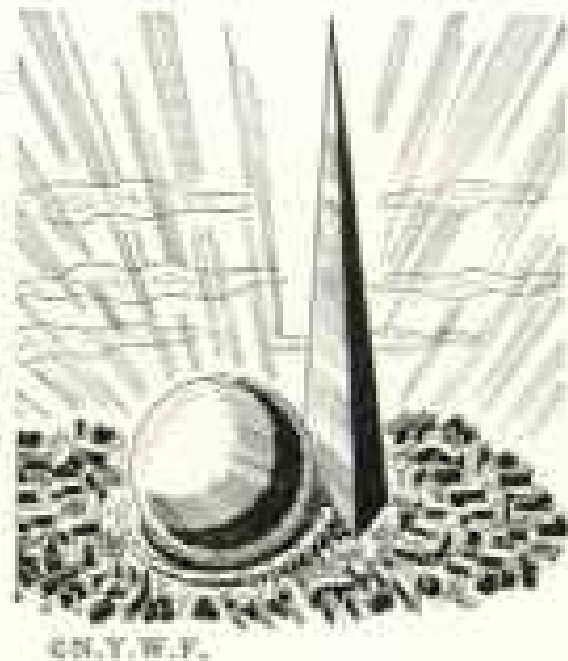
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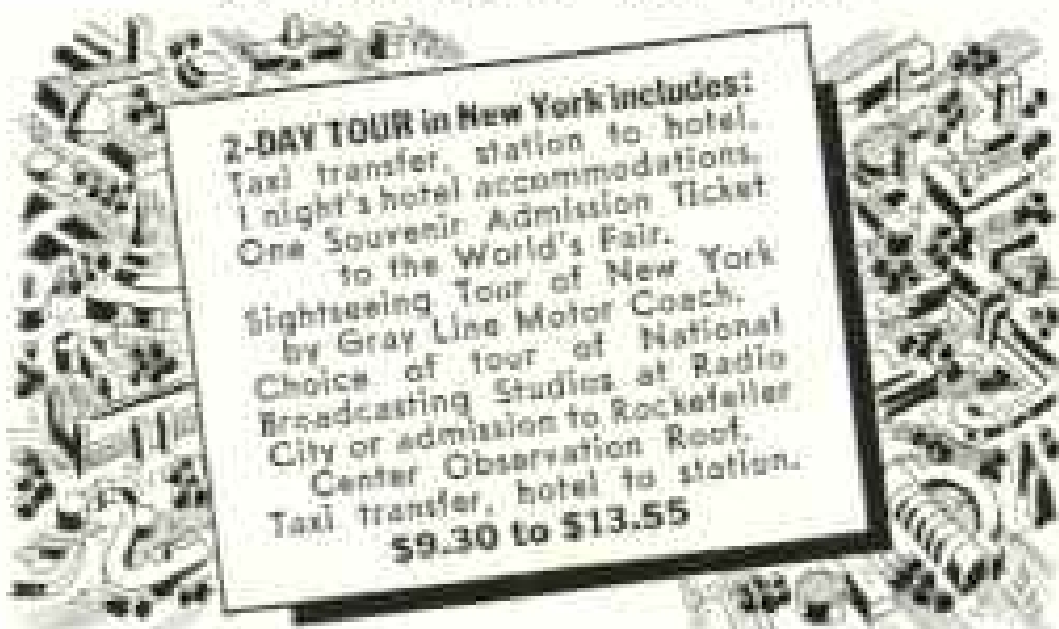
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You practically can't help coming to New Jersey this year. The state offers you every outdoor sport—plus the facilities for visiting the World's Fair and returning the same day. Swim at Jersey's famous beaches—the finest in the world. For fishing—well, the record U.S. tuna was caught off the Jersey coast. You'll find the surf, stream and lake fishing equally as good. Beautiful, lake-studded mountain country. Many excellent golf courses and historic spots galore. Make a New Jersey hotel your carefree, hospitable home during the World's Fair. No increase in hotel rates; sharply reduced travel fares. Send coupon.

**THE PERFECT STATE  
TO PLAY, LIVE AND  
WORK!**

**NEW JERSEY COUNCIL**  
*Created to Tell You About  
one of the Great  
Vacation Lands*



→ → → **free** → → →

New Jersey Council, Dept. N10, State House,  
Trenton, New Jersey  
Kindly send me three booklets giving authentic information  
for a New Jersey vacation:  
(1) New Jersey; "The Playground of the Nation"  
(2) Hotel Guide (3) Road Map

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_



This summer, come up to our glorious northland where nature tumbled rock, lake and forest together in wild, scenic splendor. Come and push your canoe a hundred miles into the wilderness over silvery rivers and lakes.

Here is nature in all her unspoiled beauty. Fishing to gladden the heart—gamey trout, fighting bass and musky. Big game around the next bend in the river.

This year new King's highways lead through virgin country. Ontario is in gala array for the King's visit. You'll enjoy shopping in the stores of our beautiful cities.

**CLIP and MAIL** the coupon for free 72-page book containing 150 photographs.



Ontario Travel & Publicity Bureau  
Parliament Bldg., Toronto, Canada  
Please mail me free your 72 page  
book on Ontario, also complete road  
map showing highway connections  
from United States points.

Name \_\_\_\_\_  
Address \_\_\_\_\_





See America from an  
**"OBSERVATION" BODY!**



In the 1939 Oldsmobiles you get larger windshields—larger by 30% in the Olds Seventy and Eighty. In addition, you get increased vision all around—as much as 412 square inches greater windshield and window area. And all of it's safety plate glass!

All Olds Models for 1939 Also Give You the Amazing New

- RHYTHMIC RIDE**  
 BASED ON
1. QUADRI-COIL SPRINGING
  2. 4-WAY STABILIZATION
  3. KNEE-ACTION WHEELS

VISION as wide as all outdoors is yours in the 1939 Olds Seventy and Eighty. And there's room to relax as you look about you. Oldsmobile's new "Observation" Bodies by Fisher are wide and spacious and luxuriously appointed. They banish forever that cooped-up sensation—do away with that feeling of crowding, even when six people ride. Olds Sixty bodies, too, are big and roomy and wide of vision. In an Olds for 1939—whether it's the low-priced Sixty or the popular-priced Seventy and Eighty—you get more pleasure from travel. You enjoy a combination of smooth, fast-stepping performance and a ride that has no rival—with plenty of room for passengers and plenty of trunk space for luggage. Before you see America... see the Olds!

**"YOU OUGHT TO OWN AN OLDS"**  
 • A GENERAL MOTORS VALUE •



to see  
**MYSTIC TOTEMS**

NOTE: These hand-carved, strangely-colored totem poles stand today in Alaska as bizarre reminders of a bygone day, when Alaska saw the rule of great Indian chiefs.

**SOON**, start on your way to nearby Alaska, where summer lasts from *May through September*; where the seas are sheltered by snow-crowned mountains; where wild flowers bloom beside roaring glaciers beneath the Midnight Sun; where totems stand guard over wooded trails.

Your unequalled Alaska vacation starts the moment you board a modern, completely air-conditioned train to speed over scenic routes to Seattle. Northward your one-class All-American steamer sails to a fascinating land where you make frequent visits ashore at modern towns whose historic streets still whisper of the past when Russians came, and sourdoughs answered the lure of gold. You will follow those sourdoughs to Alaska's golden heart — to Matanuska Valley, Mount McKinley, and the Klondike.

Attractive rail and all-inclusive steamer fares apply to Alaska vacationland. Choose from short and longer cruises and cruise-tours, with sailings from Seattle several times weekly, May-through-September. And, en route to or from Alaska, visit the San Francisco World's Fair.

For fascinating **FREE** Alaska Vacationland literature mail the coupon to Alaska Steamship Co., Room 911, Pier Two, Seattle; and book early thru one of these lines →

- SOUTHERN PACIFIC
- BURLINGTON ROUTE
- GREAT NORTHERN
- THE ALASKA RAILROAD
- NORTHERN PACIFIC
- NORTH WESTERN LINE
- THE MILWAUKEE ROAD
- UNION PACIFIC
- ALASKA STEAMSHIP CO.

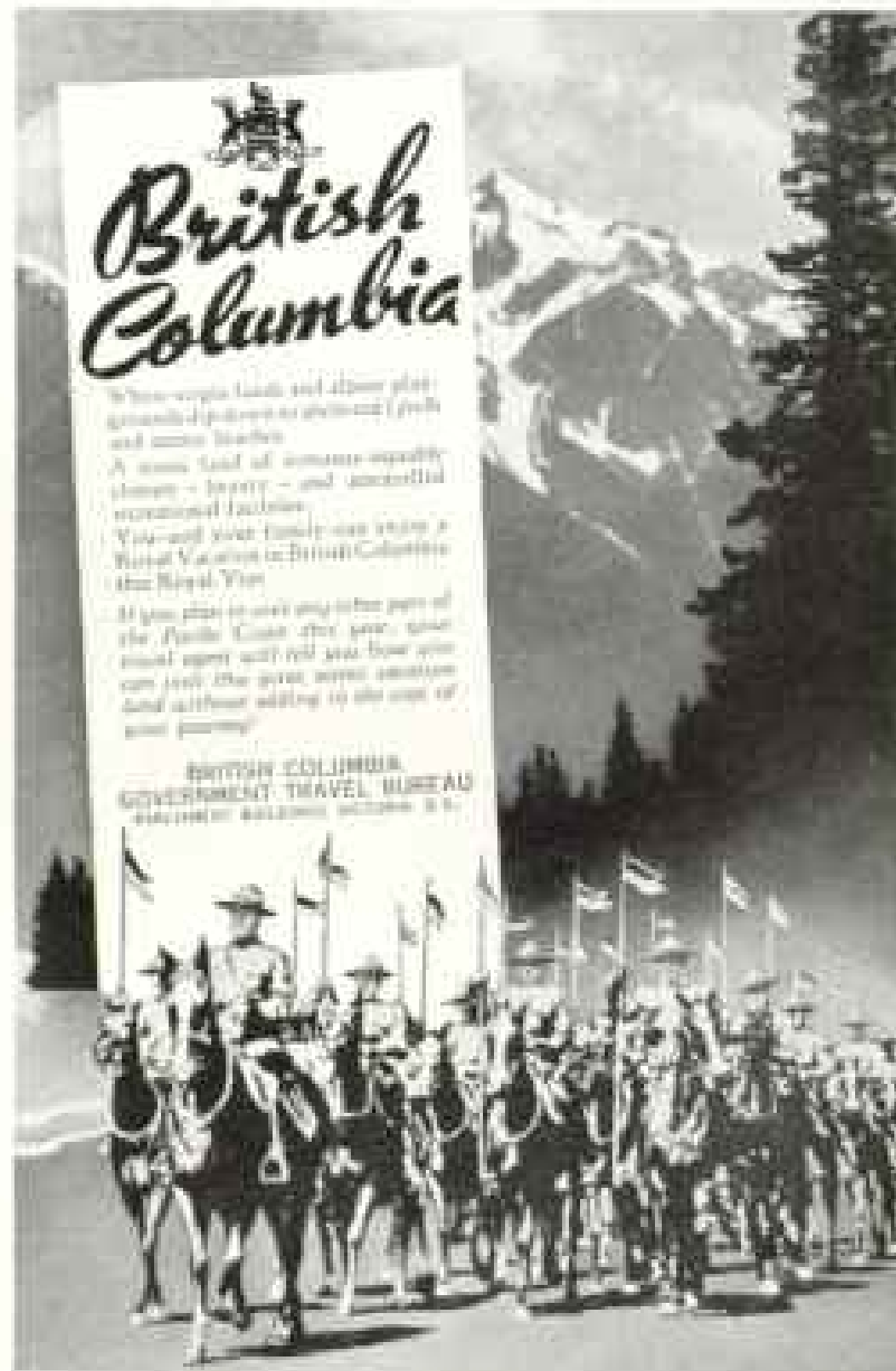


Name \_\_\_\_\_

Address \_\_\_\_\_

City and State \_\_\_\_\_

For The Alaska Line's Good-Natured Map enclose 10c



**British Columbia**

When you look and listen you'll find a land of beauty and interest (fish and game too). A wide land of romantic beauty - beauty - and wonderful recreational facilities. You and your family can enjoy a Royal Vacation in British Columbia this Royal Year. If you plan to visit any other part of the Pacific Coast this year, you must open your eyes and see how you can join the great scenic centers and airfare willing to do most of your journey.

BRITISH COLUMBIA GOVERNMENT TRAVEL BUREAU (MONTREAL BUREAU, QUEBEC, P.Q.)

*Surprising*  
**AUSTRALIA**

"Surprising" fits Australia's magnificent beaches; regal blue mountains; strange animal life; big, friendly cities. Exciting things to see and do; fishing, horse racing, yachting, surfing. Low-fare liners via romantic South Seas. Exchange reduces costs in Australia.

Ask your Travel Agent for all details or:  
Arthur H. O'Connor, Manager  
**AUSTRALIAN NATIONAL TRAVEL ASSOCIATION**  
(A non-profit Community Organization)  
Box F, 510 W. 6th Street, Los Angeles, Calif.



*Filmo 8* This 8 mm. camera makes new-reel-length movie scenes for less than snapshot cost. With fine F 3.5 lens, only . . . \$54.50

Go Places...See Things...Bring Them Back  
 IN *Filmo* COLOR MOVIES

Return with *motion pictures* of the places you've been, of the people you've met!

Return with *truly fine* motion pictures you'll be proud to show to your family and friends.

Such movies are easy to take with a Filmo, made by the makers of Hollywood's preferred studio equipment.

So have a Filmo along (*in your pocket!*) on your next trip. A Filmo 8 costs less than many still cameras, and with it you can make *movies* as inexpensively as you take snapshots!

*Filmo 141*

For those who prefer 16 mm. film, the new Filmo 141 offers convenient magazine loading and almost automatic operation. With new, error-proof viewfinder and fast 1-inch F 2.7 lens . . . \$127.50



CONVENIENT TERMS AVAILABLE

**HOW TO MAKE MOVIES**—Color movies or black-and-white . . . slow motion or normal speed . . . indoors or out . . . Filmos make any kind of movies you want—even animated maps, cartoons, and titles! Just drop the film into place, look through the spyglass viewfinder, press the button, and *what you see, you get!*

Start making movies now. First step: examine Filmo at your dealer's or send coupon for details. Bell & Howell Company, Chicago, New York, Hollywood, London. *Established 1907.*

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 Send booklet, *How to Make Inexpensive Personal Movies.*



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REG. 3-28

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*There's joy  
in Hawaii*

And joy from Hawaii comes to your taste every time you drink a tall, cool glass of Dole Pineapple Juice. Rich in natural fruit sugars, flavor and fragrance. Unsweetened — nothing added to mar its original, delightful goodness. It's a happy habit to buy the family-size can.



LISTEN to Phil Baker in "Honolulu Bound" — coast-to-coast Columbia Network, Saturdays, 9 to 9:30 P. M., E. S. T.

"Mention the Geographic—It identifies you."



Why go through another night worrying yourself frantic about not falling to sleep? A cup of Horlick's, hot, just before retiring may be what you need. It seems to relax the body and nerves. The stomach gets light, *easily digested* food to help calm the active brain.

Hospitals use Horlick's as a bland, strengthening food, and as a bed-time drink. Plain or chocolate flavor — also in compact tablets to eat like candy. Remember there is only one Horlick's — not a mechanical mixture, but cooked in vacuum at low temperatures — made to strict laboratory standards of purity.

**HORLICK'S THE ORIGINAL MALTED MILK**

Said a dandy Dalmatian named Spot,  
"I like Red Heart's 3 flavors a lot —  
Beef-fish-cheese in rotation  
Pleases any Dalmatian  
It hits every spot  
that he's got!"

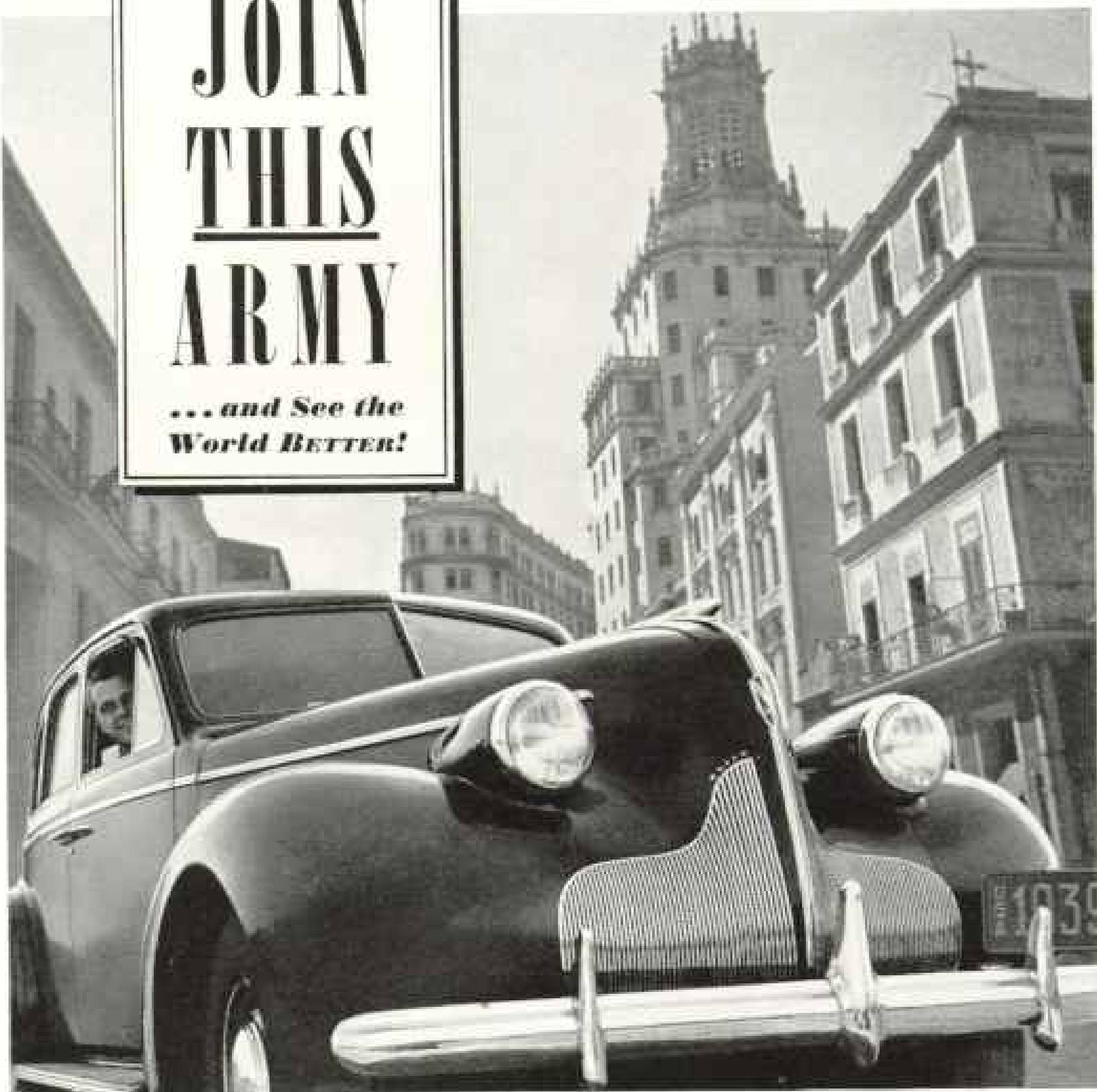


Start feeding your dog Red Heart and see him thrive! For Red Heart is *quality* food—a splendid formula containing fresh meat and meat by-products, vegetable and bone meal, cereals, cod-liver oil, and Fleischmann's Irradiated Yeast—prepared in a federally inspected plant. For appetite appeal, feed Red Heart's 3 flavors—*beef, fish, cheese*—in rotation. And, remember, Red Heart Biscuits are *grand* for dogs' teeth! Write today for authoritative FREE booklet, *Dogs, Their Care and Feeding*. Address: John Morrell & Co., Dept. 143, Ottumwa, Ia.

**Red Heart  Dog Food**

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*...and See the  
World BETTER!*



**T**HE growing army of value-minded motorists who look out on the world from the comfort-seat of a Buick see *more*, with a mighty Dynaflex eight to take them places, and see *better* through windows enlarged by as much as 412 square inches of safety plate glass. Value's up, in this Buick—way up—but prices are down—down as much as \$102 under prices of a year ago. Hadn't *you* better see *your* Buick dealer and find out more?

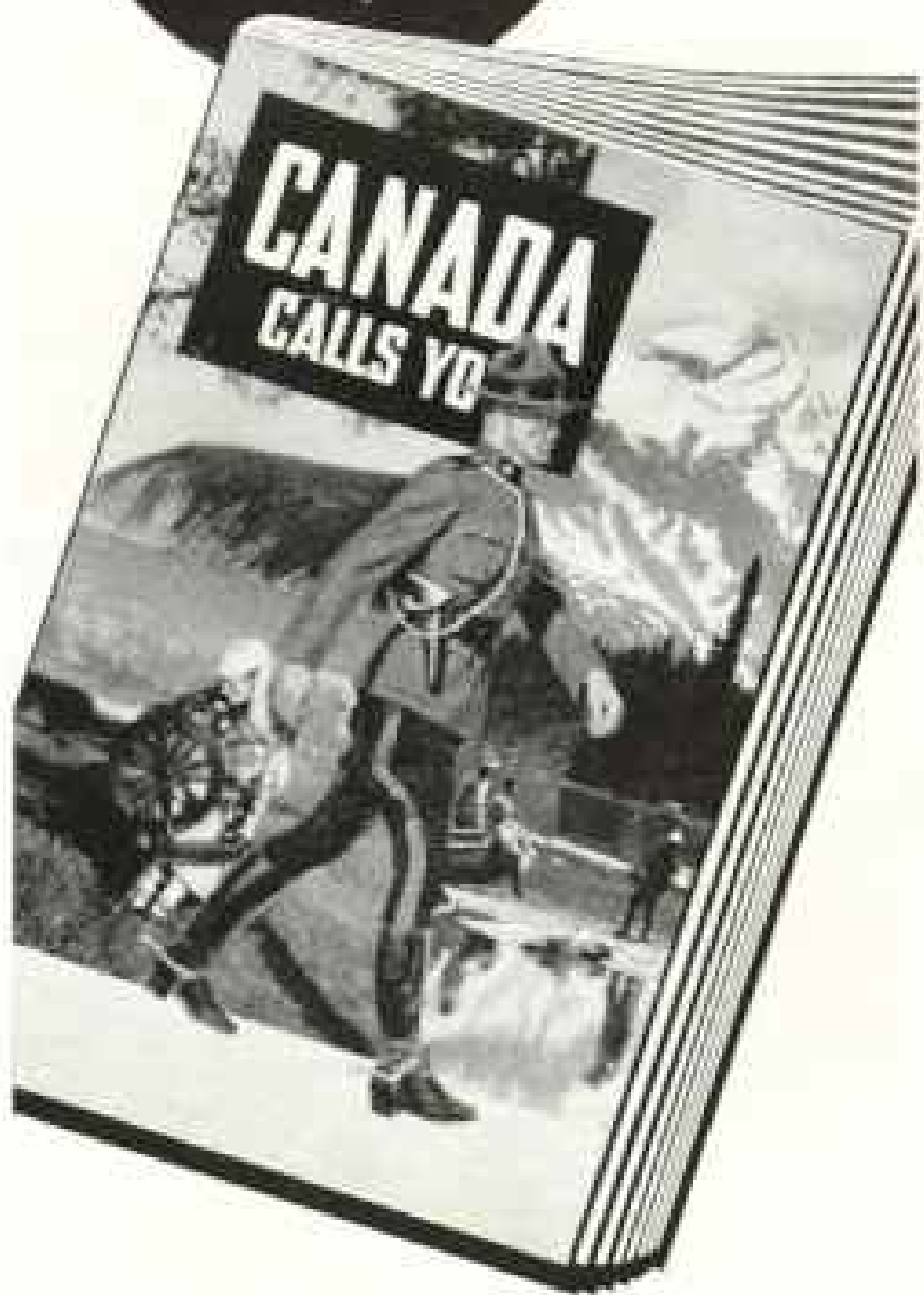
**“Better buy Buick!”**

EXAMPLE OF GENERAL MOTORS VALUE

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**C**ANADIAN vacations are spacious vacations. You're away from the heat, away from the crowds, in this glorious forested northland, whether you choose the mountains or seashore.

To help you choose, we have prepared this magnificent pictorial book, "Canada Calls You". It describes and illustrates every section of this broad vacation-land and tells you how to get there across a friendly border devoid of red-tape. Send today for your free copy.



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district, province of.....

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Address.....

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IN THE AIR**

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In addition to being an ideal all-purpose camera, the Automatic Rolleiflex will freeze action. Its extra fast finder lens renders a sharp image of each picture *before you make it*. Makes 12 negatives 2 3/4 x 2 3/4" on a roll of 120 film. With Zeiss Tessar f/3.5 lens in Compur Rapid delayed-action shutter, and case..... \$130

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Rolleiflex II, Zeiss Viotar f/3.5..... \$105.00  
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Friendly shipmates, fine food deftly served, and a democratic spirit of good fun will make your 1 Class crossing long remembered. Sail this modern inexpensive way. For full details write for Booklet N. Your Local Agent or

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# Short-Cut to Arcady

GEOGRAPHERS to the contrary, there is an Arcady, just six hundred delightful miles southeast of Times Square. A modern ship will take you there in forty hours . . . a plane in less than six.

This Arcady is British. The inhabitants have embraced the leisured delights of civilization, spurning the while all elements of rush and racket. . . . Visitors to this idyllic land are gently urged to forget the world. And they do, thanks to a climate kept eternally bland by the

ministering Gulf Stream . . . and to the soothing absence of motor traffic, hay fever, and fumes. The air they breathe is wonderfully pure, charged with sea spice, cedar, and the scent of semi-tropic flowers.

Isn't this the very spot your jaded spirit cries for? Aren't you wearied with scenes that are stale? Then come to this strange and peaceful retreat . . . this paradise . . . Bermuda!

**BERMUDA IS WITHIN EASY REACH OF THE NEW YORK WORLD'S FAIR**



**YOU CAN GO BY SEA OR BY AIR**—Luxury liners travel from New York to Bermuda in 40 hours . . . a round-trip total of nearly 4 days of delightful shipboard life. Sailings from Boston, too. • Splendid new transatlantic planes now take off from New York and Baltimore, Maryland, and descend at Bermuda 5 hours later . . . an enchanting experience in the sky. • A wide choice of accommodations is provided by Bermuda's many hotels and charming cottages. • No passport or visa is required for Bermuda.

# Bermuda

**PLEASURE ISLAND**

For Booklet: Your Travel Agent, or The Bermuda Trade Development Board, 500 Fifth Ave., N. Y. C. In Canada, Victory Bldg., Toronto

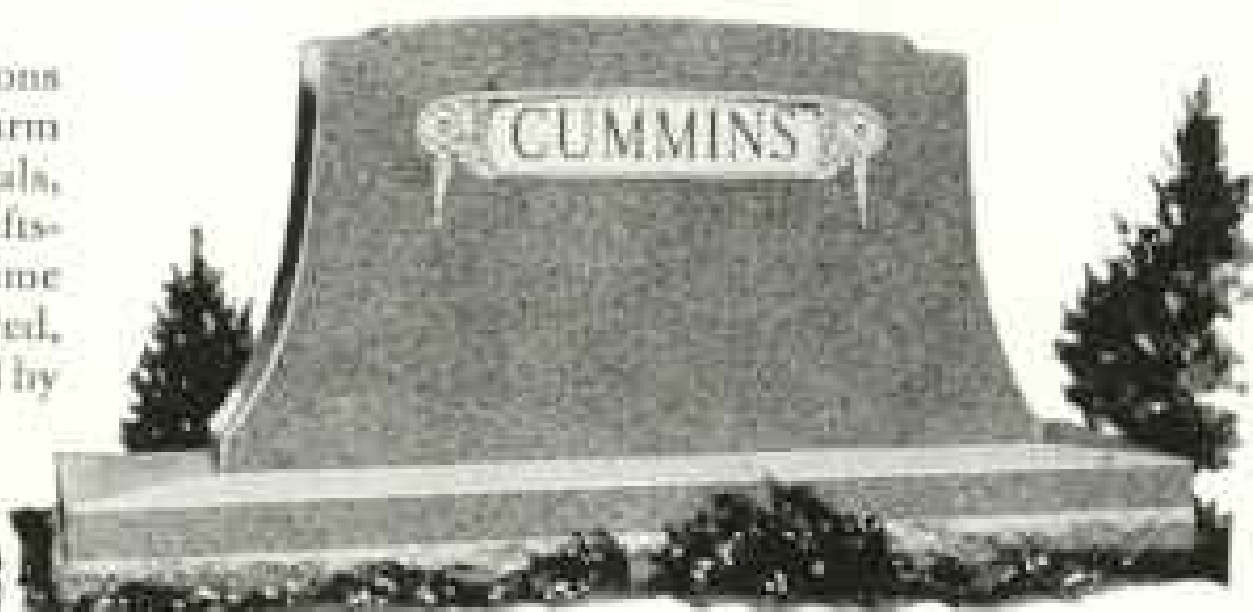
# BEAUTY NEVER DIMMED

*throughout  
the ages*

■ The memorial tribute that coming generations will view with approval must have its future charm "built in" TODAY. Rock of Ages Memorials, from quarry to cemetery, in material and in craftsmanship, are created to defy every attack of time and the elements. Rare, gem-like, even-textured, Rock of Ages granite is fashioned and finished by talented memorial craftsmen, aided by advanced patented finishing processes. Each memorial is "signed" by the Rock of Ages seal shown below etched into the stone.



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EVERY ROCK OF  
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*Without obligation, please send me your 1979 illustrated book, "How to Choose a Memorial," with design suggestions, epitaphs, symbolism, etc.*

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★ Thrill to the sights of America's last frontier. Silvery waterfalls on giant mountain sides, high fjords, live glaciers, land of the Midnight Sun. Cities where Gold Rushers made fantastic history. Villages studded with giant totem poles. A glorious 2000-mile cruise on the sheltered Inside Passage—with deck games and dancing on luxurious *Princess* liners.

*See Banff . . . Lake Louise . . .*

COLUMBIA ICEFIELD HIGHWAY ENROUTE.

**9-DAY CRUISES . . . from \$95**  
*To Skagway . . . Sailings from Vancouver  
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**SPECIAL 11-DAY CRUISES . from \$115**  
*Via Sitka and Skagway . . . from  
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Fares from Vancouver, Victoria and Seattle  
include meals and berth except at Skagway.

Fast Canadian Pacific transcontinental trains... *air-conditioned.* Low round-trip summer fares to North Pacific Coast points and California.

*Ask Your Travel Agent or  
Canadian Pacific . . . Many  
Offices in U.S. and Canada*

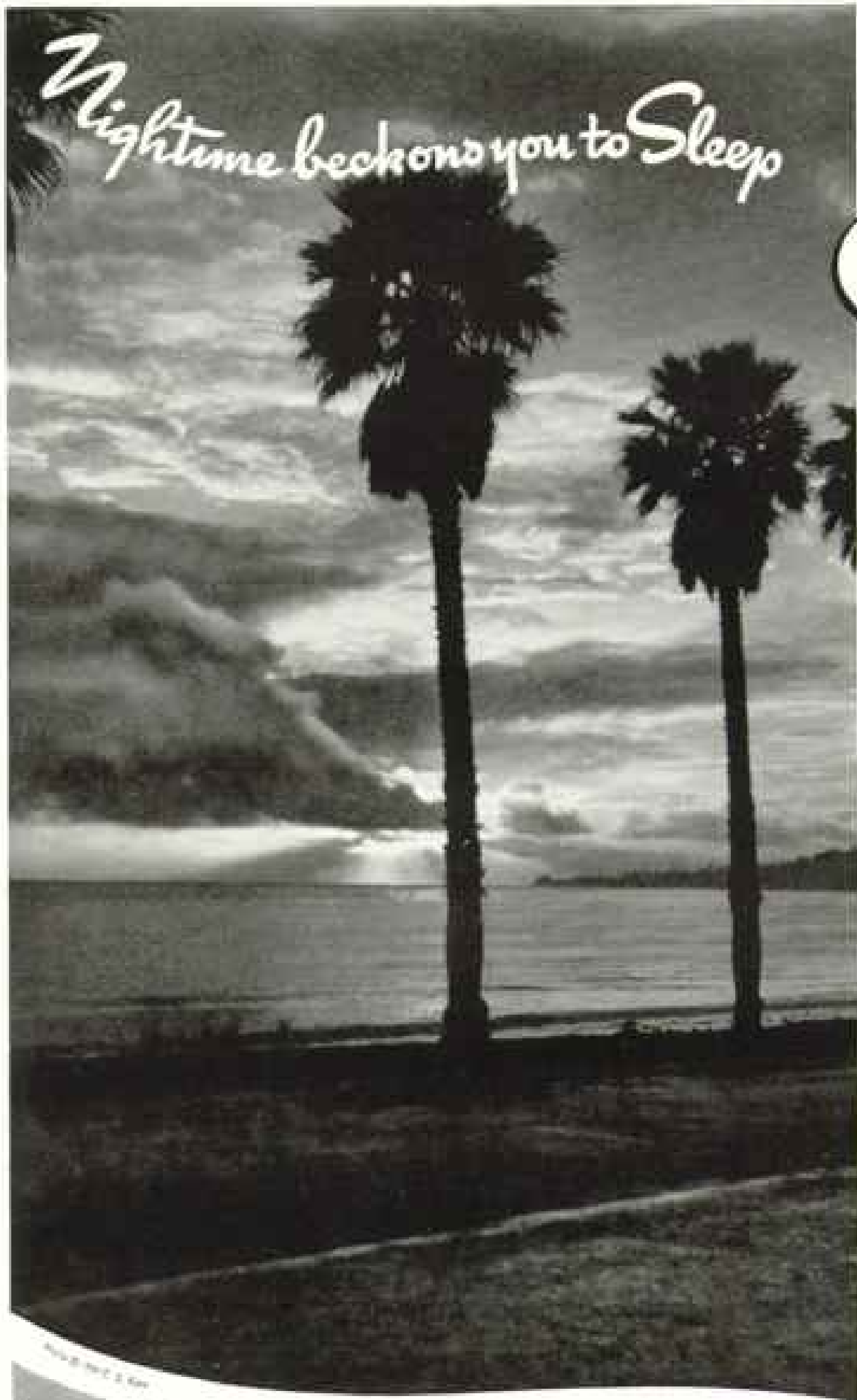


## Canadian Pacific

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TRAVEL SYSTEM

"Mention the Geographic—It identifies you."





*Nighttime beckons you to Sleep*



**BIDS YOU**

*Sleep<sup>o</sup>  
Relaxed*

Night-time — Spring-Air — and restfully relaxing sleep! Spring-Air is too soundly established, too thoroughly appreciated, for there to be any doubt of its being the acme of mattress perfection. No other mattress can rightfully claim to be as good—for none other can give you the time-tested, long-term guarantee based on Spring-Air's renowned Karr spring construction. All Spring-Air Mattresses are made to the most exacting standards in the industry. SPRING-AIR PRODUCTS Co., General Offices, Holland, Mich. Canada, 41 Spruce St., Toronto.

**SPRING-AIR**

*Mattress*

*New* **TWO-LAYER  
SPRING-AIR MATTRESS**

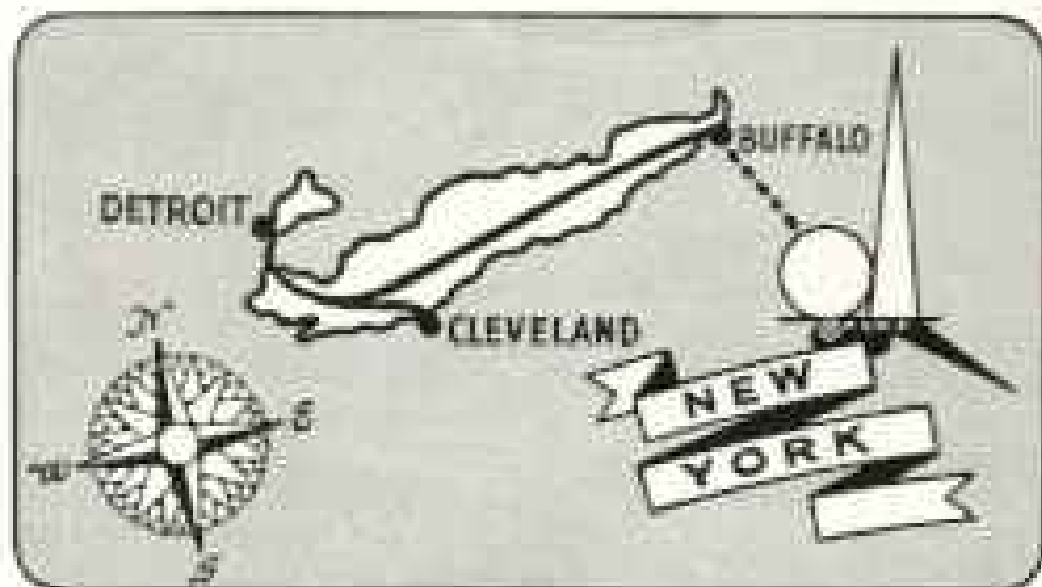
A downy top pad, billowy soft, and under it a marvellously flexible 15-year guaranteed Karr spring unit—two separate layers specially designed to make your mattress *twice* as easy to handle, and to actually give you *double* the amount of sleep enjoyment! You'll say it's the grandest ever — as hundreds of thousands already know it to be!



INNER-SPRING AND TWO-LAYER STYLES \$24.99 TO \$49.99

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# Take the Great Lakes Route to the New York World's Fair



1939 is World's Fair Year! Probably never again in a lifetime will there be another opportunity to see exhibitions of such scope and grandeur. Plan to visit the New York World's Fair — and go the D & C way!

The Great Lakes lie right on the route to the Fair. And sailing over the Lakes are the finest ships on inland waters—big D & C liners. These big ships—larger than many ocean liners—offer all types of accommodations at modest rates. They are famed for their fine food and excellent service.

If you're motoring east or west, put your car on the ship. Rates for passenger cars are low. If you're traveling by rail, take part of your trip on the historic Great Lakes you've always wanted to see. Round-trip railroad tickets will be honored by the D & C Lines. See your local travel agent.



D & C liners sail daily between Detroit and Cleveland and Detroit and Buffalo. Season opens April 15th (approximately) for Cleveland Division and May 15th (approximately) for Buffalo Division.

Passenger Department 51  
D & C NAVIGATION COMPANY, Detroit, Mich.  
Please send me illustrated folder, containing fares and schedules.

Name \_\_\_\_\_

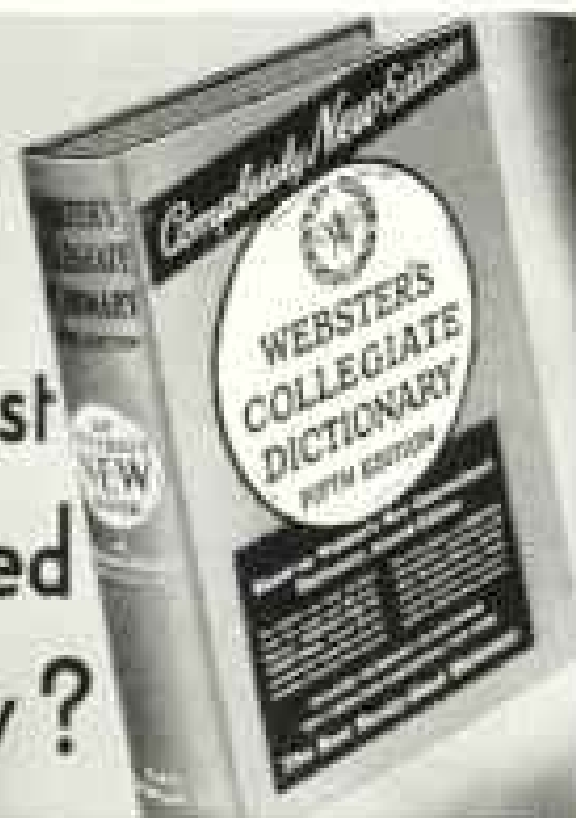
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The Great Lakes Route  
to the World's Fair

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DETROIT, MICHIGAN

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Rates from \$352, all expense, TOURIST Class;  
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Her first trip on one of the great liners of Hapag and Lloyd! No wonder she's excited and happy! Even her parents — regular Hapag-Lloyd Trans-Atlantic Commuters — always thrill to the enchanting magic of stepping across this gang-plank. For, once on board, they enjoy such hospitable, thoughtful attention and so many unanticipated luxuries that they feel as if the ship were run specially for them! You will, too — so why not join these lucky ones? Plan now on Europe and Hapag-Lloyd!



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### BREMEN • EUROPA • COLUMBUS

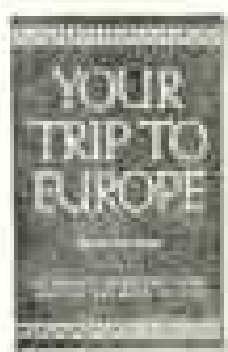
Swift Lloyd Expresses to Cherbourg, Southampton, Bremen—the Columbus adding Ireland.

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I wish suggestions on how to go, what to do and what to see in Europe. Please send me the revised 1939 edition of the 230-page book, "Your Trip to Europe". I enclose 25 cents (stamps accepted).

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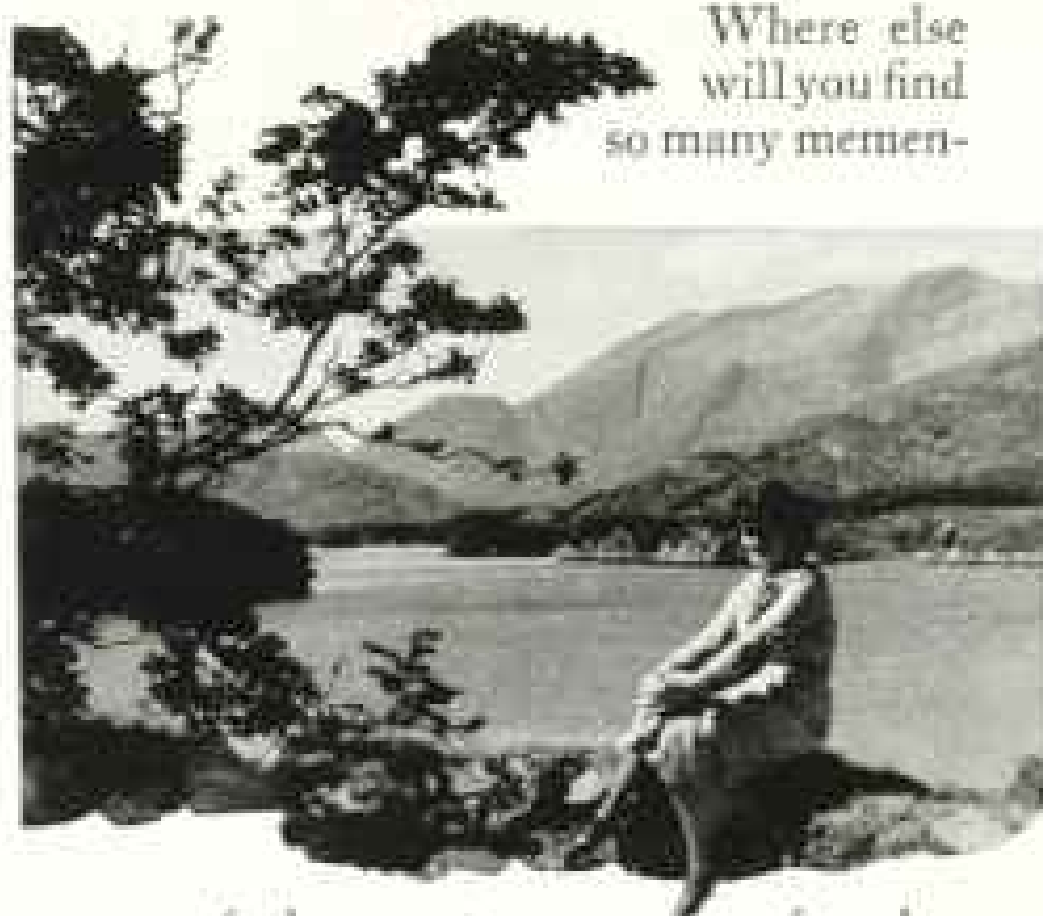
City \_\_\_\_\_

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where Dollars, Quarters, Dimes go farther  
as Pounds - Shillings - Pence . . .

Vacations cost less in England, Scotland, Ireland and Wales — in rail travel and sightseeing. Economical as your visit to Great Britain and Ireland will be, it will also prove to be a most enjoyable, never-to-be-forgotten event.



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will you find  
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oes of the great names of the world's history and literature — and all within a few hours' train ride, at 2¢ a mile? For instance, it costs but \$16 round trip rail fare between London and Edinburgh; \$4.25 for a day's trip from London visiting Warwick and Stratford-on-Avon.

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Beautiful Globe-Wernicke bookcases are always in good taste and permit room rearrangement at your pleasure—easily moved anywhere. They are built of fine materials by skilled craftsmen.

Both sectional and solid end bookcases are made in a variety of styles, sizes and finishes to harmonize with other furniture in home or office. At right is popular **ECONOMY** style sectional bookcase — "grows as your library grows."

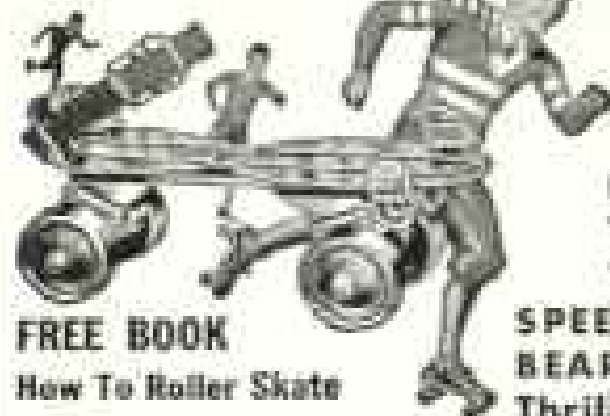


**FREE**—Ask your dealer for copy of 32-page booklet, "The World's Best Books" or write direct to us.



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CINCINNATI, O.

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**CHICAGO FLYING SCOUT**  
Roller Skates

**FREE BOOK**  
How To Roller Skate

**SPEEDY OVERSIZE BALL-BEARINGS** will give you Thrills with less Spills and more Miles.



**SKATE PIN & ANKLE PADS FREE**

Send picture of "Our Gang" cut from wrapper with 10¢ to cover mailing, and receive beautiful Gold F. Skate Pin and Ankle Pads.



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With Shepard HomeLIFT—the automatic, electric Home Elevator—you are upstairs or down at the touch of a button. A priceless boon to older folk . . . Invalids. Operates from lighting circuit at less than one cent per day.



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*Builders of Finest Office and Hotel Elevators*  
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**HomeLIFT**



## Don't trifle with chronic INDIGESTION

### *Be Examined!*

**I**NDIGESTION is not a disease in itself—but it may be a symptom of serious disease. It is one of nature's danger signals.

To ignore chronic indigestion, or to treat it with self-prescribed medicines, is always unwise. But it is especially risky in middle life.

Recently several thousand dyspeptic sufferers were studied at a large American clinic and the underlying causes of their indigestion analyzed. Particularly among patients over forty, a serious condition such as gastric or intestinal ulcer, gall bladder disease, cancer, or heart disease was frequently found to be the cause of their "stomach trouble."

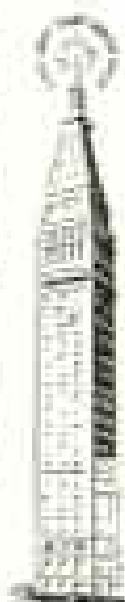
Among younger people, too, recurrent indigestion may be due to disease. But more often it results from neglect of simple rules of health. Common causes are improper selection of food, hasty eating, over or under-eating, defective teeth, lack

of exercise, fatigue and, in particular, excessive worry or emotional stress.

The thing to keep in mind is that chronic indigestion, at *any* age, is always a symptom of something wrong. Whether or not the "something wrong" is serious, only your doctor can determine. If your digestive disturbances are caused by disease, habitual self-dosing with pills or cathartics may delay a cure or actually imperil your chance of recovering.

To determine the underlying causes, your physician will require a careful physical examination and a thorough analysis of your symptoms—perhaps even X-ray photographs and other laboratory studies.

Whether the cause is an organic disease, or a "functional" disorder which a change in living habits will correct, your physician may be of most help if you visit him in time.



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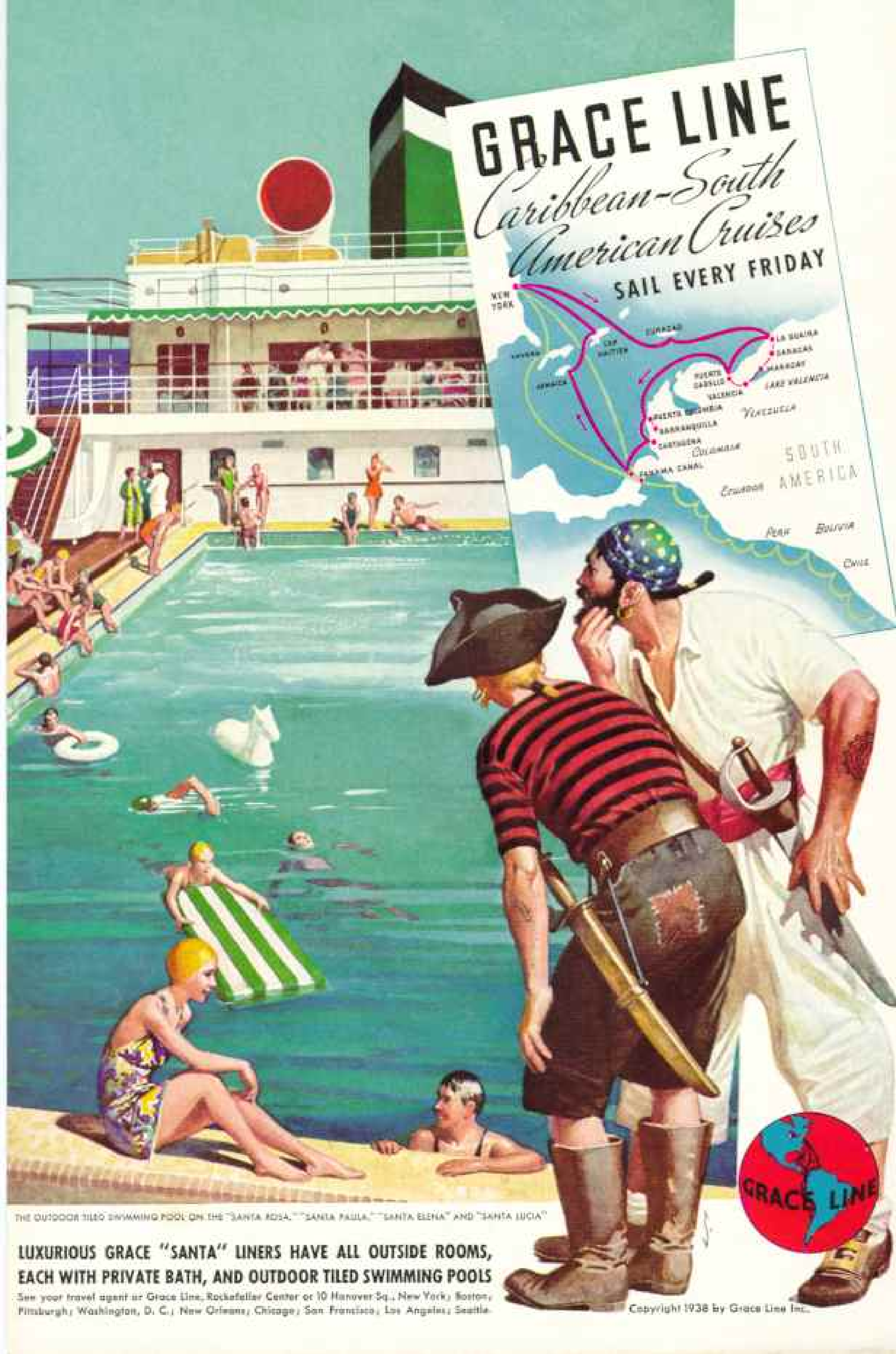
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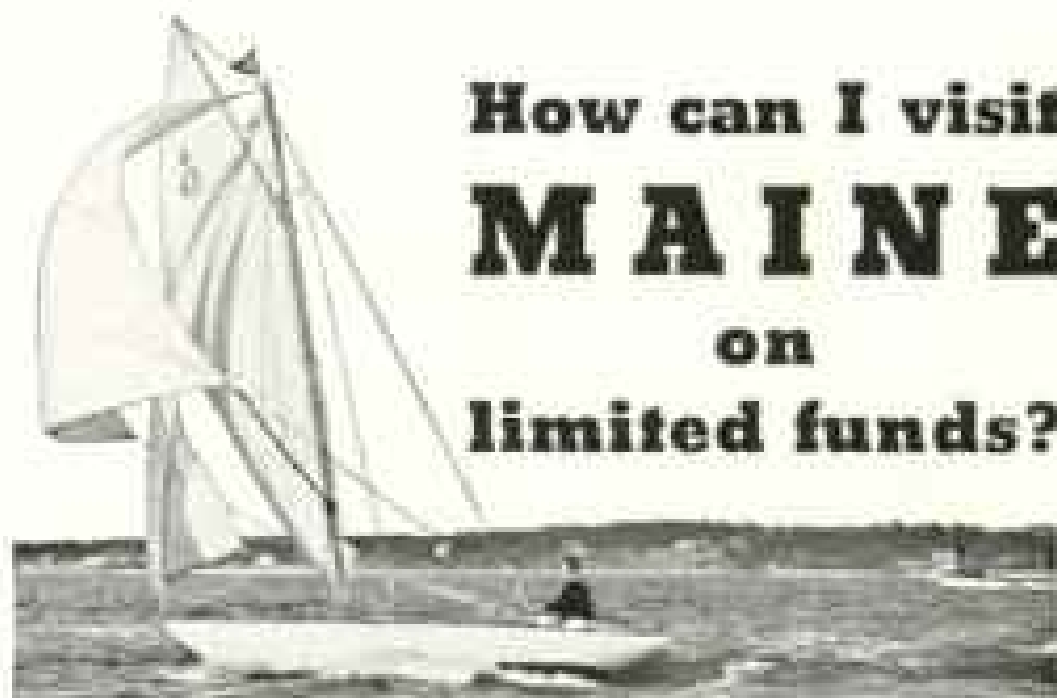


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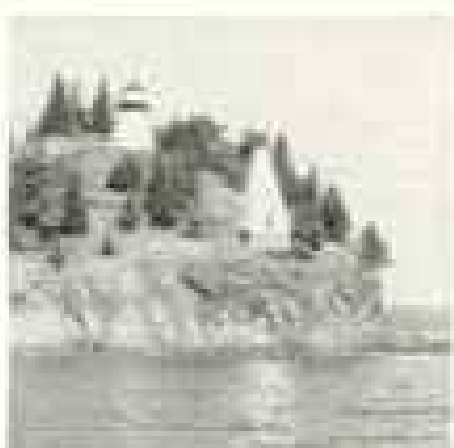
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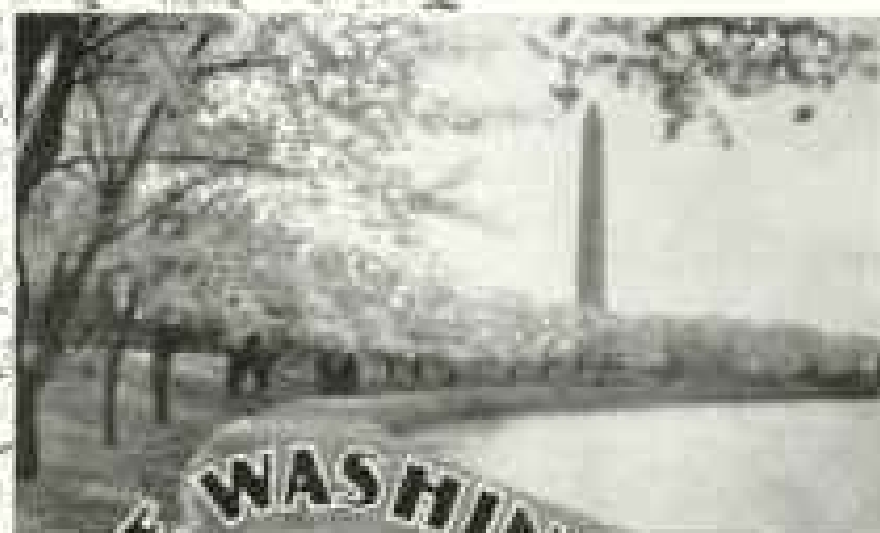
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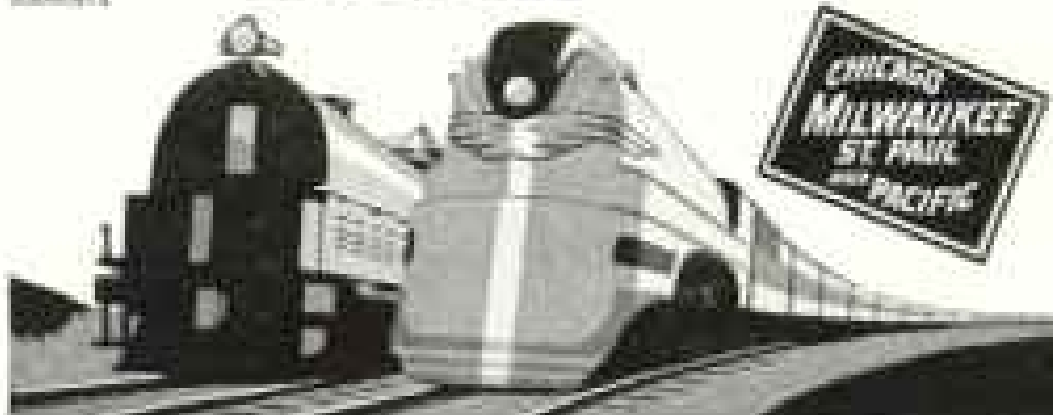
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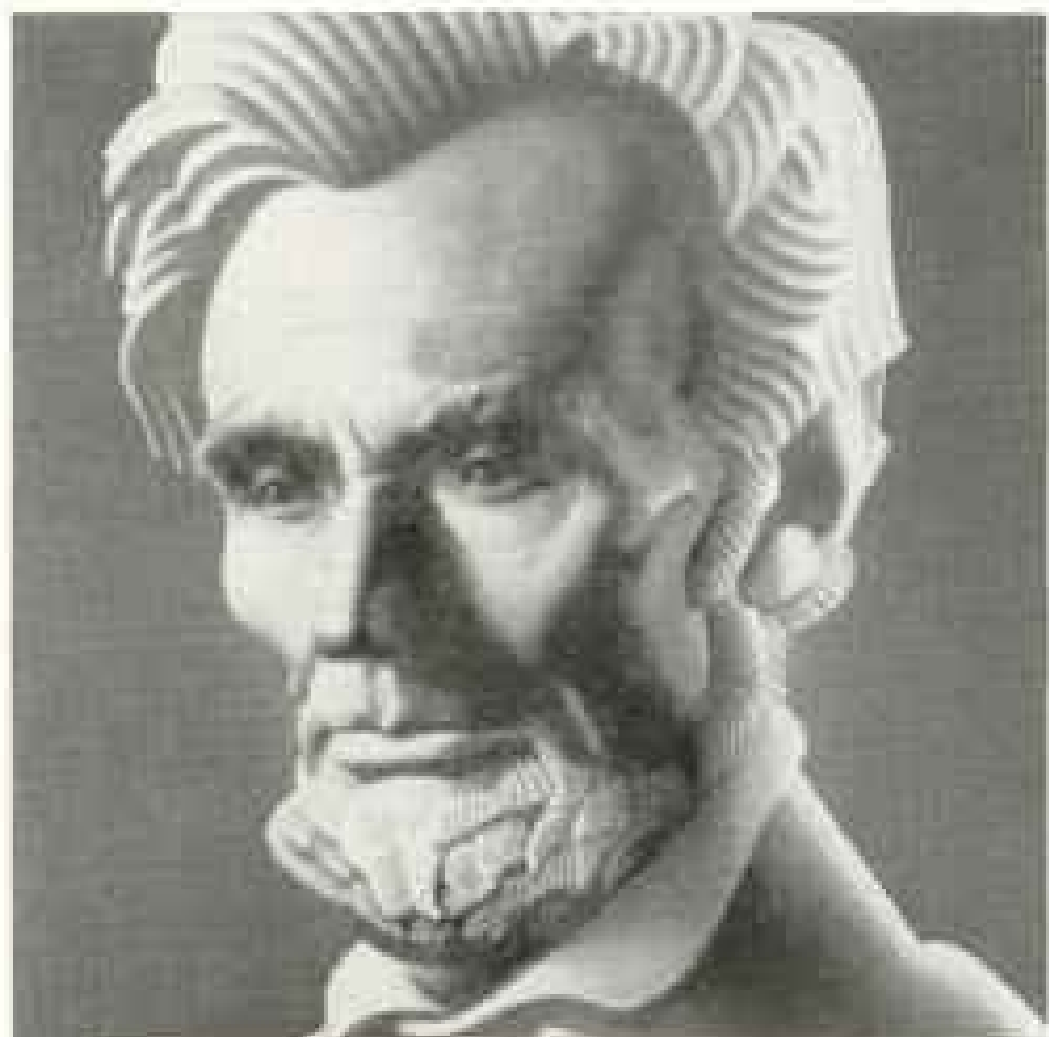
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## NEW YORK

### New York City

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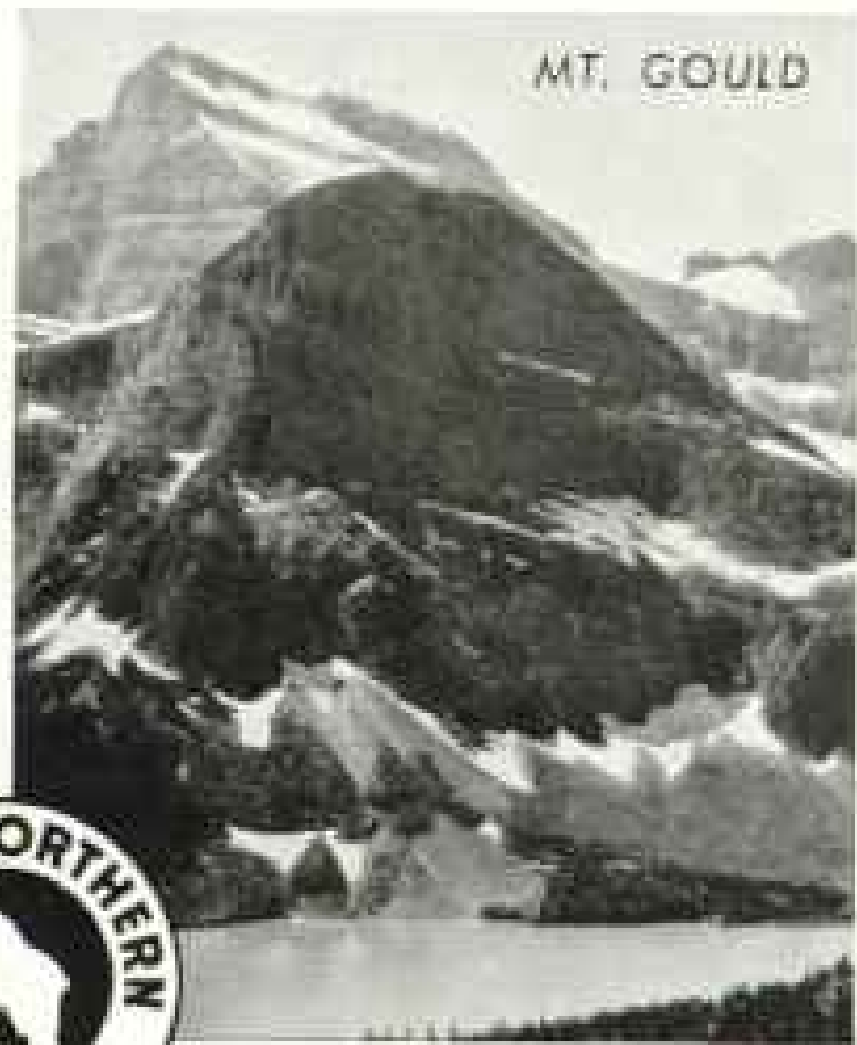
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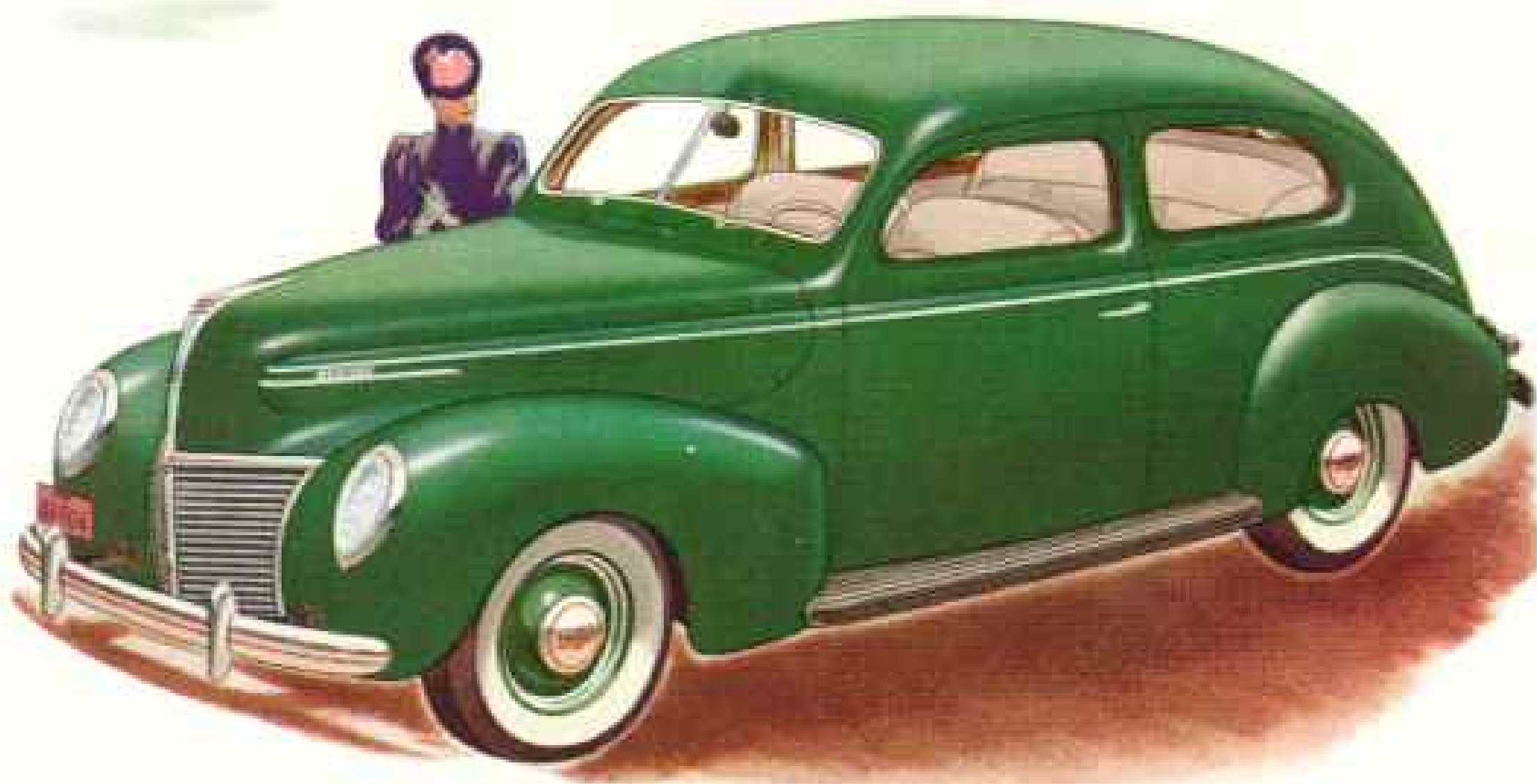


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