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The *Yankee's* Wander-world

By Irving and Electa Johnson

AS WE write this yarn, the brigantine *Yankee* is halfway across the Pacific on our fourth world cruise, our first since the war.

Though voyaging is our life's work, we Johnsons have not grown so blasé we cannot get a thrill out of each charming island revisited. Old friends greet us in almost every port.

Our amateur crew of Magellans, boys and girls, are making their first circumnavigation. The brigantine *Yankee*, too, is on her maiden world voyage. She is the namesake of the schooner *Yankee*, our home for eight years, and veteran of three global trips.*

How We Found the New *Yankee*

She was shown to us one summer day in 1946 in England. First glance was a convincer; she was the only sailing ship for us. No other we saw combined such comfort, dryness, and size (96 feet long), the qualities we needed most. German-built, she was a British war prize. Like her predecessor, she had been a North Sea pilot boat, the *Duhnen*, a name we changed to *Yankee*.

To outfit her as a brigantine, we chose the J. W. & A. Upham shipyard, sprawling in utter confusion along the water front in the little fishing port of Brixham, Devonshire (page 5). This firm had been in the same family for 150 years. The yard itself, so old that nobody seemed to know when it started, served Brixham when its trawler fleet counted more than 500 sail.

Brixham's shipwrights did their tasks in the old-style way. In their toolboxes we saw many a wooden handle shaped to its owner's grip by a lifetime of toil. So sharp and balanced were the adzes that the old spar makers, we guessed, could have shaved with them.

To buy the gear needed by *Yankee*, we returned to our home in Massachusetts. Laying out her brigantine sail plan, we placed an order with our Gloucester sailmaker. Throughout the winter we shopped for such things as Diesel engines, generators, propellers, paint, rope and wire, dishes, curtains, mattress covers, and clothespins.

Old Codgers Love "t' *Yank*"

With spring, we returned to Brixham. *Yankee*, her deck a-litter, lay alongside the old stone quay. During the winter her steel hull had been chipped and her insides insulated with ten tons of rock wool. Everyone went to work building living quarters.

More than hands worked; the men put their hearts into the job seven days a week. They developed an affection for "t' *Yank*" which we appreciated. Their broad Devon accents rang through the ship. These old codgers, far from thinking the owner a nuisance, welcomed his advice. They vastly preferred his chalk marks to blueprints.

Now came the day when *Yankee* was towed from the town quay to a bathtublike tidal dry dock into which she barely squeezed. Within a few hours her masts were stepped.

Riggers went to work on the standing rigging. So great was sail's decline, however, that we could find no extra hands for 50 miles around to rig the ratlines, rope rungs in the shrouds which sailors use for going aloft.

However, Ed Kendrick, Cy Merrill, Larry Coachman, Gibby Grosvenor, and others, the first of our amateur crew, had come from the United States to help sail the *Yankee* home.

* See "Westward Bound in the *Yankee*," by Irving and Electa Johnson, NATIONAL GEOGRAPHIC MAGAZINE, January, 1942.

Clifton Melville Graveson

On a Calm Atlantic a Crewman Rowed Ahead and Pictured *Yankee* in Full Dress

The brigantine has a wardrobe of 15 sails but, like a modest lady with her jewels, never wears all at once. Here a nylon stunsail billows out (upper left). When a second stunsail is used, it is set directly below the upper one (page 12). Skipper Johnson, devising these sails from old paintings, decided the artists' balanced spread of canvas was as impractical as it was beautiful. Stunsails spread to leeward, he found, were blanketed by the other sails and would not draw well.

They were not too sure how to "rattle down," as square-rigger sailors called rigging ratlines. An English yachting friend, thumbing through a seaman's manual, learned they should be seized to the shrouds 14 inches apart. Having come to the rescue, he led the young Americans in a rigging race to the top of the mast.

Ship Gets Stuck in Tiny Dry Dock

More heavy fittings arrived. We had just dumped 2½ tons of batteries on the forward deck when word came that we had to leave dry dock on the next tide or be locked in two weeks more. High tide flooded the dock, but *Yankee*, loaded now, remained stuck on the blocks, her stern alone barely floating.

"Rush the batteries aft!" we shouted. In a twinkling the crew changed the ship's center of balance. She floated out, a fraction of an inch to spare. Towed into Brixham harbor, she let go her 900-pound German anchor.

Residents and tourists alike gathered to see us install the 800-pound deep freeze and food.

Now the ship, all white except a bright red boot top, looked grand. Clipper bow, white masts, and varnished yards gleamed.

Retired skippers of the fastest Brixham trawlers came aboard to pass judgment. We beamed when they pronounced, "She'll take a heap of drivin' . . ." "Her'll go; ain't nothin' to stop her."

And go she did. At midnight she put out into the foggy darkness. The English Channel was kind; we had two mild nights and one sunny day to shake out the kinks in the running rigging and the stretch in the shrouds.

In France we tied up in the shadow of St. Malo's medieval walls.* At first glance the city looked like a fairy-tale illustration. A closer look showed war's grim ruins.

More than a week of rain, head winds, and calms slowed our progress to the Azores. We had no real gale, but the sea was against us; as we drove into it, *Yankee* pitched and heeled for the first time. Oilskins were needed on watch. Things not properly stowed flew out of windward bunks. New sailors learned to hang on even in their sleep; and few customers appeared at the swinging mess table (page 11).

"They ought to make square peas for weather like this," said Merrill, watching the little green spheres roll around his plate.

The whole 1,400 miles to the Azores was not like that. We sailed into better weather with wind a little abaft the beam and a warm sun tanning our skin. The boys had a chance to paint the bulwarks red, practice sun sights, and cut each other's hair on deck.

Coming from England and France, we were charmed by the Azores' unspoiled simplicity and their remoteness from war's effects.† Country roads we found bordered with fields of blue hydrangeas, all growing wild. Horse carriages easily outnumbered automobiles. We encountered one donkey seemingly uttering porcine squeals; actually these came from two pigs carried in covered baskets.

Yankee Wears Her Stylish Nylons

To Bermuda we had ideal stunsail weather.

When the skipper planned the brigantine rig to include three square yards on the foremast, he couldn't resist adding stunsails (short for studding sails), though he had never seen one except in pictures. These sails make the great spread of canvas in the old paintings, almost doubling the width of the square sails (pages 2 and 12).

Tea clippers of the 1850's and '60's, grandest ocean racers of all time, were the real stunsail carriers. Some years clippers left China on the same tide and the fleetest finished in the Thames within hours of one another.

Ordinary sail could not win a race like that; and so, despite the cloud of canvas they already carried, the clippers reached higher with moonsails, skysails, angels' whispers, Jimmy Greens, and even a trust-in-God set above a moonsail. To reach wider for the breeze, the clippers added stunsails.

No clipper, however, ever matched *Yankee's* stunsails—hers were of nylon.

Now, having just the right little breeze aft with a smooth sea, we decided to try our wings.

We set one stunsail to windward, the other to leeward, but could scarcely keep both full. Then we rigged a small spar out from the bulwarks and set the second sail below the first, both to windward. In that way they went to work in earnest. Our lovely decorations could pull as well as look pretty.

We set the big ballooner, too, and then *Yankee* had everything we could hang on her—7,775 square feet of sail, all of it full and drawing.

Brigantine Wins Ordeal by Storm

Four thousand miles of easy sailing across the Atlantic left the crew praying for a foul blow to test the ship.

No storm appeared until we entered Cape Cod Canal. There the brigantine was sailing as if she knew the way when the squall struck. *Yankee* lay over on her beam ends till her foreyard chased spectators off a dock.

Near-by Boston Airport's anemometer registered one 116-mile-an-hour gust; so we knew our ship could stand a bit of breeze.

Yankee eased gently into Gloucester, her new home. There we spent two months fitting out, adding diving equipment, outboard motors, and supplies for friends on lonely islands.

A new crew of young landlubbers, pledged to share the work and the expenses, assembled.

First mate was Stephen Johnson, our nephew, who sailed in the old *Yankee* and in the Merchant Marine. Jack Braidwood, a veteran Canadian Navy commander who had sailed boats all his life, signed as second mate (page 50). Third was Frank Power, of California, formerly a lieutenant in the U. S. Naval Reserve. Dr. Charles Bothamley, of Hollywood, was ship's surgeon.

Four girls signed on for old square-rigger jobs—Mary Booth, a Lightning skipper, as blacksmith; Meg Young as sailmaker; Terry Glenn, a former airplane engineer, as cooper; and Louise Stewart, a wartime captain in

* See "St. Malo, Ancient City of Corsairs," by Junius B. Wood, NATIONAL GEOGRAPHIC MAGAZINE, August, 1929.

† See, in the NATIONAL GEOGRAPHIC MAGAZINE: "European Outpost: The Azores," by Harriet Chalmers Adams, January, 1935; and "American Airmen in the Azores," 10 ills. in color, February, 1946.

Drawn by H. E. Eastwood

Yankee Charts Her Route, Not to Save Time, but to Visit the World's Romantic Places

At Honolulu the brigantine anchored half a globe away from Brixham, England, where she was outfitted. Bound from Gloucester to Gloucester, her skipper expects to circle the world in 18 months—from November 2, 1947, to May 1, 1949. Capt. Irving Johnson takes pride in finishing his voyages right on time.

the Marines, as lamp trimmer. Mrs. Johnson was chaperon. Did any old-time windjammer ever have one?

Yankee's experience convinced us that sailswomen are an asset on long cruises. They make a ship homelike, prevent barrack-style conversation, please the eye and the camera.

World Trip Starts; Crew Gets Seasick

Shoving-off day, Sunday, November 2, 1947, was perfect. A mob of friends at Gloucester pier gave us a rousing farewell. We were Gloucester-bound the hard way—18 months around the world.

Though we never expect any mercy from a November sailing, *Yankee* got off easy. For three days there was no call for all hands.

South of Nantucket Shoals Lightship a lively breeze quickly sorted out those who were going to get seasick. Old salts aboard had a good laugh until Donald Crawford rushed to the rail. We couldn't spare him; Don was the ship's cook (page 39). Mrs. Johnson took over the galley.

Our crew of green hands, bundled in winter sailing clothes, scarcely knew one another's names.

In Gloucester they had taken one dizzy look at the cloud-scraping rigging and vowed, "Boy, you'll never catch me up there!" Soon they were working beside the mates, setting topgallant, fore-topsail, the big square foresail, the main topsail, and loving the thrill of it. They learned to hang on and brace themselves against the roll of the ship; they remembered where to find the lines; they gained a sailor's vocabulary.

Our crew drove *Yankee to* Haiti, 1,500 miles from Gloucester, in 10 days. Pretty good for landlubbers!

In Cap Haïtien they had their first taste of a foreign port. By donkeyback they visited the mountaintop Citadel of Henry Christophe, Haiti's Negro Napoleon.*

Mast Snaps; All Hands Toil in Darkness

A fair breeze saw us through the Windward Passage. Then one night a sudden squall snapped the fore-topmast.

All hands were called on deck. In inky darkness they heard the shattered spar and 33-foot topgallant yard slatting around half-

* See, in the National Geographic Magazine: "Bare Feet and Burros of Haiti," by Oliver P. Newman, September, 1944; and "Haitian Vignettes," by Capt. John Houston Craige, October, 1934.

National Geographic Photographer B. Anthony Stewart

German-built *Yankee* Acquires a New Dress in Brixham, Devon's Port of Adventure

During the discovery age, Brixham sent many of its sons voyaging into the unknown. Its old shipyard, sprawling along the water front, has been in the same family 150 years. Venerable workmen, far from resenting *Yankee's* owner, welcomed his suggestions (page 1). Here he works on the starboard bow, assisted on the bowsprit by Gilbert Melville Grosvenor.

way up the mast. They fished the jib topsail out of water racing by the starboard bow.

In driving rain the skipper headed aloft with a coil of line and secured the wildly swinging wreckage. Lowering the ton of tangled gear took all morning (page 16).

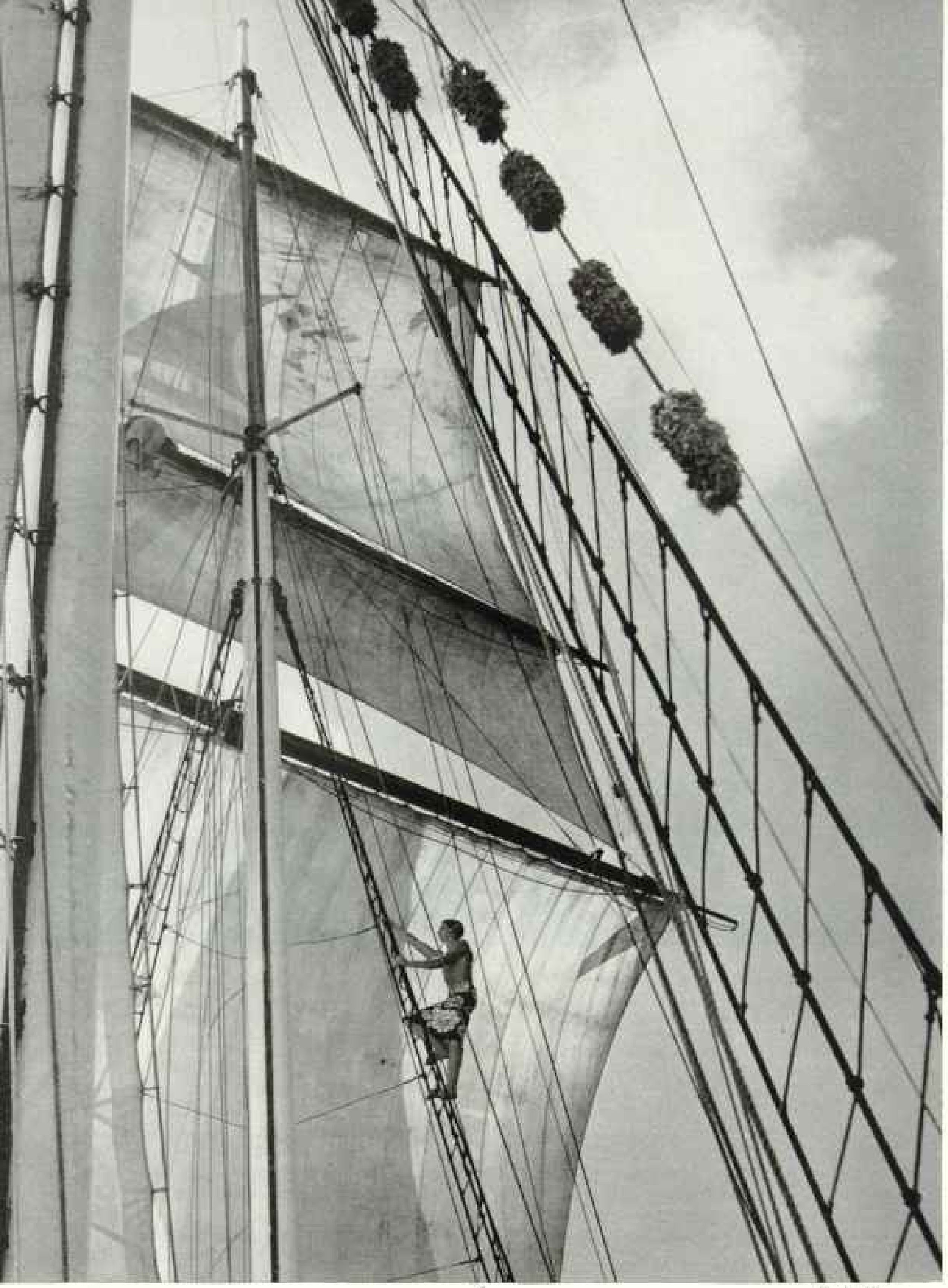
A new topmast was machine-tailored by Government workshops in the Canal Zone.

Atlantic to Pacific in 105 Minutes

While waiting for the repairs we hired a car and went touring. Using Panama's new concrete highway, we drove from sea to sea in an hour and three-quarters.

How many days, we wondered, did it take the Conquistadors to cross the fever-bound Panamanian jungle with mule trains loaded with Inca treasures? Should anyone wish to work out the answer, the menacing jungle remains unchanged a few feet from the road.

In Colón we found four barkentines at anchor. "Could we sail enthusiasts go aboard for a visit?" we asked. A suspicion-laden silence was our answer. Hoisting sails and Russia's red flag, the barkentines grumpily transited the Canal and disappeared into the Pacific.



6 Charles Allmon

Breeze Stiffens; Sail Must Be Shortened. Neil Chase Rises into a Lofty White Solitude

Yankee's red insignia appears in silhouette through the fore-topgallant sail. Baggy wrinkle (shredded rope) twisted tightly around the shrouds protects the mainsail (left) from chafing. One lad is at work on the topsail yard.

Irving Johnson

Easter Island Contributes Half a Ton of Curios to Shrewd *Yankee* Traders

Easter's people have lost their ancestors' art of carving colossal statues (page 18). Instead, they fashion small imitations and sell them to passing vessels. Because no yacht had stopped at Easter since the last *Yankee* visit in 1940, crew members found bargaining easy. They traded soap, perfume, candy, and old clothes for stone images, wooden swords, hats, canes, and carved animals. Arthur Johnson, himself a collector, admires the trophies.

As we, too, headed into the ocean, the watch announced, "Snakes!" Skeptically—for we had never seen sea snakes off Panama—we ran to the rail. Below, yellow- and brown-striped serpents swam almost upright. We counted hundreds the next two days.

Neptune, Foot in Cast, Limps Aboard

As we crossed the Equator, King Neptune came aboard. With a cast on one foot, he limped suspiciously like Braidwood, who had sustained an injury in Panama. Neptune treated the new Line-crossers to an all-day hazing (page 15).

This event coincided with the twelfth birthday of our son, Arthur, now on his third world voyage.

Arthur, who in his baby carriage came aboard the old *Yankee* and at 22 months climbed the rigging, has taken to the new brigantine like a monkey to a treetop. His greatest pleasure is to scale the masts and dance on the footropes (page 38). His sorrow is to confine himself at his cabin desk and study a correspondence school course, his teacher-mother standing grimly by.

While exploring the rigging for 15 hidden gifts, Arthur forgot about school until the cook presented a cake frosted with the words, "Happy birthday, scholar."

Anchoring in Salinas, Ecuador, a few of us made a railroad trip to Guayaquil, passing through a dusty country which had seen no rain in eight years. Donkeys and cattle on

the tracks stepped aside at the last possible minute. Later we saw the sights of Quito.*

Six hundred miles west of Ecuador lie the Galápagos Islands, our next objective. These volcanic eminences are so unlike any other spot that they seem transferred from another planet. In places their black lava faces expose weird bubbles, craters, and spires, giving the impression of having just cooled.

Galápagos Islands: Nature's Freak Show

Almost waterless, the Galápagos are not inviting; the discoverers found them uninhabited. Today's small population is composed mainly of Ecuadorian convicts, who don't want to be there, and a tiny band of settlers, who like to be left alone.

So inhospitable to man, the islands look attractive to birds, fish, reptiles, and wild beasts. Their very name comes from the mammoth land turtles which Spaniards call *galápagos*. These the old whalers, dumping them in ships' dank holds, used to carry off as fresh meat for long voyages. Survivors share a reptilian domain with dragonlike 3-foot iguanas.

Flightless cormorants, vivid flamingos, hawks, frigate birds, bosun birds, boobies, and small white albatrosses make their home here.

One evening as we rocked at anchor, someone shouted, "Owls!" Fifty birds circled the ship, occasionally alighting on the rigging. Catching one, we took him to the cabin, where we admired his owlish eyes and perfect composure.

Though the Galápagos stride the Equator, they shelter colder climes' seals and penguins, which here enjoy the Antarctic's Humboldt Current.

On an islet off Elizabeth Bay, Albemarle Island, we found seal and penguin colonies almost side by side. Penguins bowed to us in a courtly way. Seals were friendly until Arthur, wishing to play, chased them into a cave. They glowered at him from the gloom.

On a tiny island we captured seals at will. One baby sea lion we deposited in *Yankee's* bathtub, which is built on two levels, wet and dry. Using these, our bathing beauty happily flopped in and out of water. She became *Yankee's* official seal (page 28).

Meat Is Free; Fish Never Fail

The few islands with rain and grass in the high interior harbor wild cattle, goats, and pigs whose ancestors the whalers marooned to provide fresh meat for future visits.

From James Bay, San Salvador Island, where we anchored a couple of nights, we spotted dozens of wild goats and pigs on an old crater. The sight sent a boatload of hunters hot for shore. Memory does not tell how many animals they shot, skinned, and thrust into our deep freeze (page 17).

With his army rifle Don Crawford brought down two pigs. Eric Wolman, out of ammunition, ran down a goat and took him by hand, like the speedy rabbit hunter of popular jest.

Fish? No one could miss a grouper or blue dolphin. "How many can you use?" a fisherman might ask the cook.

"Six," came the answer.

Hook and line were dipped six times. Up came dinner.

Sharks and 20-foot manta rays abounded. Sea turtles, caught by hand, replenished our larder (page 14).

For a fishing thrill we rendezvoused one December day with the tuna fleet anchored in Tagus Cove, Albemarle Island, 3,000 miles from its San Diego headquarters.

That night a bright red star of electric lights flashed at the masthead on one of the boats. The rollicking Portuguese fishermen's Christmas Eve celebration was in full swing.

Girls Dance with Bearded Tuna Men

The fishermen were amazed to find girls on *Yankee* and did not neglect the opportunity to arrange a Christmas Day dance aboard *Bernadette*, one of the fleet. A 300-pound accordion player perched on a hatch and pumped dance music tirelessly. *Yankee's* five women got a tremendous rush from the bearded fishermen.

We danced, sang, and caroled through an evening long to be remembered. *Bernadette's* cook, accustomed to powerful appetites, outdid himself, serving an enormous dinner.

For two days and nights half our party went fishing with *Belle of Portugal's* men to see how their iron-muscled arms haul in 10 to 50 tons of fish a day for the canneries. We worked beside them on platforms awash with heavy swells (page 19).

Even the girls agreed it was the fishing thrill of a lifetime, though some of them were nearly jerked overboard. Henceforth every tuna salad will remind them of excitement galore.

Chum (here live sardines) was cast into the sea to attract a hungry school. Snapping greedily, the tuna did not distinguish between bait and feathered, barbless hook. No one had to wait for a bite.

So heavy were our catches that one man could not always lift the load out of the sea.

* See "From Sea to Clouds in Ecuador," by W. Robert Moore, December, 1941.

Kodachrome by E. Louise Stewart

A Dream Comes True—the Brigantine *Yankee* Sails the Globe Under a Cloud of Canvas

Germans built the steel-hulled ship in 1912 for the North Sea pilot service, but lost her to the British as a prize of World War II. Bought by Irving Johnson, she was renamed for the schooner *Yankee*, which carried him on three world voyages. Old-fashioned shipwrights in Brixham, England, outfitted her with yards on her foremast to carry square sails. In brigantine rig, she flies 7,773 square feet of canvas. Her best speed is 12 knots; average, 6.

Here the 1,600-square-foot balloon jib billows in the Pacific trades. Two amateur sailors aloft are paying and working their way around the world—Gloucester to Gloucester—in 18 months.

Shipmates! Boy and Girl Sight an Ocean Nomad

At Gloucester four able-bodied seawomen signed aboard as blacksmith, sailmaker, cooper, and lamp trimmer. They stand regular watches with the boys, four hours on and eight off. They take a turn at the wheel, correct pilot books, do sewing and cleaning. A valuable morale factor, they make the ship homelike.

Most of the boys are between 17 and 22 years. Some are making the world cruise between high school and college. At first sight of the lofty footropes, they vowed as with one voice, "Boy, you'll never get me up there!" Page 38 exposes their error.

Together, boys and girls accumulate memories of exploring romantic islands. They gain in health and sun tan every day. Wandering quiet seas, they escape blaring radios.

One day, on a seemingly endless Atlantic run, this steamer suddenly appeared. A telescopic view would show her signaling steam's amazement at the sight of sail.

An Accordion-pleated Santa Claus Swings Above the Voyagers' Christmas Dinner. Fried Chicken Goes Down the Hatch

No matter how *Vantage* rolls, the balancing table is always in equilibrium, but sometimes up to the chin when the ship heels.

Kodachrome by Irving Johnson

Yankee Tries Her Extra Wings. Lads on Footropes Set a Stunsail, Sea's Rarest Sight

Reaching wide for the breeze, stunsails (short for studding sails) ride booms far beyond the yards. Under such sails the China tea clippers won races in the 1860's, but *Yankee's* are unique—they're nylon.

Kodachrome by Irving Johnson

What a Sailor Sees from Aloft: the Camera Looks Down 50 Dizzy Feet to the Deck

As *Yankee* approaches Raivavae, crew members on the starboard rail take soundings with the lead line and lookouts keep watch from the rail. While holding the camera, the skipper coms the ship through coral reefs.

Bare-handed Divers Catch a Sea Turtle

So inhospitable to man, the drought-stricken Galápagos Islands swarm with animal life.

Dragonlike iguanas overrun the rocks. Penguins and seals, air-conditioned by the Antarctic's Humboldt Current, make the islands their home in the Tropics. Ducks seem so tame that hunters grow bored. Fishing is so good that no one can miss. Spiny lobsters offer food and fun.

One evening a flock of 50 owls circled *Yankee* and perched in the rigging.

Crew members searched in vain for wild *galápagos*, the huge land turtles which named the islands. They did find, however, an abundance of sea turtles to satisfy the ship's larder and their own desire for thrills. As a big turtle could submerge with one man, swimmers and boatmen operated in teams.

These hunters in Elizabeth Bay, Albemarle Island, are (left to right) Ed Douglas, Raymond Moeller, Peter Sutton, and Jack Trevett.

Painted Lady and Dandified First Mate Satisfy Neptune's Demand for Nonsense at the Equatorial Crossing

Yankee carried so many "polliwogs" that "shellbacks" spent all day initiating them. Here Mary Booth submits to a water-color tattoo. Stephen Johnson is prettified by Meg Young (left) and Louise Stewart. To retrieve his workaday clothes, he had to climb to the end of the foreyard. The occasion coincided with the twelfth birthday of Arthur Johnson (right), the skipper's son, a veteran Line-crosser who grew up aboard the old *Yankee*. He found 15 presents hidden in the rigging.

Squall-broken Mast and Tangled Sail Litter the Deck: a Clean-up Job for All Hands

↑ Neither Gale nor Sun Stays the Knitting of *Yankee's* Official Lamp Trimmer

Louise Stewart, a former staff member of a woman's magazine and a wartime captain in the Marine Corps, finds civilization's shoes irksome. Girls and boys alike, once they feel the deck, revert to childhood's bare toes. Ed Douglas, in oilskins, takes a turn on watch.

↓ Skipper Slits Shark as Bait; Eric Wolman Skins a Wild Goat

Sharks cruised the Galápagos coves; this monster was lured to his brethren into rifle range. The islands teem with descendants of cattle, goats, and hogs marooned by whalers; their flesh filled *Yankee's* deep freeze. Eric, out of ammunition, ran down this goat.

Kodachrome by Irving Johnson

Easter Island's Mysterious Stone Images Receive a Jeep Delegation. Arthur Slides Down a Weathered Pug Nose

A Monstrous Catch, Too Heavy for One Pole, Leaps Aboard

Off the Galápagos the Johnson party met old friends, the tuna crews from San Diego. For two days they shared the fishermen's briny battles. One day they helped catch 12 tons.

Tuna were lured with live bait; they were caught on barbless, feather-trimmed hooks. Headed for a common fate in the cannery, they came in four standard sizes—one-, two-, three-, and four-pole fish.

On the left, their stout bamboo poles converging on a single line, fishermen team up to drag in a two-pole whopper. Should they hook a 250-pounder, they'd have to cry for help.

One-pole fishermen on the right stand on the platform awash from a heavy swell. They pray for 35-pound "small fry," for anything larger may jerk them into the sea. John Wright, Terry Glenn (girl wearing head scarf), and Jack Trevett (right to left) share the professionals' platform.

Kodachromes by Irving Johnson

Kodachrome by C. J. Chase, IV

Great-grandsons of the *Bounty* Mutineers Drive Their 37-foot Longboat Out from Pitcairn to Visit *Yankee*

Never-ceasing seas batter their rocky, harborless island. To get in and out, these men have to be superlative boatmen (page 22).

Playful Porpoises, Real and Human, Chase the Ship

Porpoises, endlessly amusing, always collect an audience on *Yankee's* rail. Occasionally they leap 10 feet into the air and splash back. This fellow, pictured as he came up for air, exposes the open blowhole in his head. For diving he has an automatic "flap valve."

On the right, Arthur Johnson goes bosun-chairing. Strapped in a light carriage swung from a davit, he lets his body become a surfboard, madly riding a smother of foam. Tossed into the air, he whoops with delight—unless he chances to swallow the next wave.

At three knots the sport is mildly exhilarating. At five it is brisk. At seven the rider fights to hold on. At nine only the boldest man tries it. That's Arthur's speed—nine knots—but of course he's a bosun-chair veteran on his third world voyage. Sometimes a sea knocks him clear of the water; then he comes down with a crash. He saves himself from a knockout by twisting a trifle.

Kodachromes by Irving Johnson

Kodachrome by Charles A. Bathanley

Angry Bounty Bay Shatters a Surfboat. *Yankee's* Men Salvage Drenched Laundry, Retract Farewells, and Stay a Bit Longer on Pitcairn

When Pitcairn women, dressed in their finest, saw their men imperiled, they bravely rushed shrieking into the sea, grabbed the stern line, and pulled in the boat. Finding no one hurt, they decided to continue the swim for fun and bob for floating tomatoes. The log ramp is used for beaching longboats.

Swab the Deck! Cut Hair! Knit Socks! —a Girl's Life

Except in foul weather, *Yankee's* deck gets a pre-breakfast scrubbing, but this job actually belongs to the men. That's one reason why Miss Stewart (left) grins so happily.

Right: Miss Booth gives Alan Pierce a free haircut. Though her father manufacturers razors and scissors, she never tried barbering before. In this occupation she has two feminine associates, and the ragging they take from the young men enlivens the *mess* table for hours. Boys boast of gashed, grooved locks. When they sit down for a trim, they audibly wonder whether they'll have any hair left.

Below: Miss Stewart is still knitting. Mrs. Irving Johnson, sitting on the deck, munches a banana and writes, "Dear Diary."

Kodachromes by Irving Johnson and Charles Allmon

Kodachrome by Stephen H. Johnson

Pitcairners Have a Dizzy Climb to Cliff-top Homes, but Crates Ride a New Wire Cable

Often multiple poles converged on a single line. Two-, three-, and four-pole tuna required as many fishermen. Luckily for us, the monsters had no partners in this briny tug of war.

Yankee's skipper felt a bite so violent it would have yanked him overboard if his feet had not been jammed in the fishing platform. His comrades helped him land a 125-pounder.

The Wittmers Live Alone and Like It

On Floreana, one of the Galápagos, we found our old friends, the Heinz Wittmers, still leading a Robinson Crusoe existence. This German couple settled there in 1932 "to get away from the world."

Other people have tried a hermit's life on lonely Floreana, but only the Wittmers remain, housed beside a spring high in the interior. Two of their children, Rolf and Ingeborg, were born on the island.

From Black Beach it is a long hard climb to the Wittmer home, five miles inland. Four of us set out one afternoon.

We got a warm welcome. Mrs. Wittmer, having cooked two weeks' dainties, fed us, we protested, every waking moment.

We gorged on bean soup, Brussels sprouts, banana pie, pineapple, eggs, tomato jam, and a wine made of sugar, molasses, and bananas. All were homegrown; they represented a back-breaking achievement cultivating a wilderness.

Rolf toured us around a plot of land where he and his brother Harry were experimenting with a tropical wheat. Their sister led the harnessed donkeys while they plowed.

Rolf at 15 years does a man's work, just as pioneers' sons always do. He has the ingenuity of a backwoodsman. If need arises, he hunts by night, works by day. He was eight when he shot his first wild bull.

Mr. Wittmer showed us treasured items in his workshop. These included salvaged iron rails, rawhide lariats, a small forge, and a lathe fashioned from scraps and powered by foot. On a wall hung two homemade cross-bows used for hunting when ammunition ran low.

Knowing how these isolated people needed the world's wares, Mrs. Johnson had shopped for them. And now the Wittmer donkeys came in from the beach laden with yard goods and clothing. Bags of flour were the first seen in months. A mail-order catalogue delighted everybody.

Mrs. Wittmer almost wept at the sight of new dishes and six cans of lye for soapmaking. To the men, scythe blade and mattock seemed like Christmas presents.

In exchange the Wittmers gave us fruits. These they loaded in donkey saddlebags of wild-bull hide, the hair still attached.

Rolf, visiting the ship, spoke for his heart's desire.

"Next time you come," said he, "please bring me an Army rifle."

Lonely Floreana offers a strange contrast to neighboring Baltra Island, which keeps in touch with the world by plane.

During the war Baltra supported a United States Army airbase. We found it still garrisoned by 150 American fighting men. Their wives liked its climate so much more than Panama's that they did not complain of the isolation. Any mother with her child got a round-trip flight to the Canal Zone every two months.

From the Galápagos we headed for Easter Island, 14 days and 2,000 miles to the south-southwest. For four days the sails hung limp in perfect calm. One of the Diesels took up the slack.

One day we shut down the engine for a swim and lifeboat drill. Boys and boat were barely wet when we sighted a shark periscoping in. Swimmers scrambled aboard. A shark hook was baited and passed to the rowboat.

Bold and hungry, the villain rammed the boat on his first pass. On his second he gulped the hook.

Later we cut him open and found he hadn't eaten for days. Arthur, who takes delight in autopsying fish, turtles, and mammals, stood watch over the dissection.

Easter's Images Visited by Jeep

During the calm Braid broke out some hard algarroba wood bought in Panama, Larry Bard produced a lathe, and the boys turned out belaying pins.

The doldrums were chased by a storm which compelled us to douse the mainsail and heave to. We were pleased by the way *Yankee* took care of herself, even with no hand at the wheel. Though seas seemed bound to smother decks, the ship seldom took so much as spray aboard.

Easter Island, where we soon arrived, described the storm as the strongest within memory. The yearly wool-collecting steamer, riding at anchor, had broken her chain.

Easter, famed for its hundreds of huge stone statues, is just one big sheep ranch. The rolling, treeless country reminded some of us of the Wyoming plains.

Our British hosts, lessees of the grazing rights, lent us horses and a jeep for an exploration. We inspected the titanic statues carved from a crater wall before the first white man saw Easter, Polynesia's easternmost outpost in the Pacific. Enigmatically facing the

Charles Allmon

With a Good Toe Hold, Alan Pierce Feels as Safe as on Deck 70 Feet Below

Alan obeys the old rule, "One hand for yourself, the other for the ship." His back to the wind, he balances across the foreyard, keeping constant guard against a sudden lurch. Bare feet clutch a special footrope needed at yard's end. Old-time sailors often used sea boots whose heels gripped ropes as a cowboy's grip stirrups. Neither darkness nor storm stops work aloft. *Yankee's* sail tenders jestingly say that when the ship rolls they can almost wash their faces in the sea.

sea, they stand as monuments to a vanished golden age (page 18).*

Another major sport on Easter was trading with the natives. In return for textiles, including some worn shirts, crew members picked up half a ton of curios. Some were foot-high, red stone copies of the heroic statues (page 7).

Yankee Takes Gifts to Pitcairn

From Easter the *Yankee* set her course for Pitcairn, an island that means a lot to us. As we approached, we never had so many hands in the rigging looking for land. Three girls and eleven boys were having a hilarious time aloft when, from the masthead, Al Pierce shouted, "Land ho!" Pitcairn lay 40 miles ahead.

This mile-wide island, rising 1,000 feet above the South Pacific, was deliberately chosen for settlement by reason of its very loneliness (pages 20, 22, 24).

Captain Bligh's English jack-tar mutineers and their Tahiti brides, burning the stolen *Bounty* so they could never leave or be traced, settled here in 1790. The last survivor, John Adams, was rediscovered in 1808 (page 33).

The mutineers' great-great-grandchildren, according to our private census, numbered 132 on Pitcairn; a few others were working or studying in New Zealand.

Having visited the island on each *Yankee* voyage, we have made fast friends. And, like the Wittmers, the Pitcairners appreciate our visits because we bring needed goods.

This time we bore a ton of presents, including 20 pounds of precious rat poison for Pitcairn's only enemy. Gifts were sent by various

* See "Great Stone Faces of Easter Island," 11 ills., National Geographic Magazine, February, 1944.

Irving Johnson

As if on a Christmas Morning, Pitcairners Open Their Presents from a Generous World

Not many vessels stop at isolated Pitcairn and, of those that do, *Yankee* is almost the only one that comes back regularly. On this tour she carried a ton of supplies, including clothes and household utensils. Pitcairn has to improvise so many tools that the vise (right) was especially appreciated. This collection was sent by the Boston Yacht Club, whose burgee is shown. Mrs. Johnson (back to window) presides; Norris Young, the island's magistrate, sits at her right.

individuals, the Boston Yacht Club, and the Seventh-Day Adventist Church. Pitcairners, as members of that church, never swear, but they have a way of using the word "please" as compellingly as a ringing oath.

It was not long before we spotted the Pitcairn longboats, manned by some of the world's best oarsmen, coming out from their harborless, surfbound island to meet us.

Ship's Doctor Doubles as Dentist

Great was the welcome, for eight years and a war had separated us. Crew members, invited into simple Pitcairn homes in cliff-top Adamstown, were given the best beds, always placed beside open windows, so they could enjoy the breeze, stars, and waving palms. Their skins and laundry were washed in blessed hot water. They were stuffed with watermelons, chicken, and homemade bread.

One of our crew grumbled, "Only one meal a day," but he soon learned that the "meal" lasted all day.

Dr. Bothamley, who hadn't had much practice aboard ship, found himself the busiest man on physicianless Pitcairn. At a little dispensary run by an Adventist nurse he set up open clinic.

Every Pitcairner, ill or well, had to see the doctor, if only to recite a vague symptom or recount a healed injury. Some complained of a nonexistent heart trouble. Many, surprisingly, did have high blood pressure.

"Doc" attended to scratches, gave advice on "fits," and removed four cysts; but he performed most nobly in the unaccustomed role of dentist. He had lots of work, for Pitcairn teeth had long gone unattended. Most patients required removal of jagged stumps left by clumsy amateur surgery.

Arthur Drapes a Kinkajou as a Living Neckpiece

The skipper's son acquired this pet in Panama, where it is native. Naturally nocturnal, Kinky did not like staying up days, but took to the rigging as to its familiar treetops. Kinky loved to hang by a long prehensile tail. "Wish I had one, too," Arthur remarked, "so I could furl sail with both hands."

Irving Johnson

***Yankee's* Official Seal Enjoys Voyaging in a Tub**

Baby seals captured in the Galapagos became so attached to the crew that when thrown back to their mothers they tried to climb back aboard ship. To receive Arthur Johnson's caress, this affectionate baby sea lion has splashed out of the water onto the tub's dry level (page 8).

Irving Johnson

Pitcairn's Boat-to-boat Salesmen Swarm Aboard a Passing Steamer to Peddle Fruits and Souvenirs

Rangitata's 900 fruit-starved English passengers, emigrating to New Zealand, bought pineapples and mangos until arms and shirt fronts could hold no more. *Yankee* hands, posing as islanders, enjoyed a tongue-in-cheek interview telling a London reporter about their "hardships" (page 30).

Charles Allmon

Fading Wind Demands More Sail. Three Lads Send the Big Ballooner Up in Stops

When the boys have hoisted the ballooner to the masthead, another gang will heave on the sheet, ripping the stops. Then the sail, caught by the wind, will pop open. Now the three working headsails must come down; otherwise they will blanket the 1,600-square-foot ballooner (page 9). Steve Johnson, Larry Bard, and Frank Power (left to right) fail to disturb an off-watch companion caulking (sleeping) on the forecastle.

Meanwhile the skipper, touring the other side of the island, looked up the Galápagos turtles he had marooned years before and found them grown to tremendous size.

Island Goes Wild over Slow Movie

The captain had the most fun, however, showing motion pictures of his third world voyage. To him the lecture was routine, but to amusement-starved Pitcairners the occasion was memorable. They went wild over 8-year-old pictures of themselves. Not even Sing Sing's shut-ins, to whom the film once was shown, reacted as enthusiastically.

Projection suffered from a power plant so weak that the machine barely turned. The 70-minute film took three hours. Pitcairners appreciated the graveyard pace all the more, for it gave them time to study every face in slow motion.

One day the steamer *Rangitata* approached with 900 passengers, all English emigrants to New Zealand (page 29).

For just such a sales opportunity Pitcairners had grown fruit, woven baskets, and carved curios. With the proceeds they hoped to buy the nails, paint, kerosene, cloth, and flour their little domain could never supply.

Though the seas were too rough for the women, Pitcairn's best boat-to-boat salesmen, the men launched longboats and set out to meet the passers-by.

With them went several members of *Yankee's* crew disguised as natives. Having just

Charles Allmon

As Fog Closes In on Moorĕa's Lava Peaks, *Yankee* Hoists Sail for Departure

Here Captain Cook fought a war of nerves to recover a stolen goat, a strange and wonderful prize to the islanders. They answered all his demands with evasive denials. To teach them that they could "trifle with me no longer," Cook marched across Mooréa at the head of 40 men. Spies kept him informed of the goat's hiding place. He did not recover it, however, until he started burning houses and war canoes.

read the Nordhoff and Hall *Bounty* trilogy, they were prepared to pass themselves off as a "Christian," "Young," or other islander.

Tongue in cheek, Hazard (Buff) Campbell submitted to an interview by a London reporter covering the voyage. Describing himself as "Robert Christian," he recounted Pitcairn's hardships heart-rendingly.

"I want to move to the United States," said "Christian."

"Don't," advised the reporter. "Your life on Pitcairn is far better."

Other *Yankee* men, peddling curios, gave convincing sales talks.

No argument was needed, however, by the fruit vendors. At sight of the pineapples, melons, mangoes, and bananas, the fruit-starved Englishmen opened purses, stuffed arms and shirt fronts with purchases, and retired to cabins for a feast.

We hated to leave the kindly Pitcairn people, but our schedule allowed no delay. *Yankee* was impatiently riding the swells, safely distant from the rocks. Pitcairn goodbyes are always sad.

Wreck Mars Farewell

Together, islanders and sailors streamed down to the log-ramp landing in Bounty Bay (page 22). Farewell gifts, including fruit and 30 loaves of bread, were heaped in a longboat. Most appreciated present of all was fresh laundry.

Though the bay was heaving savagely, Pitcairn's best oarsmen—14 oars to a boat—calmly slid a longboat down the ramp. Five of our crew jumped in, others waiting for the next trip.

Andrew Young, an islander, took the steering oar, conned the angry surf, and gave the command. Fourteen oars strained.

Breaker after breaker passed by harmlessly. Then a Niagara gathered height and, just as the boat came in, broke crashingly.

Oars flew into the air; a man dived over the side. Keel broken, the boat wallowed close to rocks.

Seeing their men in danger, Pitcairn women wailed in chorus. Without regard for their best dresses they plunged into the surf, grabbed the boat's stern line, and pulled the men to safety.

Assured that no one had been injured, the women then salvaged drenched laundry and wave-tossed watermelons. Rescues accomplished, they stayed in to enjoy the swim. Some, floating on their backs, munched tomatoes.

With laundry freshly ironed, but some cameras ruined, we got away the next day. The longboat men, shooting a milder surf, deposited us on *Yankee*. Rowing away, they gravely sang "In the Sweet Bye and Bye." Tears clouded some eyes.

"Look, Girls! Men!" Rapa Pursues Them

With each cruise *Yankee* makes it a point to tour some new island. This time we chose Rapa, of which we had heard alluring tales.

One morning we sailed into the island's magnificent crater harbor. Rapa's jagged, volcanic skyline awed every hand (pages 36 and 37).

Only natives and a solitary Frenchman met us in the little seaside settlement, but they were happy to have unexpected company, accustomed as they were to only one ship a year.

Rapa maidens, all but swooning with joy, looked on *Yankee's* men as heaven-sent cargo. So many of their own men had obtained jobs in Tahiti that the feminine population outnumbered the masculine six to one.

A gang of giggling girls boldly pounced on a blushing New Englander and all but kidnaped him. His guffawing comrades, far from rescuing him, took pictures of his embarrassment.

In olden days, when the population numbered thousands, Rapa men fought for women. Rival clans staked off territories and, to protect lands and women, erected seven mountain-top forts.

Some of us climbed Rapa's steep crater walls to inspect the old citadels. Puffing and gasping on reaching the summits, we decided no Rapa war was worth the effort.

Appetites whetted by the hike, we feasted on delicious raspberries, which grew wild all over the island. Introduced by a Frenchman a number of years ago, they have become a prickly nuisance to the natives.

On our departure the islanders traded 30 quarts of selected berries for nine bars of soap. Each party was convinced it had the better of the bargain.

Raïvavaé Feasts and Garlands Us

In a few days we raised the island of Raïvavaé. As we entered the treacherous, beaconless harbor, the skipper employed a skill he often practiced with the wartime Navy.* Climbing the foremast, he kept a lookout for submerged coral heads lest they slit *Yankee's* belly (page 13).

Murky water required additional precautions. A lead-line crew took soundings from

* See "Adventures with the Survey Navy," by Irving Johnson, National Geographic Magazine, July, 1947.

♠ Every Woman Is Her Own Laundress; Men Have To Do Their Own, Too

Yankee's clothesline is not an infallible sign of Monday, but an indication that rain has been trapped. Ship's tanks cannot spare fresh water for laundry. Any time the crew visits an island, garments may be seen drying on the bushes.

♥ Mrs. Johnson Examines the Headstone of the Last *Bounty* Mutineer

John Adams alone among the men survived Pitcairn's interfamily massacres. Learning to read in old age, he taught youngsters from *Bounty's* Bible. In 1808, two decades after the mutiny, his hide-out was discovered, but he escaped punishment.

Kodachromes by Irving Johnson

A Quartermistress at the Wheel . . . *Yankee*, Close-hauled on the Starboard Tack, Roars Along at Eight Knots Toward Rapa

For sentimental reasons, the lovely teak wheel was salvaged from the old *Yankee*. Girls take the helm to relieve the boys for work aloft; they have demonstrated their ability to steer by wind or compass. Here Miss Stewart, her back to the chartroom, makes a camera target for John Wright (left) and Alan Pierce. Right: Though the brigantine rolls, crashes, and shudders, nothing disturbs the boy napping abaft the bowsprit.

The Bowsprit Rigging Provides More Fun than a Haymow

On moonlight evenings it is great fun to ride the bowsprit and look back at the dazzling phosphorescence churned by the bow. That is a good time for swapping stories.

Ofttimes when the boys are off duty you can hear typewriters clicking in the cabin; nearly everyone keeps a diary or plans to write a story. They are zealous photographers, as the opposite page proves. *Yankee* carries close to 35 cameras, including many for making movies.

Here James Wells (top) and Peter Sutton enjoy acrobatics above a calm sea between Galápagos and Easter Island. The netting is superfluous; they wouldn't mind falling in, but they have to keep an eye peeled for sharks.

Kodachrome by Alan Villiers

Kodachrome by Irving Johnson

Rapa Island's Jagged, Volcanic Skyline Awes Two Fair Mariners Perched on the Main Spreader

Yankee anchors in the eruption-shattered crater (opposite page). Rapa's only village is dominated by its white church.

This Family Boasts One of the Few Men Left on Rapa, Where Females Outnumber Males Six to One

As most native boys had moved to Tahiti for jobs, *Yankee's* young sailors seemed fair game to Rapa's lonely damsels. One tall New Englander was tackled and all but kidnaped. Wild *red* raspberries make a hike on Rapa a feast as well as an exercise. *Yankee* rides the harbor far below.

Kodachrome by Irving Johnson

Kodachrome by Alan Pierce

Can Any Young Man Ever Stay Out of the Lofty Rigging of a Sailing Ship?

Approaching Tahiti, the crew swarms aloft setting more sail. One of the girls climbs a ratline. Arthur Johnson (hands on ratline) comes down from fore-topmast, where he loves to survey the world in dreamy solitude.

Kodachromes by Alan Pierce and Stephen R. Johnson

"My Bread Will Rise in the Roughest Sea": the Cook's Reply to His Critics

Donald Crawford, pictured off Easter Island, is the only professional aboard. Few Army mess sergeants suffer more gibes. At table Don's companions jeer each offering. Retorts he: "My bread will rise . . ." Don is writing *Pots and Pans Around the World*.

Tahiti's Farewell Party Lasts till Dawn; Soup and Flowers Deck Festive Board

Photographer Charles Allmon (second on left), about to sail on *Yankee*, plays host to Papeete friends. He ate so much, he regrets, that he couldn't dance with the beauties beside him. Allmon faces James Norman Hall, co-author of the *Bounty* series.

Kodachrome by Charles Allmon

A Ton of Nets Goes Hunting for a School of Unwary Fish

These Tahitians amazed the photographer by sighting prey in waters so dark he was unable to detect any movement. Once the fishermen have set the nets, 30 to 40 helpers on shore will pull in the lines (page 46).

Kodachromes by Charles Allmon

A South Seas Venus Dancing the Hula Swishes a Bark Skirt and Shakes Frangipani Leis

Her garlands are age-old, but the brassiere has the new look; grandmother wouldn't have known what to do with it. Here in romantic Tahiti, photographer Allmon met author Johnson and hitched a ride on *Yankee*.

A Sailing Canoe Bearing a Human Balance on the Outrigger Glides Home to Bora Bora, Once an American Base

Hips Alternate Like Reciprocating Engines; the Froufrou of Rainbow Skirts Sounds Across the Grassy Stage

Dancing in honor of a new chief, this garlanded chorus sings, in effect, a hymn to pagan times, but a wrist watch (foreground) proves the old gods have not returned. Men wear flaming poinciana headdresses. Guitars, drums, and whistles provide music. The island is Moorea, 10 miles from Tahiti.

Calloused Bare Feet Tread Jagged Coral as if It Were Sand. Spears Lance the Boiling Surf for Fish of Brilliant Hues

So generous is Nature with fish and fruits that Tahitians seldom toil. These fellows think they're doing a day's work; Americans might journey thousands of miles just for the sport. On this shore the photographer and two friends, all cautiously shod, caught 60 spiny lobsters in an hour.

Oilskins? Sea Boots? Flowered Lava-lavas Protect These Carefree Tahitians. Sunburn They've Ignored Since Birth

Kodachrome by Charles Allmon

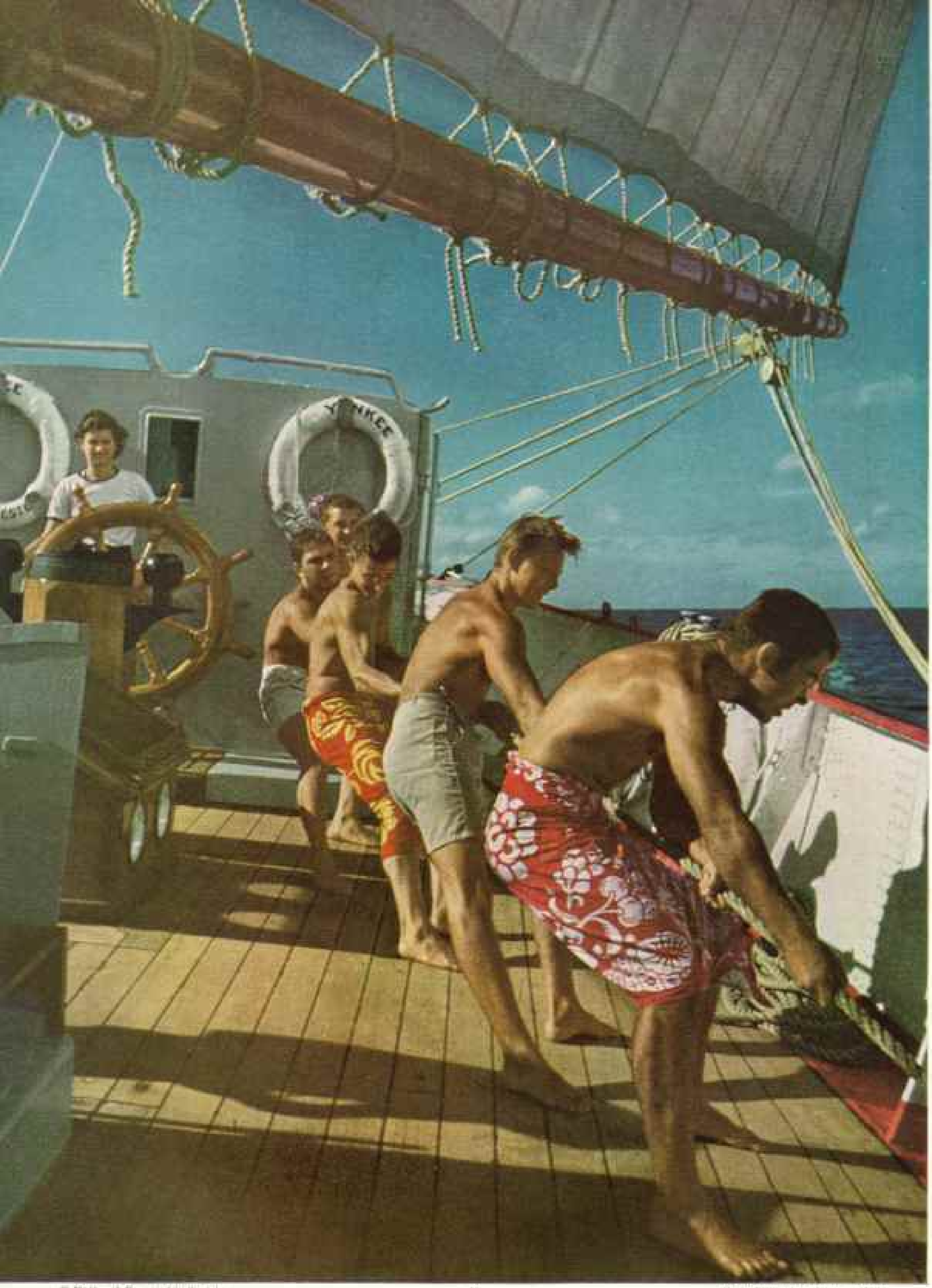
Kodachrome by Charles Allmon

Men, Women, Children—Every Hale Member of the Tahiti Fishing Village Lends a Brown Hand to Drag In His Share of the Catch

Tahiti Laughs at Housing Problems. Roofing Is Simple. Palm Thatch Is Soaked to Make It Pliable for Weaving (Right)

These fronds, when laid across rafters, will keep out rain and sun but admit sea breezes. True, they will harbor lizards, which may drop into the soup but do pay for their lodging by devouring insects. For weaving, the frond is split down the midrib. No nails are used.

Kodachromes by Charles Allmon



Reduction by Charles Allmon

"Heave Ho!" Shouts Mate Steve Johnson (Right), Hauling In the Mainsail Halyard

Leaving Tahiti, the crew dons *parrus*, the Polynesians' flowered shorts. Terry Glenn twists the wheel. Others (right to left) are Larry Bard, Alan Pierce, Jack Trevett, and Neil Chase. *Yankee* carried mail north to Honolulu.

the starboard rail. Sounding out a channel, the second mate went ahead in an outboard-motor craft.

Minus the motor, Capt. James Cook explored uncharted lagoons in exactly this manner 175 years ago.

In Raïvavaé we got the feeling of a true South Seas island. Here were long white beaches, a grass-grown dock, swaying palms, taro patches, hibiscus, and bougainvillea.

A Polynesian Fireless Cooker

Hospitable islanders dined us in Polynesian style. Pork, chicken, taro, and bananas they wrapped in green ti leaves and cooked over hot covered stones, a natural fireless cooker.

Fish and clams were served raw after seasoning in salt water, lime juice, onion, and coconut cream. This cream was not the watery milk of the coconut but the rich, nut-flavored liquid prepared by squeezing the juice out of the meat.

Islanders adorned us with leis and watched to see that no one shirked the banquet. One hardy lad downed ten clams.

Politeness demanded no leftovers, but when we staggered to our feet three-quarters of the meal remained. At a second sitting the hosts' relatives polished off the remainder.

Before us now lay beautiful Tahiti, fragrant with tropical flowers. A seven-thousand-foot peak towered overhead.

On February 22 we stole into Papeete's tree-fringed water front and tied up *Yankee's* stern to the main street. Among her many neighbors were the Mexican schooner *Barca de Oro*, William Albert Robinson's schooner-ketch-brigantine *Varua*, and the gaily painted junk *Cheng Ho*, now in trading service between Papeete and Honolulu.

Five days on Tahiti consisted of one party after another. We had barely landed when the American consul invited us to his George Washington's Birthday party. Then the Robinsons and the Preston Moores entertained us.

Mrs. Norman Hall served brownies and Toll House cookies, a culinary miracle in mid-Pacific.

Her famous husband, co-author of the *Bounty* series, read a chapter from a book he was preparing on the Polynesian migrations. Under the spell of his magic, we visualized the big twin-hulled catamarans speeding by starlight into the oceanic unknown.

Our farewell party was given by Charles Allmon, a young photographer who had just completed a six-months camera survey.

Desperate for transportation, Allmon requested a ride to Honolulu. We were delighted to offer *Yankee's* spare bunk.

Americans, French, British, Polynesians, and a few Chinese made a gay, garlanded company at Allmon's table (page 39). Dozens of tall bamboo torches cast a flickering light, and a dreamy Tahiti orchestra played hula music under a pale moon and fleecy clouds.

Bashful Americans were pushed onto the dance floor and compelled to do the hula. Flower-decked Arthur, attending his first grown-up, stay-up-late party, was an exception; no one had to urge him. Shining with joy, he moved in with the hula girls and danced to his heart's content. During pauses he sat between a grass-skirted hula girl and a handsome guitar player.

Good boy! If he can only remember this pure pleasure all his life, who will have a Tahiti souvenir to compare?

Who indeed can fail to love Tahiti's beautiful setting—the outrigger canoes, bright lagoons, and mountain streams? Its attractive people, kind of heart, naturally charming, and full of little graces, combine the best qualities of France and Polynesia. We never saw them worry.

"I wish I were a quarter Tahitian," an American friend said earnestly.

Divers Explore Ahé's Coral Fairyland

Bound now for the Hawaiian Islands, we paused at palm-fringed Ahé atoll to enjoy the marvelous swimming.

Underwater sight-seeing in Ahé's lagoon was perfect. Fantastic coral formations looked like castles and gardens in a wonderland. A diver's face mask revealed all their beauty.

Crew members floating face down surveyed a panorama of colorful vegetable and animal life. To explore the coral grottoes, they dived deep and long.

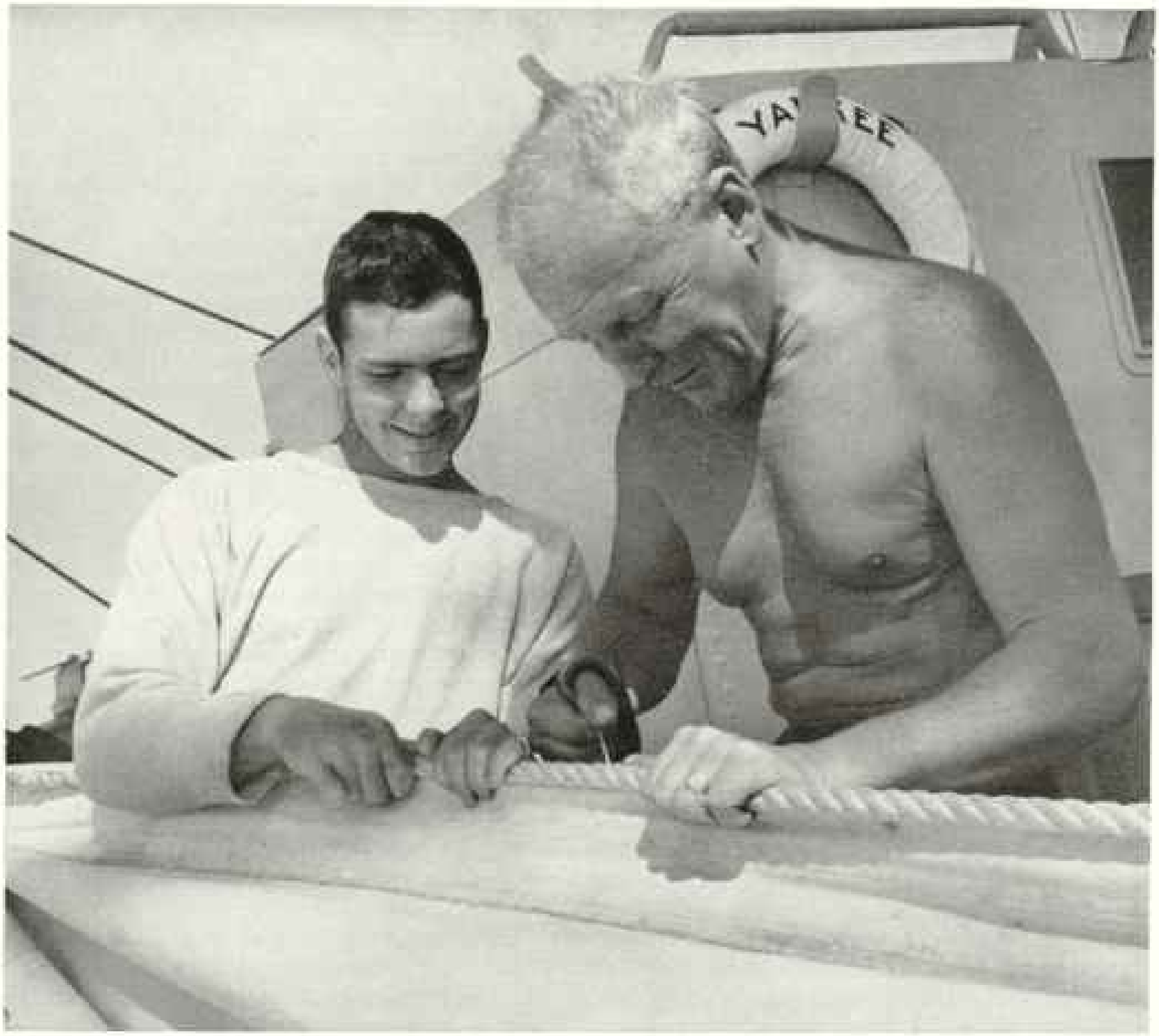
On the 2,600-mile run to Honolulu, squalls beset nearly every watch. Night and day we were in and out of oilskins, opening and closing skylights, dousing fisherman and jib top.

Tall masts traced wide arcs through the sky. To avoid falling out of our bunks when the ship rolled, we propped up the edges of mattresses.

By easing the mainsheet a bit, we learned that *Yankee* could take a moderate gale under full mainsail. Proving her North Sea pedigree, she gloried in the trial, driving through the seas at ten knots. On her best day she ran 200 miles; she averaged 160.

Frequently we wondered how the Polynesians had made this run in their 100-foot double canoes hundreds of years before Captain Cook discovered the Hawaiian Islands.

In Honolulu, Woody Brown gave us the answer. Brown, once a champion glider pilot,



Irving Johnson

Jack Braidwood, the Second Mate, Gives Hazard Campbell a Sewing Lesson

"Braid," a Canadian veteran of sail, plies the sailor's needle. With a leather-and-metal palm, employed like a housewife's thimble, he pushes waxed sail twine through the fisherman staysail and its bolt rope.

has constructed a 40-foot replica of the old catamarans.

Invited for a sail, *Yankee's* officers jumped at the chance.

We found both canoes decked over watertight, like submarines. Each was deep enough to permit us to stand nearly upright. Four below-deck bunks surprised us.

A flat section shaped like an airplane wing bridged the twin hulls. On it we lay stripped to swimming trunks. Brown hoisted the sail.

As we skimmed past Waikiki and Diamond Head, our host said, "This is nothing yet. Wait until we get out in the channel."

"If we go any faster, we'll take off," replied Steve Johnson, grabbing a lifeline.

Indeed, the catamaran at times did take off, leaping airborne from crest to crest. We figured her top speed at 25 knots.

Bigger and better catamarans still to come promise a bright future for an old-new sport.

Thrill-exhausted, like kids fresh off a roller coaster, we were glad we had *Yankee* and not an open catamaran for the remainder of our voyage.

Yankee Halfway Home

In Honolulu, half the globe separates us from Brixham.

In Singapore we are going to send Arthur back to the States for stiffer schooling. Robert, our younger son, will take his place on board.

Ahead of *Yankee* then lie the romantic ports of the Orient, the stormy Cape of Good Hope, and salty Gloucester.

We pinch ourselves to see if we are dreaming and ask: Can this be work?

Shrines of Each Patriot's Devotion

By Frederick G. Vosburgh

A STRONG wind blew over New York Harbor, and the Statue of Liberty was "waving her torch." As we climbed through her right arm, 40 feet long, it shook as if alive.

Thirteen 1,000-watt lamps that illuminate Liberty's torch, 300 feet above the bay, must be checked at regular intervals. I had been invited to come along on an inspection climb.

"We have to keep the arm closed to the public," said the superintendent of the Statue of Liberty National Monument as we stood panting in the giant torch of copper and glass. "Too many people 'freeze' with fright. You can't get them up or down the ladder.

"This shaking doesn't mean there's anything wrong. The arm has been swaying in the breeze ever since the statue was erected in 1886."

Suddenly this seemed symbolic—Liberty's uplifted arm buffeted by all the winds that blow, yet sustained by an inner strength of steel; constant vigilance necessary to keep the light of Freedom shining bright!

National Shrines Tell Nation's Story

Far below, some 900 persons swarmed through Liberty's copper form, gift to the United States from the people of freedom-loving France. By elevator and stairs they ascended to look out from the 25 windows that form the jewels of Liberty's seven-rayed crown (page 52).

In the pedestal many paused to read compassionate Liberty's words of hope to the Old World, words which have special meaning today as the first of 205,000 of Europe's homeless victims of World War II arrive in the United States under the Displaced Persons Act:

> Send these, the homeless, tempest-tost to me,
> I lift my lamp beside the golden door! *

During the war and postwar years more Americans than ever before have thronged through the Statue of Liberty and the scores of other national shrines that tell the story of the United States.

Partly this is because the population is larger by nearly 15 millions than it was before the war. Partly it is because the number of shrines under the efficient care of the National Park Service has increased. But also it reflects new appreciation of the meaning of the American heritage in these troubled times.

Perhaps the strongest single impression is that liberty did not come easily. It had to be won.

Typical are comments I saw scrawled in the registration book at the Morristown National Historical Park at Morristown, New Jersey, where General Washington made his headquarters during two winters of the Revolution.

"I have been again impressed with the wonders of the American heritage."

"Makes a lump come to your throat."

"For the sacrifices our forefathers made we must carry on."

"Good oh!" exclaimed an Australian flyer in the slang of his homeland.

A Scottish able seaman in the British Navy was particularly interested in the Cambridge flag, used early in the Revolution. It bore both the Union Jack of Britain and the stripes of America. "That's the way it should be now," he wrote.

Eloquent of the same spirit of patriotic appreciation are the thousands who have waited in line at every stop of the Freedom Train, the red-white-and-blue-painted streamliner that has been carrying through the land the American charters of liberty. But even at 10,000 a day it would take more than 40 years for every American to walk through the Freedom Train. While they waited millions would die and millions of others would be born.

No such limitation applies to the country's national shrines. So numerous and widely scattered are they that almost any American any day may visit one or more after only a few hours' drive.

Tears, Kisses, and Prayers

These shrines of each patriot's devotion arouse every conceivable human reaction.

Some want to kiss historic ground—and pick up "just a pebble or two" to take home as a souvenir!

At graves or shrines of beloved national leaders, a few cry, others pray, and a respectful hush prevails.

On the great battlefields or on the Oregon Trail, historians and serious students share the thoughts of Washington, Grant, and Lee, or of the westward-pushing pioneers—and they write better history for it.

But mostly the crowds are full of fun, a free people on holiday.

At the entrance of one old fort in the South a sign read, "Service Men Free."

"Oh," said a pert miss, "I'll take one!"

To another young woman old St. Augustine's hoary Spanish fort, the Castillo de San

* From *The New Colossus*, by Emma Lazarus, 1883.

AI Pellicano from International News

Smiling Faces Jewel Liberty's Crown in This Close-up from a Helicopter

From the head of the Statue of Liberty, 22 stories above New York Harbor, visitors get a magnificent view. Although not the lipstick type, Miss Liberty once got plenty of it—illicit initials! Defacement is now rare.

Wide World

Few Visitors to the Statue of Liberty See the Broken Shackles at Her Feet

Everyone knows that mighty Miss Liberty holds a torch, enlightening the world. But not many know what her left hand holds—the Declaration of Independence; or what lies at her feet—the broken chains of tyranny. Repainting the interior in 1947, to remove lipsticked and penciled initials, cost the Government $25,000 and forced closing of the statue for three months. Visitors brushing against the walls were acquiring ruddy smears, dubbed "lipstick shoulder." At night 120 floodlights illuminate the figure.

Marcos, will never be merely the oldest masonry fortification still standing in the United States, but the Place Where He Proposed.

Some visitors are moved to poetry. A guard at the Castillo found a sheet of paper bearing the beginning of a poem entitled "A Sailor's View of Heven."

> As alone I set on an old sea wall
> Listen to a . . .

And that's as far as the poet got.

"Even if the sailor couldn't spell heaven," said the guard, "he could listen to it."

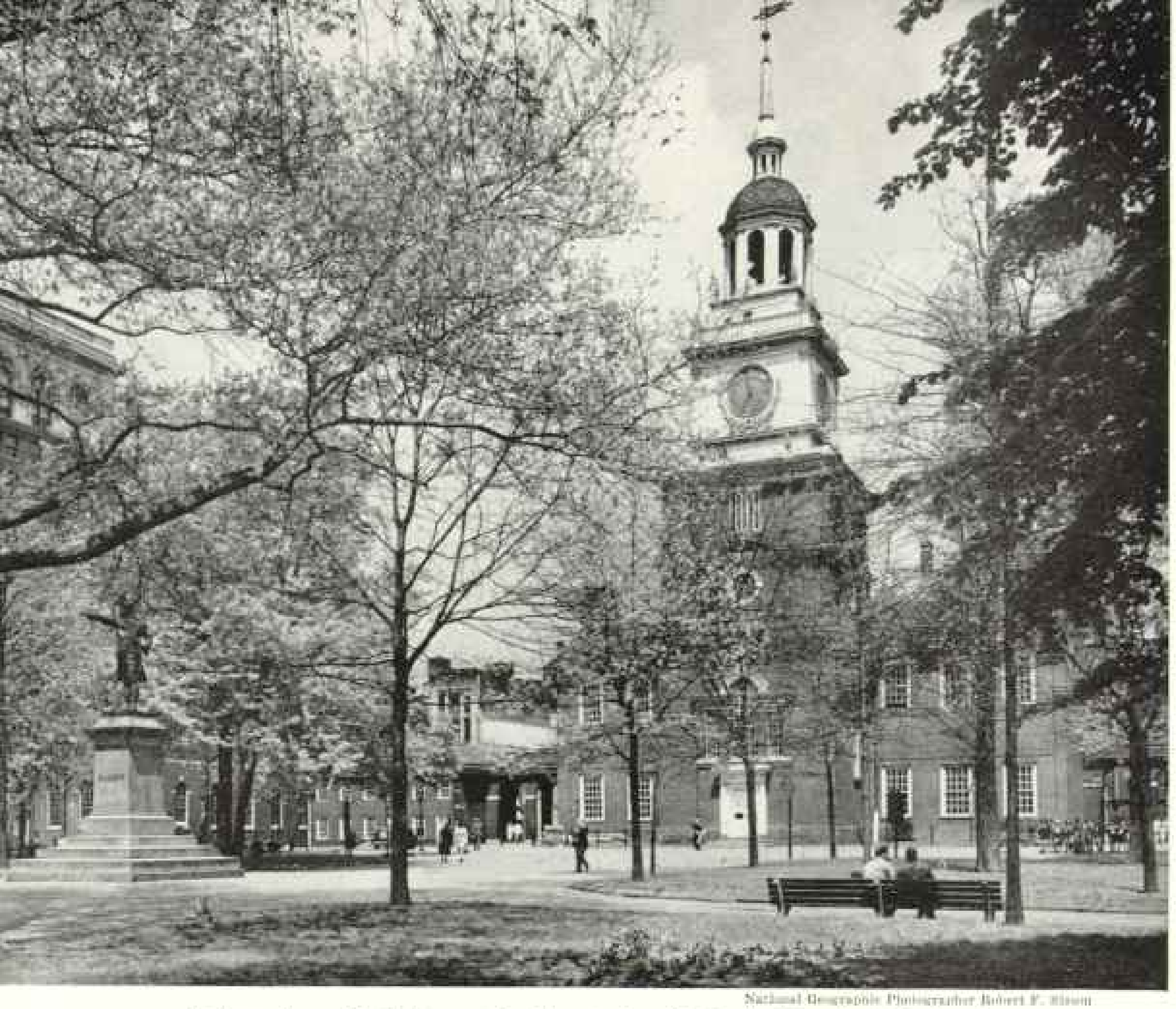
Historic Sites Saved from Engulfment

Such inspiring monuments dotting the land are preserved by and for the people through the National Park Service. Eternal vigilance is necessary lest the scenes of great events be forgotten and engulfed.

As long ago as 1816 the cradle of our country's government—Independence Hall, in Philadelphia—was marked for doom in the name of progress and profits. With its fellow buildings in Independence Square it was ordered up for sale for building lots.

Prompt action by aroused Philadelphians saved it. To this day the Independence Hall group of buildings is owned by the proud and watchful city. Millions of pilgrims there have gazed at the Liberty Bell and stood in the company of the immortals in the room where the Declaration of Independence was signed, George Washington accepted appointment as commander in chief, and the Stars and Stripes and the Constitution of the United States were adopted.

Through the efforts of the Independence Hall Association this cradle of the United States was finally declared a national historic



National Geographic Photographer Robert F. Sisson

Independence Hall Forms the Heart of a National Historical Park-to-be

Congress last summer enacted a law providing for establishment of Independence National Historical Park in the old section of Philadelphia and authorizing expenditure of $4,455,000 for historic buildings and sites in the vicinity of Independence Hall, birthplace of the Nation and home of the Liberty Bell. Pennsylvania and Philadelphia are contributing heavily to the project. Adjoining Independence Hall at left is Congress Hall, where Washington delivered his Farewell Address (page 69). The statue portrays Commodore John Barry, Irish-born Philadelphian who became one of the first heroes of the United States Navy.

site. Last summer an even more important step was taken: enactment of a Federal law authorizing establishment of Independence National Historical Park, embracing the scene of the Nation's birth and early days of struggle.

At the beginning of this century, danger of another sort threatened the site of old Jamestown, Virginia, where the first permanent English settlement in America was established in 1607. The James River was washing it away. Some 25 acres of Jamestown Island, a peninsula in 1607, had already disappeared.

Spurred by a group of private citizens, the Association for the Preservation of Virginia Antiquities, Uncle Sam came to the rescue, built a concrete sea wall to stay the runaway earth, and later acquired all of the island not owned by the Association.

When a site is already in responsible State or local hands, the National Park Service is more than content to let it so remain—Bunker Hill, for example, and the Alamo. Yet shrines under the Nation's protecting wing represent most of the main periods and events in the making of America. The first monuments I visited were left by the Spaniards.

Spaniards Brought Cross and Sword

Columbus never set foot in the continental United States. But Spaniards sailing in his wake soon came to States where winter sunshine tans vacationists today.

Just 50 years after the discovery of America Spanish sails reached California. In caravels assembled in Mexico, Juan Rodriguez de Cabrillo discovered Point Loma, at the entrance to San Diego Bay. Cabrillo National Monument there overlooks a blue, green, and golden scene of sea, islands, mountains, val-

National Geographic Photographer Willard R. Culver

Four Flags Have Waved Above St. Augustine's Hoary Castillo de San Marcos

Though the Spanish-built fort was never taken by storm, it knew a succession of masters as Florida passed from the red-and-gold flag of Spain to the Union Jack of Britain and finally the Stars and Stripes of the United States, with a brief period under the Confederate Stars and Bars. Massive walls are coquina, a rock composed of myriad tiny shells. Once the fort wore a gleaming white coat (see below).

leys, and plains set with the southernmost cities of the Golden State (page 57).

Three of the early Spanish missions are among the national shrines: Gran Quivira, in New Mexico; Tumacacori, in Arizona; and San José, in Texas. Over hot, weary miles from Mexico the missionaries to the Indians brought sheep, goats, cattle, horses, and seeds —but the most lasting seeds they sowed were those of the Christian religion (page 58).

On the sands south of St. Augustine, Florida, first permanent white settlement in the United States, Fort Matanzas National Monument recalls another side of Spanish colonial character, a strange contradiction of cross and cruelty, Bible and blood. *Matanzas* means slaughters.

Thereabouts, in 1565, the year St. Augustine was founded, Don Pedro Menéndez de Avilés and his men put to the sword nearly 300 French Huguenots who had settled on the St. Johns River.

The deed gave its name to this watchtower-blockhouse. "It looks like a big stone piano," a fellow visitor remarked.

At the northern gate of St. Augustine the Spaniards in 1672 began building a mighty bulwark against the British to the north. Piously named for St. Mark—Castillo de San Marcos—it guarded Florida and the offshore treasure route and served as a base for Spanish activities in the Southeast for generations.

The moated fortress, finished in 1756, has never been taken by storm—except by the crowds of peaceful pilgrims that daily swarm through this national monument. Gray with age, the fort is built of coquina, soft limestone made up of millions of minute sea shells. Colonial cannon balls had little effect on the yielding, unbrittle "shell rock."

"What do you think of the Castillo?" a ranger asked a young visitor recently.

"Aw, it would be all right," he said, "if it had a coat of paint."

National Geographic Photographer B. Anthony Stewart

From Moccasins to Bobby Socks: Pocahontas and Fellow Americans at Jamestown

On the historic Virginia soil where the first permanent English colony in the New World took root stands this statue of the Indian girl, Chief Powhatan's daughter, who befriended the colonists and married one of them. Beyond rises the Tercentenary Monument erected by the Government in 1907 to commemorate the landing at Jamestown 300 years before (pages 54 and 63).

"Under the Spanish it did have a coat," I was told by a National Park Service historian, himself a descendant of St. Augustine Spaniards.

"It was a hard, waterproofing, white lime plaster which must have reflected the Florida sunlight from battlements and towers with a dazzling brilliance worthy of the glory of imperial Spain."

Most alluring to visitors are the dungeons. The two innermost rooms were sealed by the Spanish and not discovered till 1833. In them were bones!

In rooms a little more livable than these black holes 19th-century Americans imprisoned troublesome Indians. Among them was Osceola, Seminole leader, who was captured under a flag of truce!

One room is lined with living green. Southern maidenhair fern grows on the moist stone walls.

Outside the fort sounds the clop-clop of hoofs. Sleepy-looking horses bearing such names as Happy, Peppy, and Uncle Sam draw antique canopied sight-seeing surreys driven by Negroes in stovepipe hats.

Psychological Warfare 200 Years Ago

Northward 125 miles by road I visited a crumbling remnant of the Castillo's old English antagonist, Fort Frederica, a national monument on Spanish-moss-bearded St. Simons Island near Brunswick, Georgia.

More than 200 years ago Gen. James Oglethorpe, founder of Georgia, built the fort as the southern bulwark of the English Colonies. He named it for Frederick, Prince of Wales, father of King George III.

Once, under Spanish attack, Oglethorpe used psychological warfare worthy of World War II. He let the enemy capture a letter instructing a deserter to tell the Spaniards

National Geographic Photographer Willard R. Culver

Cabrillo National Monument Honors the "Columbus of California"

First white man of the millions who have come to the Golden State was Juan Rodriguez de Cabrillo, who landed near this spot on Point Loma, San Diego Bay, 50 years after the first voyage of Columbus and claimed the fair land for Spain. His crude caravels were Mexico-built. Here a model of one sails against the breeze that extends the American flag. The old lighthouse overlooks an unforgettable scene (page 54).

a British fleet was about to attack St. Augustine. Too hastily the Spaniards marched on the fort and were ambushed and beaten in the Battle of Bloody Marsh.

But the epic story of English settlement begins much earlier and farther north, in haunting tragedy. On Roanoke Island, North Carolina, Fort Raleigh National Historic Site preserves the place where Sir Walter Raleigh's colonies of 1585-86 and 1587 were planted but could not survive.

Short of food and plagued by Indians, the first colonists went back to England with Sir Francis Drake when he called with his fleet in 1586 on the way home from the West Indies.

Later the same year Sir Richard Grenville left 15 men on the island to hold the colony for England. They were never heard of again!

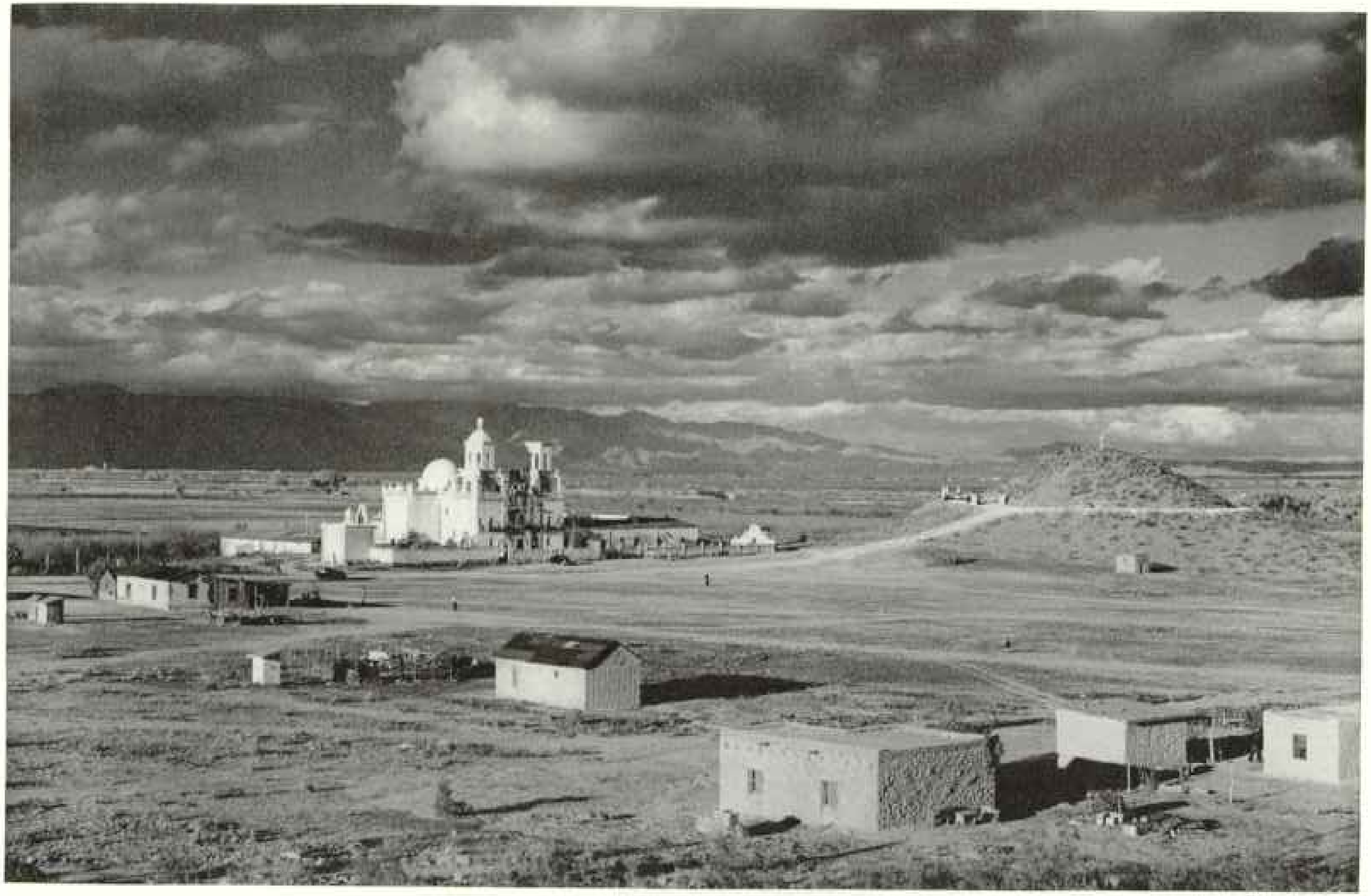
The next year Raleigh sent a second colony of 150 men, women, and children. About a month after the landing, Virginia Dare was born—first native American of English parentage.

But Spain's "Invincible Armada" was threatening invasion of England, and Queen Elizabeth would spare no sizable ship to carry the colony supplies. Two small pinnaces were sent but never arrived. Not until August, 1590, three years after the colonists landed, was Governor John White permitted to return with help.

359-year-old Mystery Story

First it had been too little, and now it was too late. The town was deserted. A high palisade like a fort surrounded the silent site. The houses had been dismantled.

Carved on a tree or post was one clue—the word CROATOAN with the "T" uncrossed, as if the carver had been interrupted. But no survivors were ever found, either on



Esther Henderson

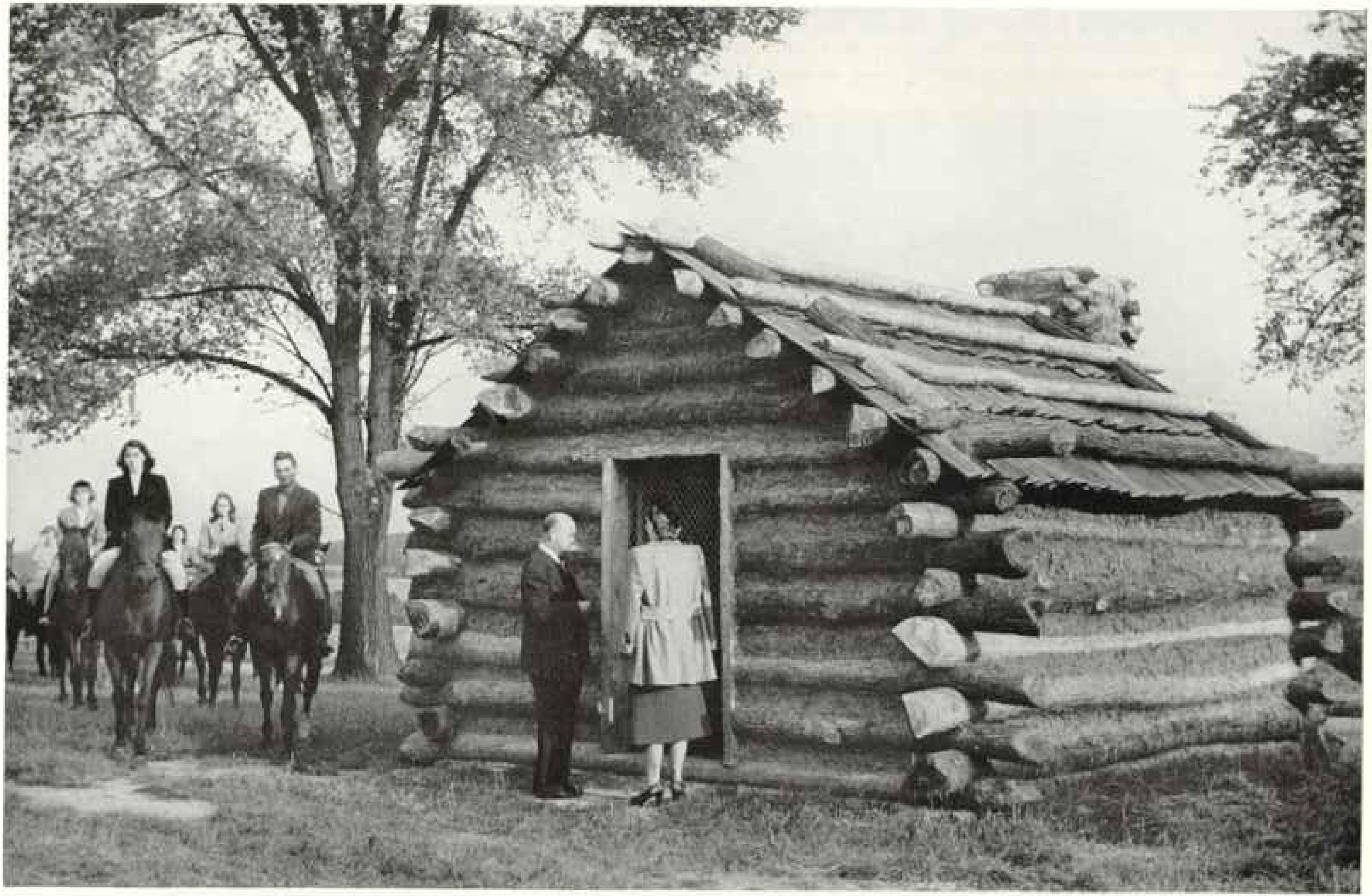
On the Vast Spaces of the Southwest, Spanish Priests Planted Missions and the Seeds of the Christian Faith

In the wake of a summer storm, sunset rays gleam from the white lime plaster walls of the Mission of San Xavier del Bac, near Tucson, Arizona. Papago Indian huts and garages cluster close, for the mission is now surrounded by the San Xavier Indian Reservation and is still in use. Completed in 1797, it replaced earlier missions.

National Geographic Photographer Willard R. Culver

Fraises—Pointed Stakes—Served as "Barbed-wire" Entanglements at Yorktown, Now Part of Colonial National Historical Park

Restored by the National Park Service, these are concrete simulating wood. "Must be hard on the woodpeckers," one visitor remarked. This strong point guarding the British flank on the York River was held by Royal Welch Fusiliers and is called the Fusiliers' Redoubt. With escape cut off by the French fleet, Lord Cornwallis was cooped up at Yorktown and forced to surrender when troops were moved swiftly from the Hudson to Virginia by alert General Washington.



National Geographic Photographer B. Anthony Stewart

To Build Such Huts at Valley Forge, Washington's Shivering Immortals Worked "Like a Family of Beavers"

"Some carried logs, some mud, and the rest plastered them together," wrote Thomas Paine, great essayist and fighter for freedom with his quill. "The whole was raised in a few days." Riders from the Shipley School for Girls at Bryn Mawr, Pennsylvania, pass a reproduction of a hut which sheltered twelve soldiers.

National Geographic Photographer John E. Fletcher

Life Was No Tea Party When General Washington Was Writing Orders at This Secretary in the Ford Mansion, Morristown, New Jersey

This room in the home of Col. Jacob Ford, Jr., served the Commander in Chief as living and dining room. On cold days his "family" huddled in the kitchen (page 71).

National Geographic Photographer Willard R. Culver

These Cannon and Cannon Balls Went Down with a British Ship off Yorktown 168 Years Ago

York River fishermen long found in their nets relics of ships sunk in the final battle of the Revolution. Divers for the Mariners' Museum, Newport News, Virginia, and Colonial National Historical Park located the wreckage in 1934–35, washed off the mud of a century and a half with a fire hose, under water, and salvaged the cannon. They are exhibited at Yorktown in a reproduction of part of the gun deck of the British frigate *Charon*.

National Geographic Photographer B. Anthony Stewart

At Valley Forge Visitors See Washington's Tent and Telescope

In the Historical Society's Museum is pitched the faded tan marquee, or office and sleeping tent, in which General Washington spent the first week in this bitter-cold encampment (page 70). The holes were made by time, not bullets. This lad can't see a thing through Washington's field telescope; the cover over its muzzle is still in place! The bust is a reproduction of French sculptor Jean Antoine Houdon's likeness of Washington, modeled during a long stay at Mount Vernon after the war.

Croatoan (now Ocracoke) Island or among the Croatoan Indians.*

By excavations during the last two years J. C. Harrington, Regional Archeologist of the National Park Service, has located the fort of the Lost Colony.

"In the old moat," he says, "we have found fragments of handmade brick and a large piece of strap iron, recalling Governor White's report that iron and other heavy objects were scattered over the site. About three feet underground we found a deep pit containing charcoal, used as an ingredient in gunpowder or as fuel for houses or a forge."

Digging for clues still goes on, and each summer at the site this 359-year-old mystery story is dramatically unfolded in Paul Green's open-air play, *The Lost Colony*.†

At Jamestown the Seeds Took Root

America—a land where people vanished! No wonder there were no women among the hardy souls who sailed from England early in 1607 for a new attempt. But two came with the second contingent the next year.

On low-lying malarial land beside the James River in Virginia the colonists founded a settlement likewise named for their king—Jamestown. This scene of the painful birth of Virginia is enshrined in Colonial National Historical Park and Jamestown National Historic Site.

"Where is Jamestown?" a visitor asked.

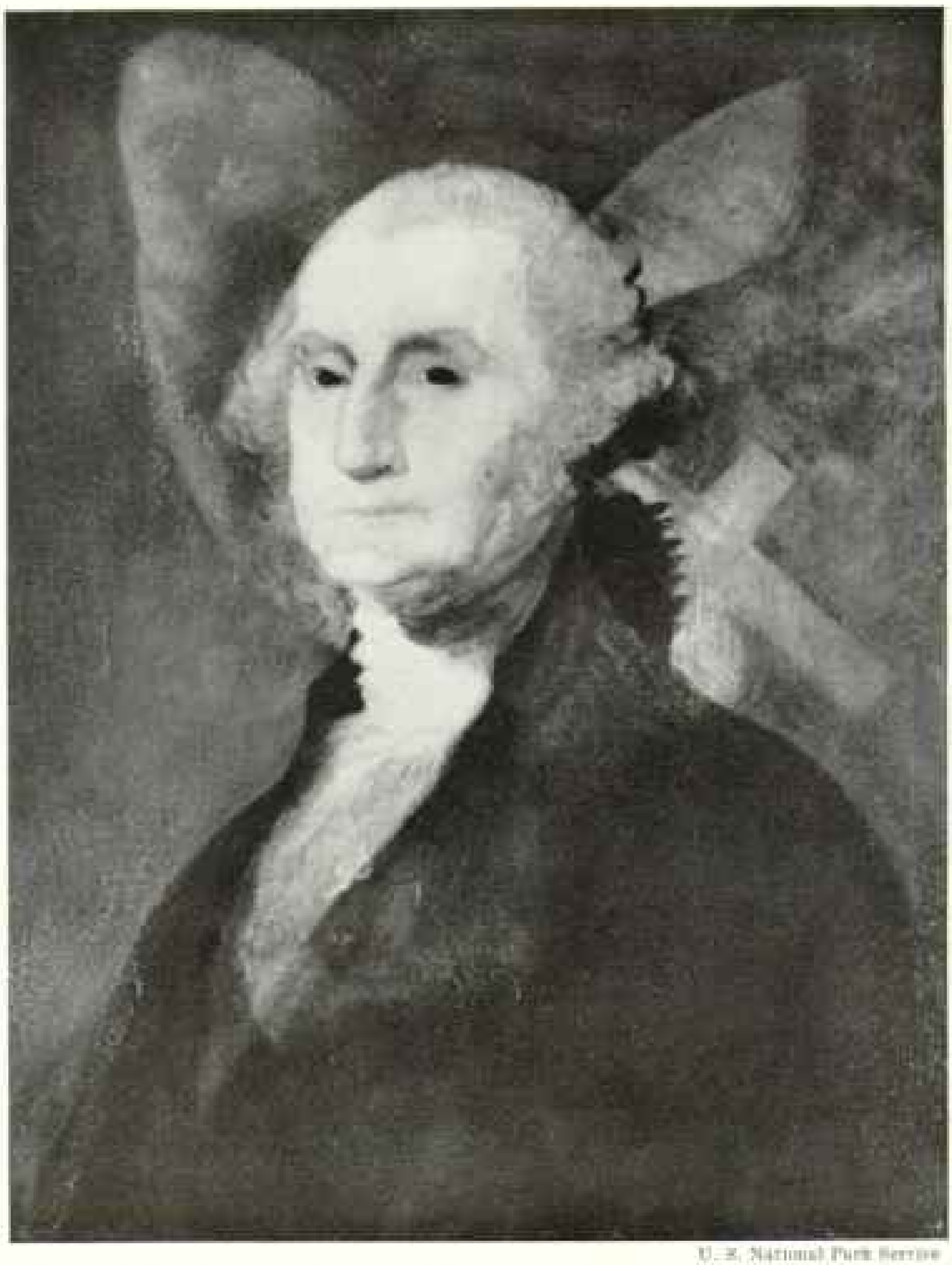
Replied a ranger: "You are standing in it."

Except for a remnant of the 300-year-old tower of America's first brick Anglican church, no wall of a 17th-century Jamestown building stands. But National Park Service excavations are uncovering house foundations, gin and wine bottles, pots, pipes, and bullets that link our time with the day of that fighting rover, Capt. John Smith.

Even the foundations of America's industrial greatness have come to light—furnaces for glassmaking, first industry in the English Colonies. "Drincking Glasse" was needed; also beads for the Indian trade. As early as

* See "Bit of Elizabethan England in America," by Blanch Nettleton Epler, NATIONAL GEOGRAPHIC MAGAZINE, December, 1933.

† See "Exploring America's Great Sand Barrier Reef," by Eugene R. Guild, and "Indian Life Before the Colonists Came," by Stuart E. Jones, both in the NATIONAL GEOGRAPHIC MAGAZINE for September, 1947.



U. S. National Park Service

Turn This Portrait Upside Down: A Woman's Face Appears!

With passage of time a lady's head, shoulders, and arms have become visible in the Gilbert Stuart painting of Washington which hangs in the museum of Morristown National Historical Park, New Jersey. This photograph, made with infrared light, brings out the underpainting more clearly. Apparently devout, the woman holds a large cross; her eyes peer, ghostlike, from the General's chest. Recent finding of "Mrs. King" on the canvas suggests that she may be the wife of Rufus King (1755–1827), New England politician and diplomat. No one knows why the artist painted out the lady. Perhaps he was dissatisfied and felt a good English canvas was too precious to waste!

1608 Jamestown was manufacturing glass.*

Labor-management troubles, too, came early. "A more damned crew hell never vomited," wrote George Sandys, colonial treasurer, concerning the employees of 1622-23. One Italian, he complained, wrecked the furnace with a crowbar.

Nine-tenths of the colonists died in the "starving time" of 1609-10. Even when the settlement was 15 years old, it narrowly escaped becoming another "lost colony." Indians wiped out nearly 400 of Virginia's 1,240 inhabitants, but Jamestown escaped the massacre through a warning by Chanco, Christian Indian boy.

Here in April 1614 occurred the "melting pot" marriage of Pocahontas, Chief Powhatan's daughter (page 56), and John Rolfe, who had boomed the colony by finding a way of curing Virginia tobacco. Among their many American descendants is Mrs. Edith Bolling Galt Wilson, who was married to President Woodrow Wilson in 1915.

A shipload of women came to Jamestown in 1619. But more important than mass matrimony were two other events of that year. One was the arrival of the first Negro slaves in English-speaking America, bringing a problem which later would shake the foundations of a nation. The other was the first meeting of the Virginia House of Burgesses in the Jamestown church. Representative government on this continent was born—unless, indeed, some Indian tribes enjoyed it long before.

In 1676, a hundred years before the Declaration of Independence, Americans' love of liberty flared into revolt against a royal governor. Bacon's Rebellion failed, but it showed that sons of this new land would fight and die for freedom. Burned down by Nathaniel Bacon's men, Jamestown never recovered. A few years later the seat of government was moved to Williamsburg.†

* See "Glass 'Goes to Town'," by J. R. Hildebrand, NATIONAL GEOGRAPHIC MAGAZINE, January, 1943; and "Founders of Virginia," by Sir Evelyn Wrench, April, 1948.

† See "Restoration of Colonial Williamsburg," by W. A. R. Goodwin, NATIONAL GEOGRAPHIC MAGAZINE, April, 1937.

An epoch was ended. But America was on the march. After the founding of Jamestown and Plymouth, Massachusetts,* other beachheads were won by the English, Dutch, and French.

How French fur traders and priests bored inland from Canada is shown by Father Millet Cross National Monument, in western New York, where pious Pierre Millet raised a cross in 1688, and by Verendrye National Monument, on the Missouri River, to the 1738-42 explorers of North Dakota.

Swedish settlers in 1700 built Philadelphia's oldest church, Gloria Dei, or "Old Swedes'," a national historic site.

Storm Gave Us George Washington

Forty-nine years after the landing at Jamestown, an English ship, *Sea Horse of London*, was sailing down the Potomac River with a cargo of tobacco when she ran aground; a sudden storm completed her destruction. Her second officer was John Washington, who already had been considering settling down in the New World.

The shipwrecked sailor fell in love with Anna Pope, daughter of a wealthy planter, and married her two years later. Her father gave them 700 acres of land, and the sea knew John no more. Eventually he became a member of the Virginia House of Burgesses.

But for that providential storm, America might not have had George Washington, for John was his great-grandfather.

Upon the long-buried ashes of George Washington's birthplace, accidentally burned during the Revolution, public-spirited citizens of the Wakefield National Memorial Association have built a memorial mansion in early 18th-century colonial style. The neat new bricks were handmade from clay dug in an adjoining field.

This house and the grounds of Wakefield plantation form George Washington Birthplace National Monument, on the broad tidewater Potomac about 60 river miles below Mount Vernon. Born at Wakefield in 1732, the future first President lived there until he was a three-year-old toddler.

Overlooking the Potomac and Popes Creek, this simply but beautifully landscaped site where Washington learned to walk and talk is full of inspiration.

"This," said one visitor, "is the third time in my life I've had a spiritual feeling—among the olive trees on the Mount of Olives, among the sequoias in California, and among the cedars here at Wakefield."

"One of the busiest men in Washington," the superintendent told me, "has come here for seven Sundays straight, to sit on Burnt House Point and just relax."

At "Popes Creek," as General Washington called Wakefield, digging has revealed thousands of relics, including iron keys, pothooks, stirrups, a pistol barrel, bits of sword blade, buckles, thimbles, clay pipes, and chamber pots (one baby blue). Glass "bottle buttons" to show ownership of wine are numerous; several bear the monogram of the General's father, Augustine.

Behind the birthplace is a reconstructed cookhouse. Said a student of colonial times: "Building the kitchen away from the main house was partly fire insurance. The people in the 'big house' used to figure the servants would burn down the kitchen about once every three years."

In the family burial grounds lie several of George Washington's ancestors, including the seagoing John. But the General rests at his loved Mount Vernon (page 67). Though not officially a national monument, that shrine is reached from Washington by the Government's Mount Vernon Memorial Highway.†

Washington Lost His First Battle

Young George grew up in an atmosphere enlivened by back-country clashes with the French. Both sides wooed the Indians. Ackia Battleground National Monument in Mississippi recalls how British troops and Chickasaws beat off attacking Frenchmen and their Choctaw allies when the future President was a boy of four in Virginia.

As a 22-year-old lieutenant colonel, Washington commanded colonial forces in the first battle of the French and Indian War. The scene was a fort he built in a swamp, now Fort Necessity National Battlefield Site on busy U. S. Route 40, 10 miles southeast of Uniontown, Pennsylvania—and Washington didn't win.

After nine hours of fighting, young Washington surrendered; but the terms permitted him and his colonials to march away with the honors of war. George had to sign a humiliating paper binding Virginia to build no more forts hereabouts for a year.

This was hardly a good beginning for a military career. But the youthful George was learning; in those days there was no West Point! And eventually the French were beaten in this fight for a continent.

* See "Land of the Pilgrims' Pride," by George W. Long, NATIONAL GEOGRAPHIC MAGAZINE, August, 1947.

† See, in the NATIONAL GEOGRAPHIC MAGAZINE, "Home of the First Farmer of America," by Worth E. Shoults, May, 1928; and "Travels of George Washington," by William Joseph Showalter, January, 1932.

When the Colonies finally broke with Britain, the Continental Congress in 1775 unanimously chose 43-year-old Washington as commander in chief of its motley, ill-equipped army.

How Freedom of Press Was Won

All the battles which led to freedom were not fought with arms. When George Washington was only three years old, the libel trial and acquittal of John Peter Zenger established the American right to print the critical, unflattering truth about the authorities.

Zenger, a German-born newspaperman, covered the election of 1733 on the village green at St. Paul's Church in Eastchester, colony of New York (page 69). He reported irregularities committed by henchmen of Royal Governor William Cosby, including denial of the right of 38 Quakers to vote because, in accordance with their religion, they chose to "affirm" rather than "swear."

When his employer refused to print the story, Zenger started a newspaper, the *New-York Weekly Journal*, and published the disclosure himself, following it up with many another blast against the governor. The royal target ordered copies of the paper burned by the "public whipper" and clapped Zenger into jail on a charge of seditious libel against the Crown.

For nine months, missing only one issue, Zenger edited his paper from the New York "gaol" by giving instructions to his wife and servants through a hole in the cell door. But the governor disbarred Zenger's attorneys, packed the bench with his own henchmen, and, when the prisoner came to trial in August, 1735, he and freedom both seemed doomed.

Then a stir ran through the courtroom as a white-haired old man appeared. Andrew Hamilton, speaker of the Pennsylvania Assembly and one of the ablest lawyers in the Colonies, had been secretly engaged by Zenger's supporters.

Still confident, the prosecutor informed the jury that its job was merely to decide whether Zenger printed the charges and not to judge their truth or falsity. Criticism of the government was libel even if true.

Swiftly and suavely, Hamilton thrust the knife of reason into this gross injustice. The indictment, he pointed out, charged certain *false* libels. He was prepared to prove them true. Prosecutor and court threatened as Hamilton called the contention that the truth is a libel "a Sword in the Hands of a wicked King and an arrant Coward, to cut down and destroy the innocent."

The bench sternly denied Hamilton the right to prove the truth of Zenger's charges; whereupon the attorney turned to the jury and observed that the suppressing of evidence should be considered the strongest of evidence. Prophetically he said in his summation:

"The Question before the Court and you, Gentlemen of the Jury, is not of small nor private Concern. It is not the Cause of a poor Printer, nor of New York alone. No! It may in its Consequence affect every Freeman that lives under a British Government on the main of America.

"It is the best Cause. It is the Cause of Liberty; and I make no Doubt but your upright Conduct, this Day, will not only entitle you to the Love and Esteem of your Fellow-Citizens; but every Man who prefers Freedom to a Life of Slavery will bless and honour You, as Men who have baffled the Attempt of Tyranny; and by an impartial and uncorrupt Verdict, have laid a noble Foundation for securing to ourselves, our Posterity, and our Neighbours, That to which Nature and the Laws of our Country have given us a Right—the Liberty both of exposing and opposing arbitrary Power (in these Parts of the World, at least) by speaking and writing Truth."

Though their necks were in danger, the jurors were out only about ten minutes. Then, with a firm "Not guilty" these twelve obscure but heroic Americans gave their posterity the precious right of freedom of speech and press—a right subsequently guaranteed in Article I of the Constitution's Bill of Rights. Fair-minded Britons, too, saw the light, and 57 years after the trial the principle for which Hamilton fought became a part of English law.

A Shrine of the Bill of Rights

St. Paul's Church, overlooking the spot where all this began, recalls an early struggle for another precious right. A tablet on the wall tells the story of English-born Anne Hutchinson, pioneer fighter for freedom of religion, who was killed on her farm here by Indians 306 years ago, after Puritans drove her from Massachusetts for her religious beliefs.

As a shrine of the Bill of Rights, old ivy-covered St. Paul's Church was declared a national historic site in 1943. Begun before the Revolution, it replaced the little wooden meetinghouse of Zenger's day. Now surrounded by the city of Mount Vernon, it forms an 18th-century island in the midst of modern industry.

To the same Andrew Hamilton who defended Zenger the Nation owes Independence

National Geographic Photographer B. Anthony Stewart

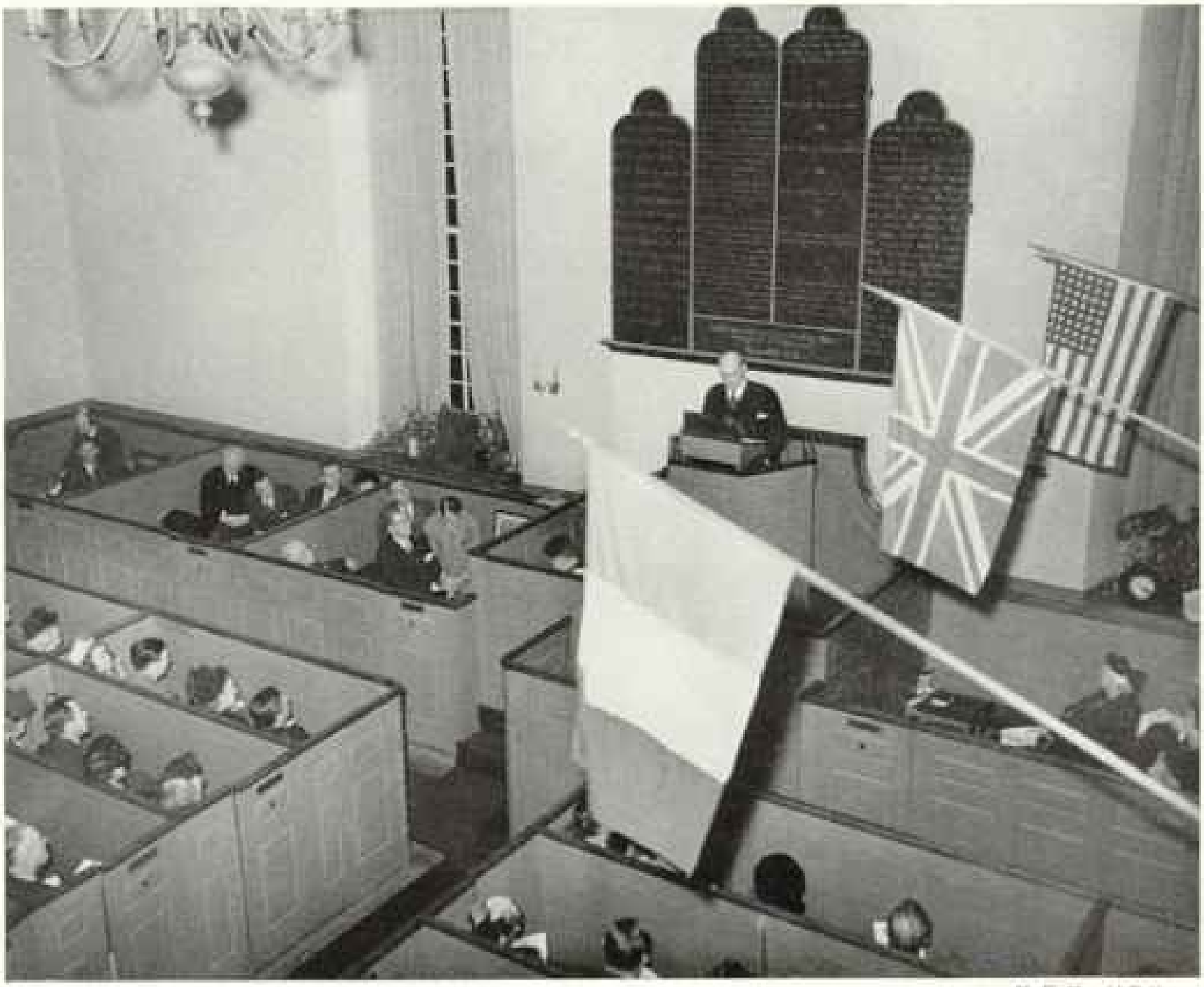
Gay Sight-seers Uncover, Look Serious, in the Presence of Washington

Their country's father and first President lies in this marble tomb at Mount Vernon, beneath a sculptured eagle, shield, and flag. In another tomb rests Martha, his wife. The brick vault was prescribed in Washington's will.

National Geographic Photographer Robert F. Sisson

Into "the Cradle That Rocked Two Presidents" a Descendant Tucks Her Doll

A modern daughter of the Adams family plays with the heirloom used by five generations of her forebears, including the Nation's second and sixth Presidents, John and John Quincy Adams. This is the bedroom of Abigail Adams, wife of one President and mother of another, in the Adams Mansion, Quincy, Massachusetts (page 71).



N. Y. Herald Tribune

Editors Honor Freedom of the Press at a National Shrine of the Bill of Rights

St. Paul's Church, Eastchester, now surrounded by the city of Mount Vernon, New York, overlooks the old village green where John Peter Zenger, German immigrant newspaperman, uncovered an election scandal 216 years ago. His trial and dramatic acquittal established the American right "of exposing and opposing arbitrary Power . . . by speaking and writing Truth" (page 66). Here Wilbur Forrest, Assistant Editor of the *New York Herald Tribune*, speaks at an annual ceremony dedicated to freedom of the press.

Hall. He chose the site and main design of the fine old Philadelphia building, birthplace of the United States and one of the Nation's greatest shrines (page 54).

In the Declaration Chamber, where the patriots of 1776 signed the document that might have been their death warrant, I saw the chairs and silver inkstand used on that first Independence Day.

Next door stands Congress Hall, for 10 years the Capitol of the United States. There Washington was inaugurated for his second term and later delivered his Farewell Address.

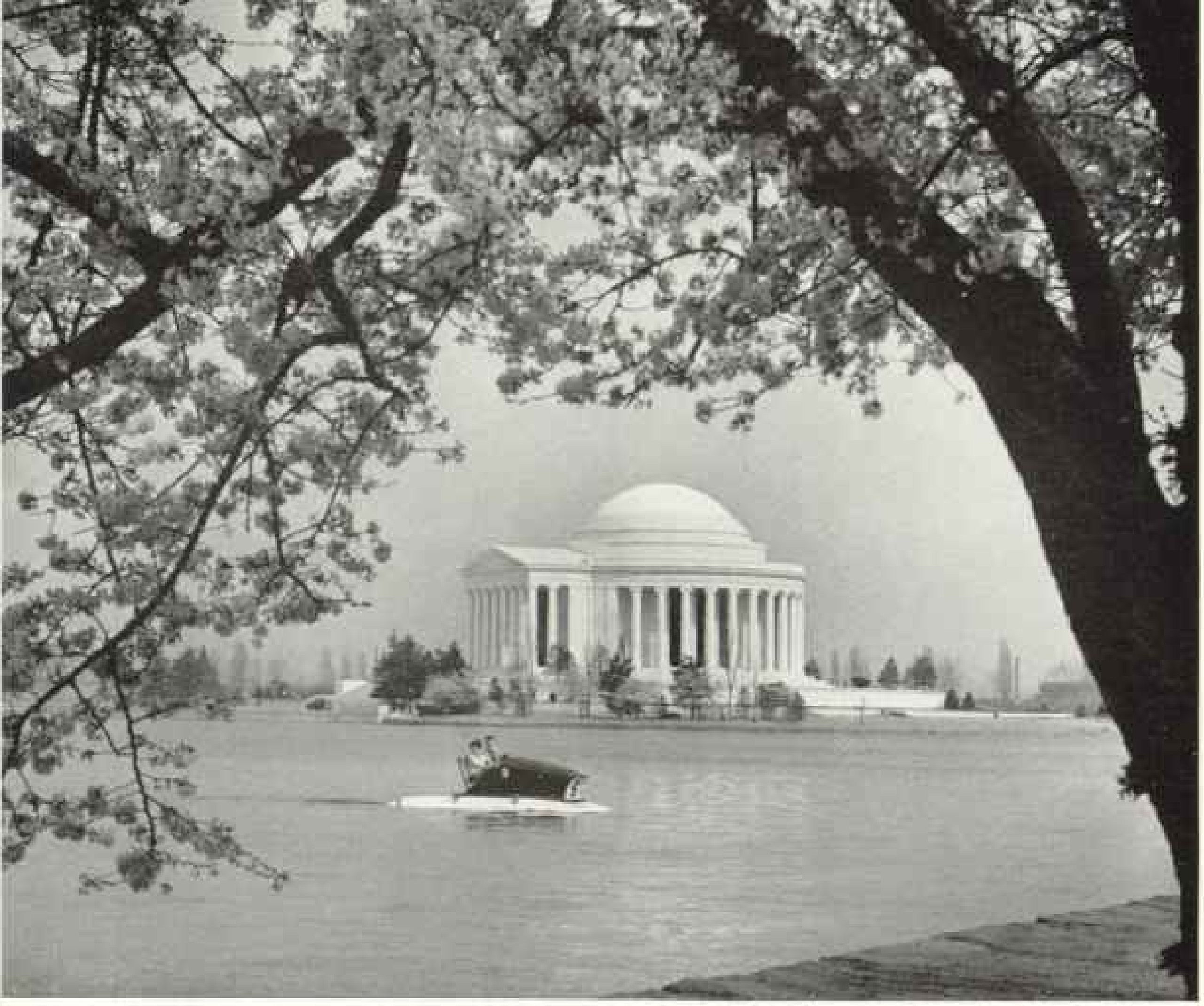
Near by, Philadelphia's master carpenters still meet in Carpenters' Hall, where the First Continental Congress convened in 1774. It met with a prayer for mercy "upon these American States who have fled to Thee from the rod of the oppressor, and thrown themselves upon Thy gracious protection, desiring to be henceforth dependent only upon Thee."

How badly the Colonies needed heavenly help is brought home to the visitor at Valley Forge, or at Washington's early 1777 and 1779-80 headquarters at Morristown, New Jersey.

Darkest Hour at Valley Forge

At Valley Forge Park, Pennsylvania, sacred symbol of the suffering endured for freedom, more than 50,000 dogwood trees each May spread pink and white tribute over the scene where Washington's men left bloody footprints in the snow. This Pennsylvania State park is one of the few sites of great historical importance not under national control.

Thousands of patriotic pilgrims at every season of the year come to this quiet, verdant valley where natural beauty contrasts so strikingly with the travail there endured.



National Geographic Photographer B. Anthony Stewart

Thomas Jefferson Memorial Looks Out upon "Pursuit of Happiness" by Pedal Boat

Cherry blossoms of the Nation's Capital turn the Tidal Basin into a pink-and-white heaven where beauty lovers and just plain lovers form a living incarnation of Jefferson's phrase, "life, liberty, and the pursuit of happiness." Passionate love of freedom rings from his marble shrine: "I have sworn upon the altar of God eternal hostility against every form of tyranny over the mind of man."

"Naked and starving as they are," wrote Washington, "we cannot sufficiently admire the incomparable patience and fidelity of the soldiery."

His quill has vividly pictured them: "Men without Cloathes to cover their nakedness, without Blankets to lay on, without Shoes, by which their Marches might be traced by the Blood from their feet, and almost as often without Provisions as with; Marching through the frost and Snow, and at Christmas taking up their Winter Quarters within a day's March of the enemy, without a House or a Hutt to cover them till they could be built. . . ."

In that bitter cold winter of 1777-78, some 3,000 of 11,089 men died of cold, privation, and disease in this encampment 20 miles northwest of the well-fed enemy troops occupying Philadelphia, the capital, in temporary triumph.

Despite all this suffering and death, the Continentals were steeled by daily drills on the Grand Parade under Baron Frederick William von Steuben, first Inspector General of the United States Army. As springtime brightened the valley and brought the great news that France was now an ally, a fighting Continental Army went forth from Valley Forge to win the Battle of Monmouth and struggle on to ultimate victory at Yorktown (pages 59 and 62).

At Valley Forge today the chief attractions are General Washington's headquarters and the reproductions of soldiers' huts, 31 of which are scattered throughout the park (page 60). Many make it a point to visit these in winter when they recall most vividly the sacrifice and suffering of American soldiery for which Valley Forge is famed. Washington's actual tent is pitched in the museum of the Valley Forge Historical Society, not a part of the park (page 63).

Valley Forge visitors also may see one of

the Commander in Chief's own flags; remains of the old forge, or iron mill, which gave the valley its name; copies of maps of the camp, one made by an enemy spy; fortifications, field ovens, and hundreds of relics unearthed from this historic ground.

Musket Ball as Anesthetic

At Morristown National Historical Park, what impressed me most was a chewed musket ball found in Jockey Hollow where Washington's troops camped, shivered, and suffered. This tooth-marked leaden ball was an "anesthetic." The surgeon gave it to a soldier to bite as he sawed off a frozen foot or a shattered arm.

Instead of chimneys, the log-cabin field hospital, now reconstructed, had smoke holes like those of Indian huts so that smoke from heating fires might circulate through the rooms. Smoke was believed to reduce the spread of disease.

Not even the "brass" was very comfortable in the cold winter of 1779-80. Wrote Washington to Gen. Nathanael Greene:

"Eighteen belonging to my [official] family and all Mrs. Ford's are crowded together in her Kitchen and scarce one of them able to speak for the colds they have caught."

When NATIONAL GEOGRAPHIC photographer John E. Fletcher asked Morristown high-school girls to dress in colonial costume as models at Washington's Ford Mansion headquarters, we saw how American womanhood has grown. Robust uncorseted waists threatened to burst the old fabrics, and the girls couldn't get the shoes on! (page 61).

In the park's museum hangs a Gilbert Stuart painting of Washington in which a strange "double exposure" effect has become apparent with time. In the background appears the portrait of a woman, upside down. To paint the General the artist used a second-hand canvas (page 64).

"To Bigotry No Sanction"

Where the U. S. Subtreasury in New York looks down at busy Wall Street, Federal Hall Memorial marks the site of the building where in 1789 Washington was inaugurated as first President under the Constitution after years of post-Revolution effort "to form a more perfect union."

Early in his first term President Washington penned a letter eloquent of the country's long-standing, deep-rooted respect for freedom of religion. To the Hebrew congregation of Touro Synagogue, dedicated in 1763 at Newport, Rhode Island, he wrote in part:

"It is now no more that toleration is spoken of, as if it was by the indulgence of one class of people, that another enjoyed the exercise of their inherent natural rights. For happily the Government of the United States, which gives to bigotry no sanction, to persecution no assistance, requires only that they who live under its protection, should demean themselves as good citizens, in giving it on all occasions their effectual support."

Enlarged, this letter is displayed today in the classic pillared interior of Touro Synagogue, a national historic site.

Among the newest national historic sites is the old Quincy, Massachusetts, home of big-browed, courageous John Adams, second President, and his vigorous, able statesman son, John Quincy Adams, sixth President, as well as later distinguished members of this remarkable family.

Still ticking away on the stairs is John Adams's grandfather clock.

In an upstairs room I noted an old cradle (page 68).

"That," said the caretaker, "rocked the two Presidents and was used in all by five generations of the Adams family."

It was made, strangely enough, by the village undertaker, who thus presided over both ends of his customers' earthly existence!

Salty Salem's Old Wharf Restored

Part of the water front of Salem, Massachusetts, is a monument to the days of sail when bold little vessels, smelling of fish, molasses, and rum, of coffee, tea, and spice of the East, scudded home to young and salty Salem.

Crowned by a huge eagle with spread wings, the Custom House, built in 1819, dominates Salem Maritime National Historic Site. Among its exhibits are the high desk, quills, and short cane used by Nathaniel Hawthorne, a native of Salem, when the great little writer served as surveyor of the port a hundred years ago.

"Some people," said a National Park Service man, "look at this desk and cry."

But they need not weep for wasted years, for here in a cobwebbed room Hawthorne found an old manuscript and a moth-eaten red cloth letter—A for Adulterer. These soon had him pacing the Custom House floor in the first birth pangs of his greatest novel, *The Scarlet Letter*.

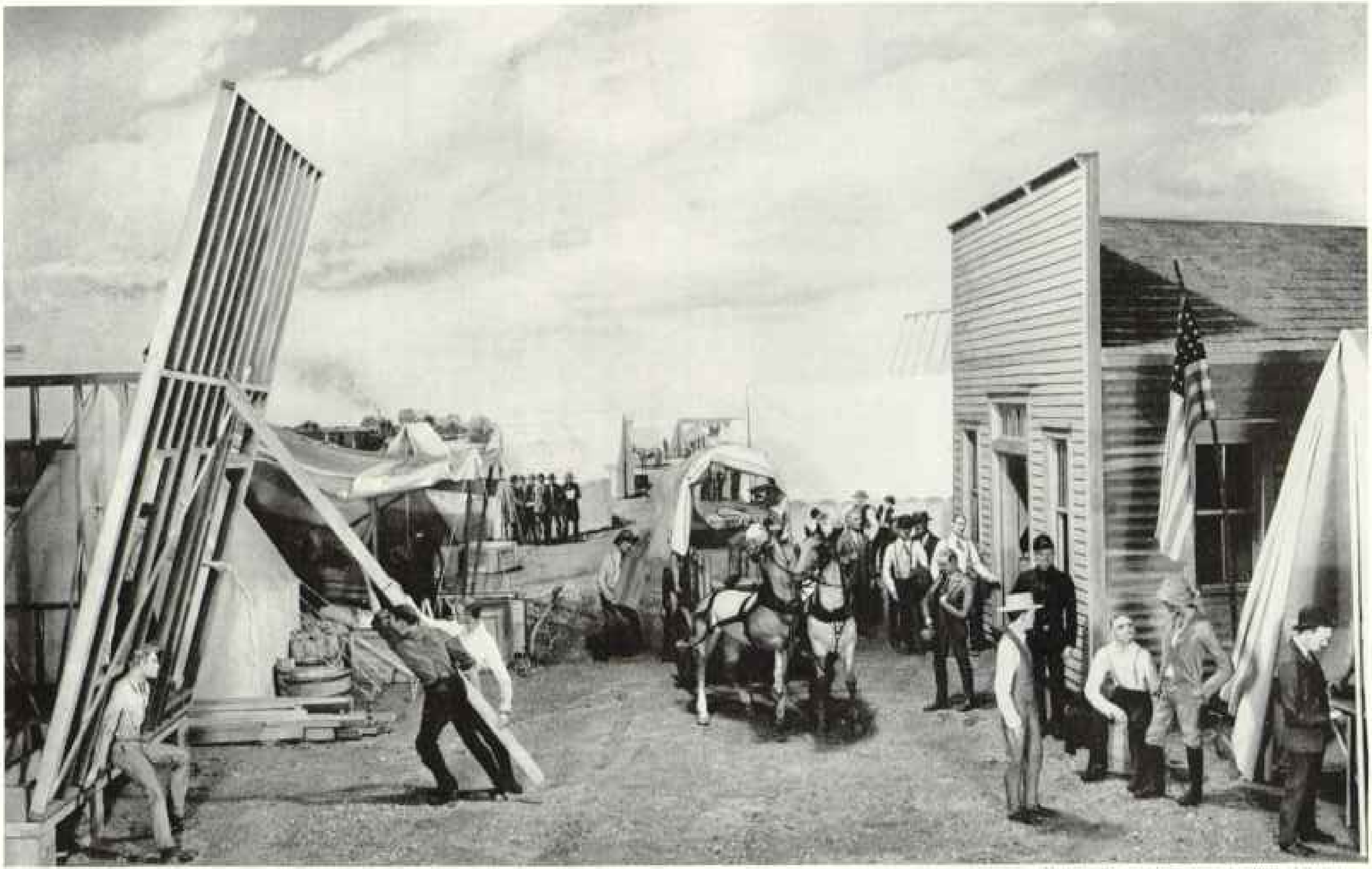
Surveyor Hawthorne had little to do, for Salem's maritime greatness waned a century ago when clippers, too big for this shallow port, drove the smaller boats out of business.

The way the vanished shipowners lived is seen in the 187-year-old Derby House, with

A. Aubrey Bodine from The Baltimore Sun

"And the Rocket's Red Glare, the Bomb Bursting in Air, Gave Proof Thro' the Night that Our Flag Was Still There"

Fireworks shed a lurid light over Baltimore Harbor in a re-enactment of the 1814 bombardment of Fort McHenry, which inspired "The Star-Spangled Banner." Here the flag flies night and day (page 74). This mock attack was part of the celebration of the 300th anniversary of the establishment of Maryland in 1634.



National Geographic Photographer Willard R. Culver

With Early "Prefabs," Pioneers Solve a Housing Problem in the Wild Dash for Free Land in Oklahoma

This diorama in the Jefferson National Expansion Memorial, St. Louis, Missouri, shows how Guthrie, Oklahoma, sprang up overnight when the region was thrown open to settlement at noon on April 22, 1889. That morning the "false front" land office stood alone; next day it was surrounded by a tent-and-shack city of thousands.

National Geographic Photographer Robert F. Sisson

"Yes, I'll Be Yours," Says the Mirror, Reflecting a Custom of Lovers Long Ago

Among the quaint and curious contents of the Derby House, at Salem Maritime National Historic Site, Massachusetts, is this old New England courting mirror which a suitor too bashful for words presented to his ladylove. If she smiled he was accepted, but if she turned it face down the boy was turned down too.

its models of Derby-owned ships, its bedroom wallpaper patterned after Chinese tea boxes, its heirlooms and treasures from distant lands.

Uncle Sam has rebuilt the old Derby Wharf, jutting a third of a mile into Salem Harbor, where sailing ships landed rich cargoes from Bombay, Canton, or Zanzibar, and rakish privateers set sail in the Revolution and War of 1812.

Flag "Still There," Day and Night

A nest of privateers such as Salem was Baltimore, Maryland; and to that circumstance the country owes its national anthem.

A prime objective of the British force which sailed up Chesapeake Bay in the War of 1812 was to strike at the Baltimore breeding ground of blockade runners and commerce raiders. But Fort McHenry stood in its path, with flag and courage high.

All the pride and thanksgiving of a patriot heart poured forth from poet-lawyer Francis Scott Key in the soaring words of "The Star-Spangled Banner" as he saw that after all-night attack the flag of his country "was still there."

It's *still* there. By Presidential proclamation dated July 2, 1948, Old Glory flies night and day above Fort McHenry National Monument and Historic Shrine (page 72).

"We use about a flag a week," the custodian told me. "I've known a flag to wear out in a day if we have a storm—cracks like a whip at the top of that 100-foot pole."

White floodlights instead of "the rocket's red glare" and "bomb bursting in air" now light the flag by night. Today's flag is much smaller than the one that Key, detained on a small ship by the British, watched "so gallantly streaming"—8 feet 11 inches by 17 feet, compared with the 42-by-30-foot flag of 1814 with its 15 stripes and 15 stars.

The fort's attackers used rockets as weapons and also to light the shores for their unsuccessful landing attempt. More lethal were the mortar-fired bombs, fused for "air burst" over the fort. One that landed intact is on exhibition—a 186-pound iron ball a foot in diameter with a deep cavity which was filled with gunpowder. Tradition says an alert defender pulled out the sputtering fuse.

Strangely, America's greatest naval monument is 500 miles from the sea. A huge granite column, floodlighted by night, it stands on South Bass Island, Ohio, overlooking Put in Bay, in Lake Erie, where in 1813 Com-

National Geographic Photographer Robert F. Sisson

On the Battlefield of Saratoga, New York, Stands a Monument to a Wounded Leg

It's the left boot of Benedict Arnold, carved in stone to symbolize the wound he received in this turning-point battle of the Revolution. He was a hero here, though later a traitor. The strange monument includes the epaulets of his rank, major general, but not his name.

modore Oliver Hazard Perry won the victory which he tersely reported, "We have met the enemy and they are ours."

Peace Between English-speaking Peoples

But this is more than a monument to victory. Upon it is inscribed the brief and simple Rush-Bagot Agreement of 1818 in which the United States and Canada pledged disarmament on the Great Lakes. This 352-foot shaft in Perry's Victory and International Peace Memorial National Monument symbolizes more than a century and a quarter of peace along a 4,000-mile unfortified frontier. Bright as the friendship of brother nations, it shines as a beacon for navigators.

Chalmette National Historical Park preserves the battlefield near New Orleans where in 1815 British and American troops fought each other for the last time. Victorious Gen. Andrew Jackson later became the first President from "the West." Tennessee was "out west" then!

Population of the young United States was doubling every 25 years, and a swelling flood of pioneers pushed west toward the Nation's "manifest destiny"—dominion from sea to sea. This epic of America is unfolded in St. Louis at Jefferson National Expansion Memorial. Thomas Jefferson had pointed the way to the setting sun by swinging America's biggest real-estate deal, the Louisiana Purchase, and by sending Meriwether Lewis and William Clark exploring to the coast of Oregon.*

A national monument to Lewis in Tennessee contains his grave and the site of the inn on the bandit-ridden old Natchez Trace where he died in 1809, of a gunshot wound, after surviving thousands of miles of danger in the West. Though Jefferson thought him a suicide, he was probably murdered for his money.

The Natchez Trace, once a series of Indian trails, has been made a national parkway.

Covered-wagon Ruts Still Visible

Wagon wheels, rolling westward, grooved deep lines of character upon the face of the West. You see them, for instance, at Scotts Bluff, in Nebraska, a national monument and long a landmark for travelers on the Oregon Trail (page 77).

An even more explicit record is Inscription Rock, in El Morro National Monument, New

* See "How the United States Grew," by McFall Kerbey, National Geographic Magazine, May, 1953.

National Geographic Photographer Robert F. Sisson

Skilled and Reverent Hands Fashion the Scene of Lincoln's Martyrdom

At the Lincoln Museum in Ford's Theater, Washington, D. C., is this model of the theater as it appeared when the Civil War President was assassinated there by John Wilkes Booth. Rudolf W. Bauss, who built the miniature, is placing a model of Lincoln's chair in the box where he sat when Booth stole in and shot him. Catching his spurs in a flag, the assassin broke his leg as he leaped to the stage and fled.

Mexico, where early Indians and Spaniards as well as American soldiers and settlers carved their own equivalents of "Kilroy was here."

Fertile farms in Oregon, gold in California, the Mormon promised land in Utah—these lured the covered wagons on.

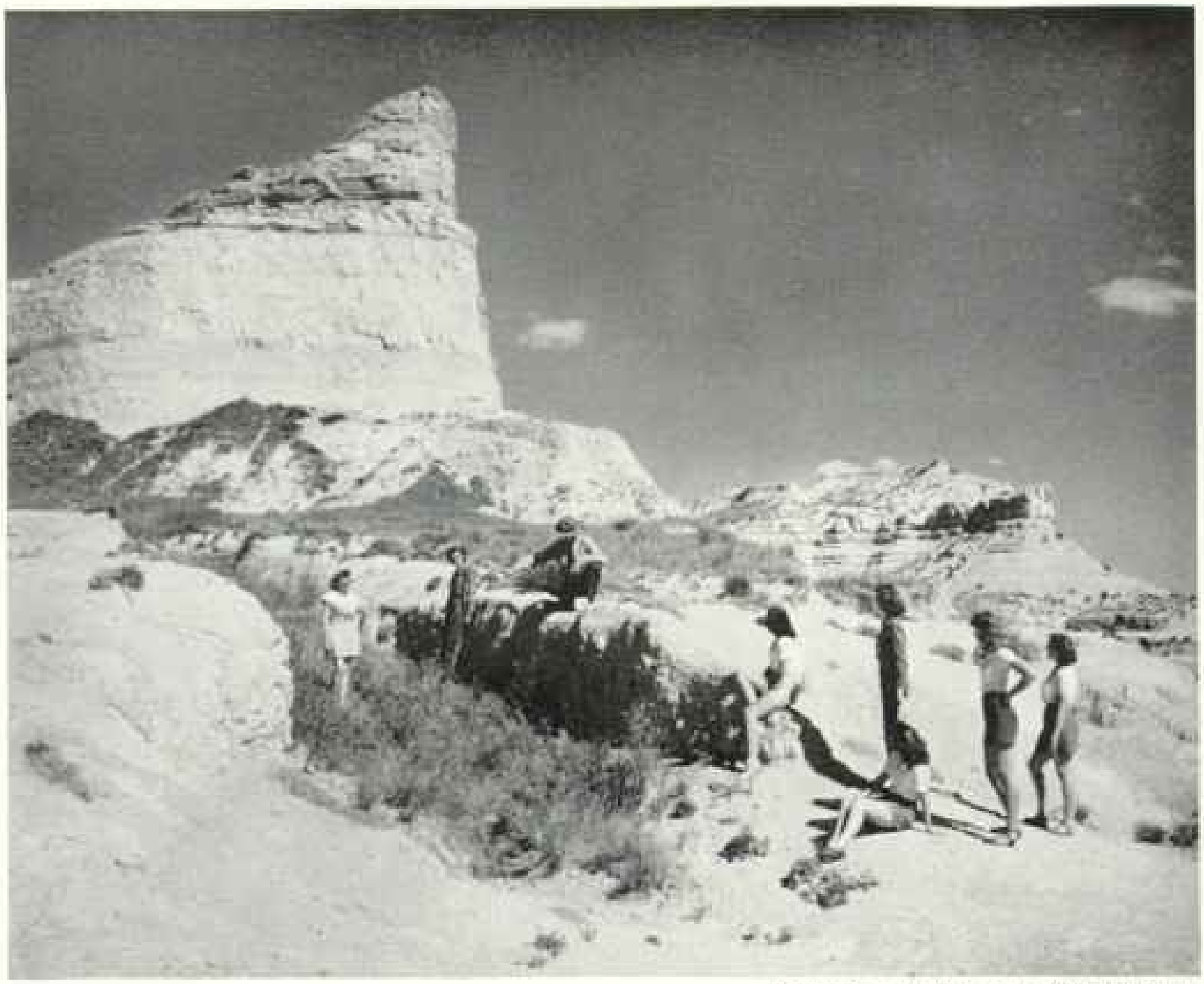
An old Mormon fort in Arizona is Pipe Spring National Monument, reputed to be named for a feat of marksmanship. The story goes that friends bet a crack shot, "Gunlock Bill" Hamblin, that he couldn't shoot through a silk handkerchief hung 50 paces away. The bullet failed to puncture the yielding silk. Thereupon, Bill bet he could shoot the bottom from the bowl of a pipe, placed on a rock beside the spring, without hitting the rim. He collected.

Furs drew some to Oregon, notably Canadian Dr. John McLoughlin of the Hudson's Bay Company, who was the friend and protector of American settlers in the region. His 103-year-old home at Oregon City is a national historic site. Another reminder of the fur-trading era is the new Fort Vancouver National Monument, at Vancouver, Washington.

Missionary fervor brought a few, such as Dr. Marcus Whitman and his wife. Whitman National Monument, in Washington, tells the story of their martyrdom—murdered with a dozen others by Indians angered by an epidemic of measles. The massacre led the Government to extend its sway over the entire Oregon Territory.

Texas had won freedom from Mexico and joined its star to the constellation of the United States. Expansion was in the air. The War with Mexico left us no official national monuments but won the Nation the whole Southwest, including California—which promptly discovered gold.

Should new States be slave or free? The question hammered like the pulse of fever as



National Geographic Photographer Willard R. Culver

Tall Daughters of Today Sun-bathe on the Deep-worn Oregon Trail

This grass-grown trough in Scotts Bluff National Monument, Nebraska, is a part of the old trail graven by the wagon wheels of a quarter of a million pioneers bound for the promised land of the setting sun. Weirdly eroded Scotts Bluff, landmark on the Oregon Trail, is named for a figure of tragedy, Hiram Scott. As Washington Irving told the story, in *The Adventures of Captain Bonneville*, Scott, a fur trader, fell ill and was left by his companions to die. The following year they found his bones 60 miles away, "and it appeared that the wretched man had crawled that immense distance before death put an end to his miseries."

passions rose toward war and a tall, gaunt country lawyer shambled to the chair of state.

Patriotism, President Abraham Lincoln saw clearly, must be to the Union, not to a State, if the Nation was to live. National shrines highlight his career, from the farm on which he was born near Hodgenville, Kentucky, to the Lincoln Museum, formerly Ford's Theater, and the House Where Lincoln Died, in Washington, D. C., and finally the temple where in marble he sits, surrounded by his simple, deathless words. His Springfield, Illinois, home and grave are not a national monument.

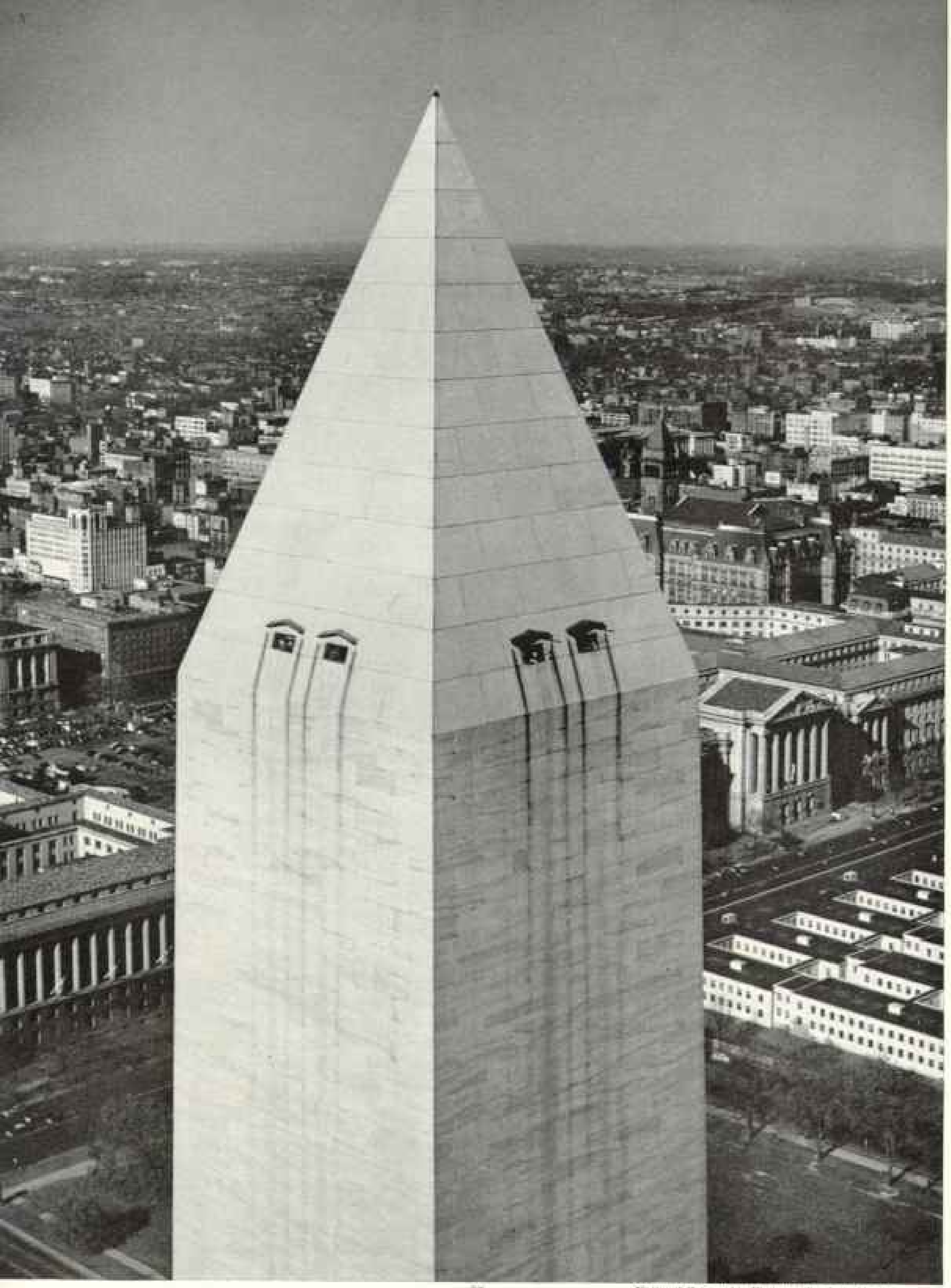
A score of national monuments, cemeteries, military parks, and battlefield sites mark the fields of the War Between the States. Their names are like a dirge, chanted to the muted bugle notes of *The Battle Hymn of the Republic*—Antietam, Fredericksburg, Stones River, Fort Donelson, Shiloh, and Vicksburg; Chickamauga, Gettysburg, Kennesaw Mountain, Atlanta, Brices Cross Roads, Spotsylvania, Richmond, Petersburg—and finally Appomattox Court House, Virginia, the merciful end of it all.

"Surrender House" Being Rebuilt

At Appomattox Court House, a deserted village, the National Park Service is rebuilding the McLean House where Gen. Robert E. Lee shook hands in surrender to stubborn but generous Gen. Ulysses S. Grant.

Poor Wilmer McLean, the owner, complained that the war was following him around. Its first battle occurred in his front yard at Manassas, and when he sought peace farther south it ended up in his parlor!

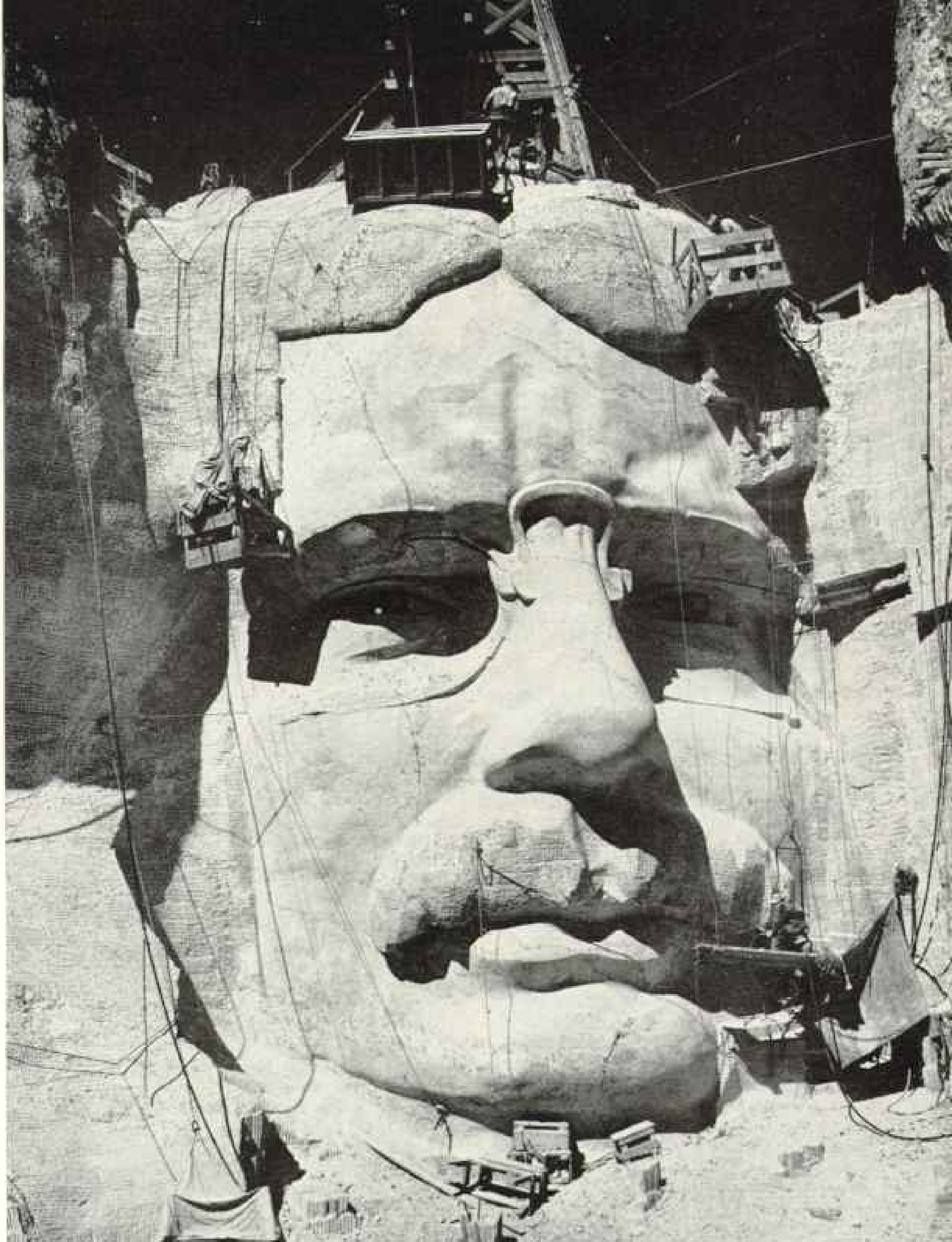
Souvenir-hungry soldiers bought or took



28 National Geographic Photographer Luis Marden

Sight-seers in the Washington Monument Peer at the Flying Cameraman

His helicopter hovers close to catch this unusual view of the National Capital's most conspicuous landmark. The cap of pure aluminum is 555 feet above the ground. To remove weather stains the giant shaft gets soap-and-water baths. Pillared buildings are the Department of Commerce (left) and Labor Department Auditorium (right).



Bell Photo

Teddy Roosevelt's 60-foot Head Dwarfs Workmen Carving His Features

Twice the size of the head of the Sphinx of Egypt are the faces—now finished—of Presidents Washington, Jefferson, Lincoln, and Theodore Roosevelt, sculptured by the late Gutzon Borglum from a granite mountainside in Mount Rushmore National Memorial, South Dakota.

most of his furniture. Some even pulled the flowers from his garden.

In 1893 a promoter dismantled the surrender house for exhibition in Chicago and Washington, but the venture failed and the house lay there, a pile of brick and timbers. When I saw it recently, weather and souvenir hunters had left only the foundation.

Reconstruction has been made possible by finding drawings and measurements of the building, made before its demolition and verified as authentic by FBI manuscript sleuths. The National Park Service would be glad to hear from anybody who has a piece of the original house.

Reminiscent of the seacoast side of the war are Fort Sumter, at Charleston, South Carolina, and Fort Pulaski National Monument, near Savannah, Georgia. Fort Sumter, where the tragic struggle began, became a national monument only a few months ago.

Massive brick walls of Fort Pulaski still show the scars made as rifled cannon of the Union forces marked a revolution in warfare by forcing surrender of the fort in 30 hours.

Telltale Bottles from an Old Moat

From the Fort Pulaski moat the National Park Service has recovered hundreds of bottles. Some had contained Plantation Bitters, largely Virgin Islands rum. Said advertisements of the 1860's: "They make the weak strong and are exhausted nature's great restorers."

Other bottles once held Agua de Magnolia, "A toilet delight! The ladies' treasure and gentleman's boon! The sweetest thing and greatest quantity. Manufactured from the rich Southern Magnolia . . . Cures mosquito bites and stings of insects."

Representative of a southern way of life that went "with the wind" of the war is Lee Mansion National Memorial, on the Virginia heights of Arlington above the Nation's Capital. In contrast, at Greeneville, Tennessee, Andrew Johnson National Monument includes the humble tailor shop of the backwoods southerner who succeeded Lincoln as President.

For the Indians, even more than for the South, old ways of life were vanishing. As early as 1809 the Tennessee-born Cherokee Sequoyah—whose itinerant father was white—began devising an alphabet to enable his people to "talk on paper," like white men. New Echota Marker National Memorial, in Georgia, marks the 1828 birthplace of the American Indian press.

But with tomahawk, gun, and knife, not words, many of these original Americans fought as the Nation's westward push shouldered them from their lands. Big Hole and Custer Battlefield National Monuments, in Montana, and Lava Beds, in California, recall some bitter battles. A base for cavalrymen guarding the Oregon Trail was old Fort Laramie, Wyoming, run down and serving as barns and chicken coops before it became a national monument in 1938.

How Labor's Lot Has Changed

As industry, unions, and labor laws developed, the lives of workingmen were changing. How bad they once were I realized when I read an old indenture agreement at Hopewell Village National Historic Site, Pennsylvania, an early ironmaking center that served both Continental and Union Armies.

The agreement, made in 1830, bound one David Johnston to work as apprentice to the ironmaster for 16 years and one month, during which time the master was to give him "meat, drink, clothing, lodging, washing," and *one year* of schooling.

David was not to "absent himself day nor Night from his Said Master's Service; without Leave; nor Haunt Ale-houses, Taverns; or Play Houses." When free at last, the young man was to get from his big-hearted master "One Suit of Cloths to be Entirely new and all his old Cloths."

No wonder the free life of the West called many from such bondage!

Frontiersmen clamored for free land, and during the War Between the States Congress passed the Homestead Act. Any American could get 160 acres by paying a small fee and living five years on Federal land. In Nebraska, Homestead National Monument of America preserves the site of the first claim, filed by a man with the fitting name of Freeman, under the democratic policy which opened the western Plains.

Americans who opened another frontier, the challenging, limitless realms of the air, are immortalized on North Carolina dunes by Kill Devil Hill National Memorial to the Wright brothers, pioneers of flight.

In the Black Hills of South Dakota, the Gargantuan faces of Mount Rushmore National Memorial include a 20th-century President along with Washington, Lincoln, and Jefferson. Mountain-carved Teddy Roosevelt, colonel in the Spanish-American War and "big stick" President, peers out through spectacles of stone (page 79).

Theodore Roosevelt National Memorial Park, North Dakota, recalls his love of the hard-riding West.

No national monument honors Woodrow Wilson, but the American cost of Allied vic-

National Geographic Photographer Willard R. Culver

At Fort Pulaski, Georgia, Rifled Cannon Sounded the Knell of Brick Fortifications

"You might as well cannonade the Rocky Mountains as Fort Pulaski," proclaimed a high military authority after the brick fortress was completed in 1847. Thirty-two-foot-high moated walls are 7 to 11 feet thick. But 30 hours of bombardment by Union artillery, dragged through swamps and emplaced a mile away on Tybee Island, demonstrated the breaching power of rifle projectiles, threatened to blow up the magazine, and forced surrender of this Confederate fort guarding the approach to Savannah, Georgia, on April 11, 1862. Its pocked walls stand as a milestone in military history.

tory in World War I is eternally symbolized in Arlington National Cemetery at the tomb of the soldier "known but to God."

Up at Hyde Park, New York, on the Hudson River, 5,000 people on a summer Sunday pour through the Home of Franklin D. Roosevelt National Historic Site. Some drop to their knees, and a few tears fall as they come to the grave in the rose garden where the World War II President lies beside the "plain white monument—no carving or decoration" which he specified in 1937. His memorandum even gave the exact dimensions of the monument.

"Many who come here," said the superintendent, "seem to feel that if only FDR were alive all their troubles would disappear."

In the museum they read his boyhood letters and look over his beloved ship models. In the library accredited research workers may study his state papers. But in the comfortable old house overlooking the Hudson they feel they know him best.

In his room I saw the old Panama hat which

National Geographic Photographer B. Anthony Stewart

Visitors Troop Through the Hyde Park Home of the World War II President

One of the newest national historic sites preserves Franklin D. Roosevelt's comfortable old house overlooking the Hudson River. The site includes his grave. Adjacent to it is the Franklin D. Roosevelt Library, which contains his papers, books, and other collections, including his beloved ship models.

he wore when he came to Hyde Park to relax. Stuck up on the dresser mirror with a hatpin is a picture of some of his children. Al Smith broke with him over politics, but FDR never took down the picture of his friend of brown-derby days. In the room is the chair of Fala, his dog.

"Forward with Strong and Active Faith"

Inevitably the house evokes comparison with Vanderbilt Mansion National Historic Site a little way down the road. Full of glittering, sumptuous furnishings from Europe, that magnificent Italian Renaissance mansion is a multimillionaire's palace. But Hyde Park, though a mansion, is a home.

"He lived just like the rest of us," people say. "Why, we have a piece of furniture like that at home."

History has yet to assess the true stature of FDR. Like many another President, he was fervently loved and hotly hated. Yet few will deny the magnetic power of his personality and voice.

As I roamed the rooms the President loved, I seemed to hear the rich voice saying: "The only limit to our realization of tomorrow will be our doubts of today. Let us move forward with strong and active faith." Franklin D. Roosevelt wrote these words in an address he never delivered. The next day he died.

From New York I took a night plane back to the Nation's Capital. As the airliner banked and swung low for a landing, the dome of the Capitol loomed like a lodestar, and near it glowed the shrines of Washington, Jefferson, and Lincoln, "who made and preserved us a nation."

Suffering and tragedy, blisters and blood, the lure of distance, the ache to discover, the primal urge to have and to hold, firm faith, the will to persevere, the ability to blend all nations, the all-surpassing love of freedom—these made the United States.

Wildlife of Everglades National Park

By Daniel B. Beard

Superintendent, Everglades National Park

THE DENSE canopy of red mangrove trees bordering Squawk Creek gave way to the open vastness of the Everglades.

All morning Walter A. Weber and I had been working our way through uncharted waters from our camp at Little Banana Patch, Florida, historic campsite of Seminole Indians and perhaps the ancient Calusas before them.

Every bend of the stream had looked the same, with monotonous thickets of spraddle-rooted mangroves growing along the swampy shorelines. We had been finding our way by the "feel of the place" and not from recognizable landmarks (map, page 87).

Herons Gave Squawk Creek Its Name

As our outboard motor had churned up the sepia waters (and weeds) a never-ending number of yellow-crowned and black-crowned night herons (page 104) had pumped their way out of the trees to fly ahead of us up the stream. Their disturbed "squawks" have given the creek its local name.

As we came out into the Everglades the stream shoaled, and we began to pole our skiff.

Except for a flock of white ibis (page 90) lazily circling in the distance, there was no sign of life on this hot midwinter afternoon.

The waving sedges and grasses of the Glades disappeared among the heat waves of the horizon and seemed to mingle with the billowing clouds. Hammocks, the tree-islands of the Everglades, dotted the landscape everywhere.

We soon ran against a fallen cabbage palm log and could go no farther by boat; so Weber started to get out, armed with cameras, binoculars, sketch pads, and the other accouterments of a wildlife artist in the field.

On the verge of jumping ashore he stopped, pointing first at the cabbage log, then at the muddy shore.

From my poling position in the boat I could plainly see otter tracks, not unexpected in this part of the new Everglades National Park (page 86). On the log was a half-eaten watersnake.

The little drama was as plain as if we had seen it enacted. An otter had killed the snake and feasted upon it.

The sign was so fresh that both of us instinctively looked around, expecting to see the otter's furry head and beady eyes watching us from the stream. But if it was there we could not find it.

Weber unwound some of his equipment and took notes, from which he later reconstructed the scene (page 103).

A nearby hammock, dominated by an unusually large mahogany tree, beckoned to us. As we struggled toward it, knee-deep marl sucked at our feet and sawgrass tore into our clothing. We soon realized why early Glades explorers used copper wire for shoe laces!

Weber was the first to break through the surrounding cocoplum bushes into the hammock.

Once inside, we both stopped to catch our breath and to become used to the dim light, for it was much like stepping from a sunlit street into a movie theater. Live oaks, reddish-barked gumbo limbo trees, wild tamarinds with their lacy leaflets, the lone mahogany tree, a dense undergrowth of wild coffee bushes, and numerous vines almost blotted out the sun. The familiar sing of attacking mosquitoes was the only sound.

"I'll bet we're the first white men to set foot in this place," said Weber.

Yet, somehow, things did not seem quite right.

I looked around for an owl. It seems as if about every mature hammock in the Everglades has at least one barred owl that finds good hunting on the rodents and such which inhabit the vicinity. But instead of finding an owl I flushed out a gorgeous Florida pileated woodpecker (page 101). Off it flew among the trees, with the characteristic up-and-down flight of the woodpecker clan.

Two indigo snakes rustled through the leaves. Though harmless as the toad in your garden, these big, glistening, bluish snakes are apt to frighten one who does not know them.

Weber went after one of the snakes but tripped upon a hard object half buried in the leaf mould. He picked it up—a rusty gasoline can!

Man's Destructive Hand Apparent

Far from being the first white men to visit the isolated hammock, we were "Johnny come lately." Someone in a glades buggy had been there first—perhaps many times. Until Everglades National Park was established in 1947, poachers as well as legitimate hunters used the huge-tired vehicles called "swamp buggies" or "glades buggies" to penetrate the marshy wilderness.*

* See "Haunting Heart of the Everglades," by Andrew H. Brown, National Geographic Magazine, February, 1948.

National Geographic Photographer Willard R. Culver

A Propeller-driven Airboat Glides Across Shallows Like a Plane Taxiing on a Runway

In these Everglades marshes an underwater propeller would be fouled, but nothing entangles the wash from an airplane propeller. The large rudder, turned against the air current, cannot be grounded. Explorers, using such flat-bottomed, home-built boats, venture into water scarcely three inches deep.

Remains of an old camp and some alligator and white-tailed deer bones were found at the far edge of the hammock.

What had seemed wrong was now apparent. The wild orchids that commonly grow in mature hammocks were gone. Missing, too, were all the Liguus tree snails, prized by collectors for their ornamental shells. No deer used the hammock for daytime cover, and the venerable alligators (pages 94 and 116) which must have lived not far away had lost their lives and hides.

Seminoles claim 'gator tails are good to eat and also help keep mosquitoes away. But it was the hide-hunting white man who, until recently, decimated the gator population of southern Florida.

Fortunately, the glades buggy people had overlooked the big mahogany tree.

Our return trip was uneventful, unless *not* catching a snook in these usually productive waters could be called an event. Plenty of tarpon were seen "rolling" as they fed (page 112), but no tasty snook rose to our tempting lures.

At Little Banana Patch a cabin cruiser waited to take us back to Coot Bay Ranger Station.

"Coney Island Crowds" of Birds

In Everglades Park, since time immemorial, ibis, egrets, herons, and other birds have gathered in immense numbers at the same places each year to nest and rear their young. There is more excitement, more doing, than at Coney Island on the Fourth of July.

Flights of adult birds are continually coming in with food or to give nest relief to their mates. Other flights are going out, while high overhead the swing shift, perhaps, is taking its recreation in lazy, soaring circles. Some nests contain eggs while the young in others are already trying out their wings.

Squalling, fighting, pushing, and chattering

birds by the thousands do indeed remind one of a Coney Island crowd—except that the birds are more modestly dressed.

Old-timers from the commercial fishing villages of Flamingo, on Florida Bay, and Chokoloskee in Collier County, still remember the plume-hunting days of the last century when the "bird on Nellie's hat" was a fad. Plumes from such birds as the snowy egret (page 89) and the American egret (page 98), as well as other birds, brought a pretty penny from the millinery trade.

Since these birds wear the plumes only during nesting time, killing and "scalping" of adults soon threatened the rookeries. Courageous action by conservationists of that day brought an end to the practice amid loud laments that they were trying to "destroy an industry."

From then until the Federal Government took over the southern Everglades, wardens of the National Audubon Society guarded the precious rookeries. One of these men is buried at Cape Sable with the epitaph on his tombstone that he was "Faithful unto Death."

Some day, park visitors will be able to see the great East River Rookery (page 97); but today the only conducted tours are made by the National Audubon Society to Cuthbert Lake Rookery (114).

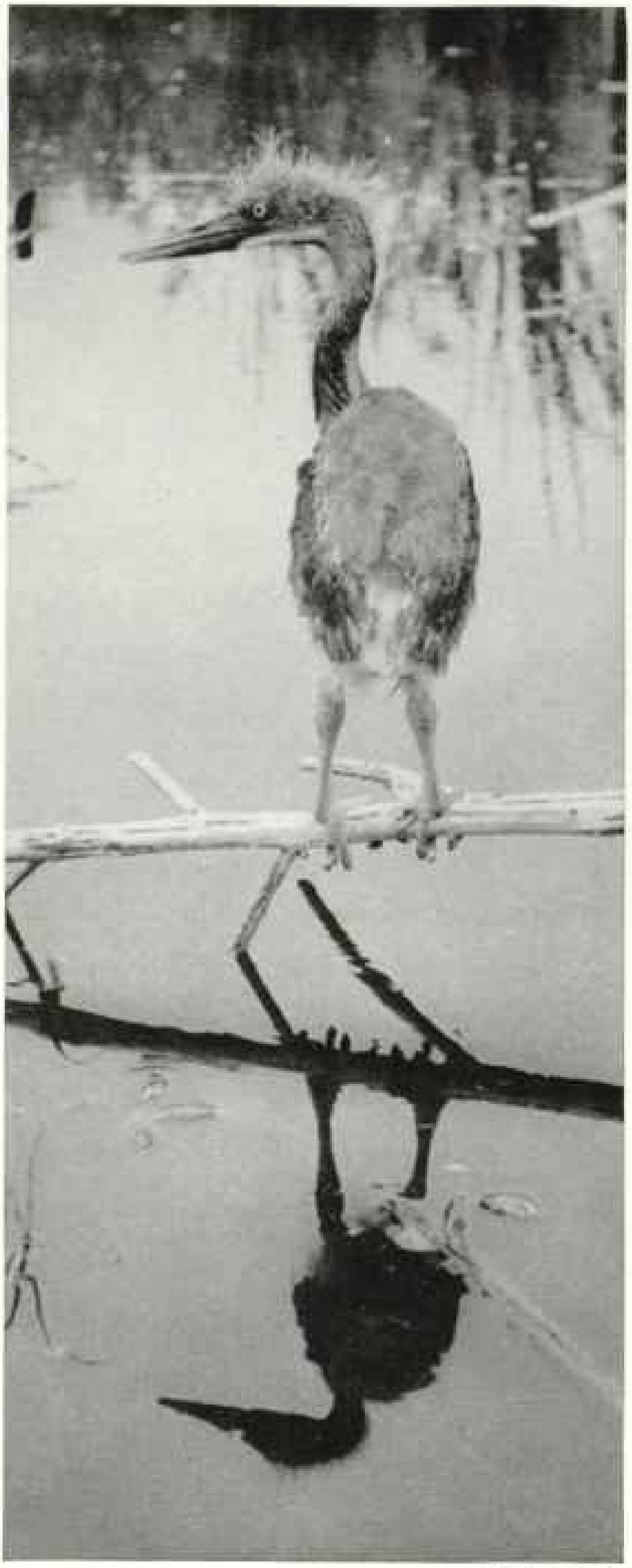
"57 Varieties" at East River Rookery

Only by boat can East River Rookery be reached out of Coot Bay Ranger Station, and it takes an experienced boatman to make it by traversing the winding creeks, rivers, and numerous bays.

Such a pilot is Barney Parker, who has in the past decade served in the area as Audubon warden and Fish and Wildlife Service patrolman and now is a boatman with the National Park Service.

If you were to ask Barney what species of birds nest at East River Rookery, he would shrug his shoulders and laconically reply, "Heinz 57 varieties," and he is about right.

First to come in December are the wood ibis, commonly called "flintheads." They are in reality storks. These huge birds are an inspiring sight as squadrons soar together at great heights on motionless wings or fly in military lines, their long necks and legs stretched out to their full extent, the pure white of their plumage in the bright sun contrasting beautifully with the jet black of their wing tips. Then come Ameri-



Homer Rhodes, Jr.

Louisiana Heron Has Florida Birth Certificate

Having escaped fish crows and black vultures, this Everglades dweller leaves the nest on unsteady legs and surveys a marshy world. Like the ugly duckling, "frizzle-top" will grow up to be a graceful bird. "Lady-of-the-waters," Audubon called the Louisiana heron.

Hugo H. Schroder

Everglades National Park Gives Playful Otters a Reedy Haven from Fur Trappers

Throughout their merry lives otters never cease to romp like children. They glide down mud slides, joyfully taking bellywhoppers. Playing follow the leader, they roll through the water like porpoises. When captured young, they make intelligent, affectionate pets capable of obeying whistles and retrieving game. Webbed feet enable these powerful swimmers to overtake darting fish, their favorite fare. Frogs, crayfish, and snakes make acceptable appetizers (page 103).

can egrets to choose some nesting keys close by, followed by snowy egrets, Louisiana herons, water turkeys, and other birds. The last arrivals are the white ibis, which also nest along the headwaters of the Shark River.

By the latter part of February, East River Rookery is in full bloom; by late June it is usually about spent. Can it be that the birds know that hordes of mosquitoes will descend upon them in July and August?

Tons of Natural Food Required

We took a visiting scientist from the Midwest to see East River Rookery. He was amazed, not only by the number of birds, but as to where all the food came from.

"Have you any idea," he exclaimed, "what an enormous amount of food is necessary to feed just one bird? Here are hundreds of thousands, and they all have to eat."

The birds feed in the near-by Everglades on fresh-water crayfish, minnows, snails, frogs, maybe even a baby alligator now and then. Their nesting site was chosen by instinct, or intelligence if you will, to combine proximity to feeding areas with protection from omnivorous raccoons (page 111) which might eat their eggs, and from bobcats or other enemies.

Since the fertile Everglades must produce tons and tons of natural food for this one rookery alone, is it any wonder that conservationists look askance at any threatened drainage operations or roads which might alter water levels and destroy the food supply?

On the return trip our scientist had another experience. In a shallow bay we passed a manatee and its calf (pages 106 and 115).

The manatee, or sea cow, is a mammal that has become adapted to its marine environment. It is surprisingly large and usually of a sedentary nature. Manatees "graze" on grasses of bay bottoms in the manner of barnyard

Drawn by R. E. Eastwood and Irvin E. Alleman

A Zoo Without Cages Is Everglades National Park on Miami's Doorstep

Still undeveloped for tourists, this subtropic wilderness, Uncle Sam's newest national park, has not yet been fully explored. Seminoles live along its northern rim amid a sea of grasses and sedges, spotted by hammock tree-islands and drained by a maze of waterways. Its highest peak is scarcely 12 feet above sea level. Here in rookery and swamp wild birds, strange mammals and fish, and the Nation's only crocodiles are protected. The fishing town of Flamingo was nearly destroyed by two 1948 hurricanes.

cows. Very little is known about them because they are still rare, seldom seen, and hard to observe except when the tips of their noses come up for an occasional draught of air.

Sea Cow Takes a "Bellywhopper"

We got between the cow manatee and her calf. The adult became frantic and hurled its ungainly bulk clear of the water—not in the graceful curve of the porpoise (page 107), but in a tremendous "bellywhopper" that frightened our scientist and caused him to ask nervously, "Do they ever jump into your boat?"

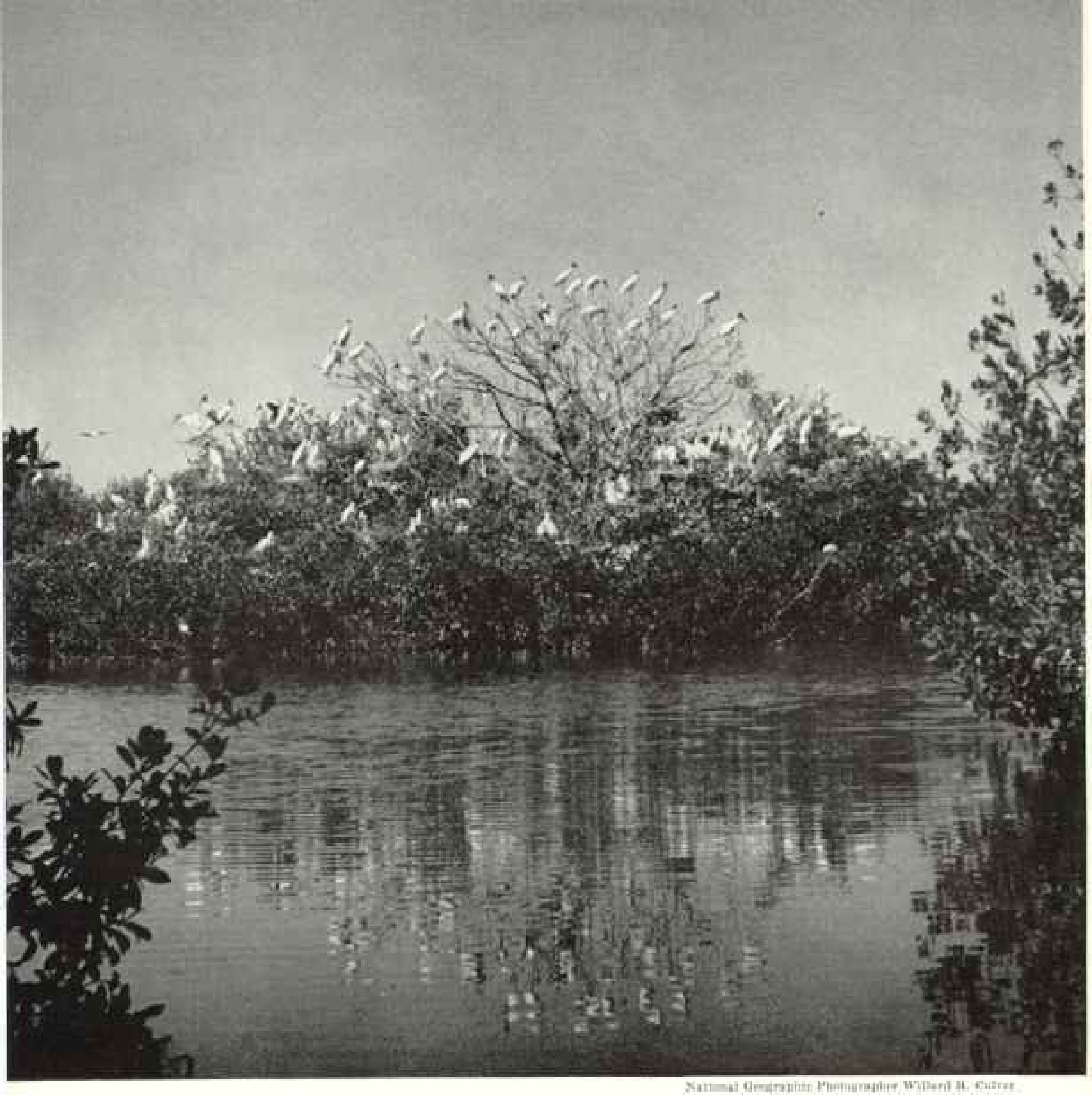
"Oh, sure. Lots of times," fibbed Barney Parker, swinging the wheel hard aport. "We take them home and milk them."

The long, swinging arm of the Florida Keys protects an expanse of shoal water known as Florida Bay. In many ways it bears a close resemblance to the Bahamas, with its sprinkling of mangrove keys and crisscross of propeller tracks made by commercial fishing boats in the shallow bottom.

During summer months this bay is a shimmering mirror reflecting the statuesque cumulus clouds parading over the distant Glades. Sometimes it is lashed by the merciless fury of a hurricane still unfettered by crossing any land mass. In winter, when a "norther" strikes, its surface is churned into a milky froth as the shallow marl bottom is washed by the waves.

The Bay is not yet a part of the park, being still a portion of Everglades National Wildlife Refuge. Some of the rarest and most beautiful species in the United States make this environment their home.

It is a startling and indescribable sight to see a flock of big pink birds with crimson splashes across their shoulders coming in to Bottle Key in Florida Bay. Jack C. Watson,



National Geographic Photographer Willard R. Culver

Feathery White Diadems Crown the Mangroves; Branches Bend Beneath Wood Ibis

Here the photographer tied up his boat one night. Sleep fled when the wood ibis, thickly colonizing hundreds of trees, saluted the dawn with their guttural squawks. At midmorning these birds flew in to East River Rookery, to feed their young nesting on the lower branches (page 97).

Under Refuge Manager for the Fish and Wildlife Service, stood on the after deck of his patrol boat with Weber and me to watch the spectacle.

The birds were roseate spoonbills (page 91), once almost gone from the Florida scene, but now coming back strong under Watson's watchful eyes. Their spatulate-shaped bills are used in a sidewise motion for sifting out their food.

After the birds settled, we dropped Weber and his sketch box on a near-by mangrove clump. It made a good, natural blind, and the birds would not be disturbed by his presence.

Later in the day we returned to pick up the artist, none the worse for a few sandfly bites but perched high in the tree above the incoming tide. He had seen and sketched more than the "pinks." Some rare reddish egrets (page 93) had spent the day chasing killifish around on the shallows surrounding his mangrove.

Known locally as "red-necked herons," these egrets can be quickly identified by their unheronlike habit of chasing down their prey. Once thought lost to Florida, they, too, have staged a comeback.

American crocodiles also inhabit Florida Bay and the salt-water areas along the south

  Painting by Walter A. Weber

Snowy Egrets Display Their Heavenly Courtship Plumage in a Mangrove Swamp

Walter A. Weber's egrets and 23 other wildlife scenes were painted in Florida's Everglades for the NATIONAL GEOGRAPHIC. To decorate women's hats, plume hunters almost exterminated these dainty birds by the early 1900's.

Painting by Walter A. Weber

Evening Sees Squadrons of White Ibis Soaring on Black-tipped Wings from Everglades Marshes to Roosts on Near-by Keys

Roseate Spoonbills, Adults Wearing Crimson Epaulets, Glide into Bottle Key. Spatulate Bills Sift Food from Mud

Painting by Walter A. Weber

  Painting by Walter A. Weber

Eastern Brown Pelicans Drop Like Bombs for Fish and Scurry Like Clowns for the Catch

Before striking the water, the diver extends neck and thrusts back wings. Forked tail identifies a man-of-war bird.

 0.1 Painting by Walter A. Weber

Not All Reddish Egrets Are Redheads; a Rare Phase in Florida Is Starch White (Right)

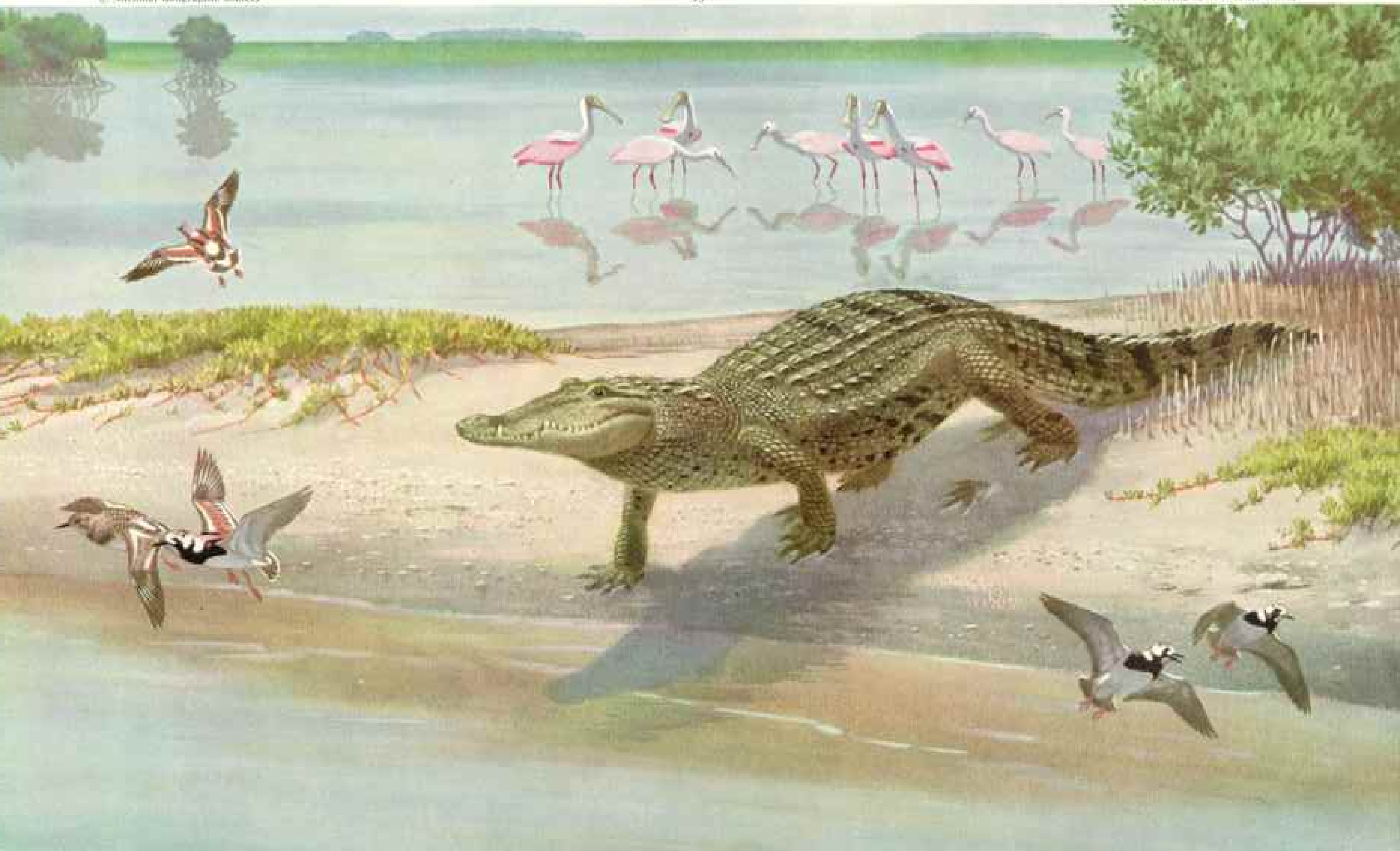
These members of the heron tribe run down killifish in shallows. Their kinsmen catch their prey stalking slowly.

Painting by Walter A. Weber

Limpkins (Left) and Gallinules Ignore a Sluggish Alligator Enjoying Siesta in a Cypress Pool

Ruddy Turnstones Scatter Before a Crocodile, Who Asks No Favors and Grants None. Color and Pointed Snout Tell Croc from Gator

Painting by Walter A. Weber



Painting by Walter A. Weber

Wood Ibis Seem to Weave a Halo Around a Nest of Water Turkeys (Anhingas)

When swimming, the snakebird, as it is often called, submerges all but serpentlike head and neck. Downy young, reptilian in appearance, hiss at intruders. When threatened with capture, they leap to water like fish.

Painting by Walter A. Weber

What a Wood Ibis Sees on Coming In for a Landing at East River Rookery

Hundreds of thousands of birds—ibis, egrets, herons, anhingas—nest in this labyrinth of islands, only a corner of which is shown. Every winter the "flintheads" (wood ibis) make it their nursery.

Painting by Walter A. Weber

Herons and Egrets on Wing and Perch Adorn the Tamiami Trail. Little Blue Heron (Extreme Left) Is in Immature White Plumage

"Damnyankee" White Pelicans from the North Winter at Cape Sable. Horny Growths on Bills Forecast the Breeding Season

Painting by Walter A. Weber

Painting by Walter A. Weber

Black-necked Stilts Parade past Black Skimmers. Both Wear Formal Dress

Working by day, stilts comb the shallows on long, slender legs. Skimmers, as their name implies, fly low over the sea, scooping up food in long lower mandibles. They frequently forage by night.

Painting by Walter A. Weber

Florida Pileated Woodpeckers Take a Tower Apartment in a Dead Royal Palm

Dense hammocks, or tree islands, in the Everglades are favorite haunts of the pileated (capped) woodpecker. The royal palm, a magnificent ornamental, has been planted well beyond its native range in southern Florida.

Painting by Walter A. Weber

A Puma Slinks on Silent Paws Through Moss-hung Everglades National Park, His Last Sanctuary East of the Mississippi

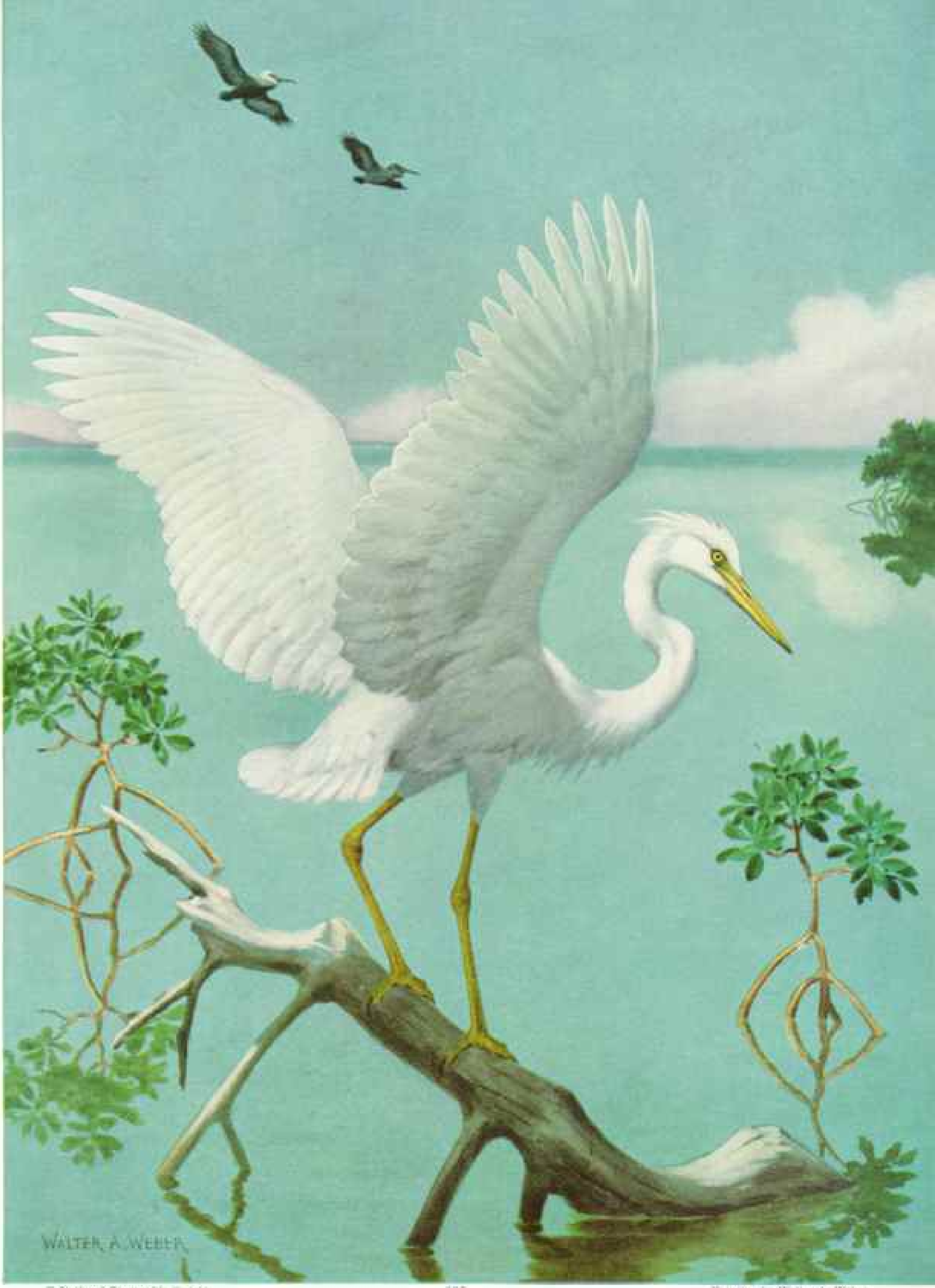
An Otter Captures a Water Snake. Only Ferns and Lilies Witness the Tragedy. The Artist Reconstructed It from Signs of the Battle

Painting by Walter A. Weber

Painting by Walter A. Weber

Squawk Creek Takes Its Name from Raucous Night Herons Roosting on Its Banks

Yellow-crowned (perching) and black-crowned (flying) night herons dwell among the straddle-rooted red mangroves.



  Painting by Walter A. Weber

Aloof but Pugnacious, the Great White Heron Spreads 7-foot Wings Like an Angel's

Once shot for food and "sport," the bird barely survived the 1935 hurricane. Under protection now, it is multiplying.

Painting by Walter A. Weber

Only a Mother Could Love Her Ugly Baby Manatee. Born in the Water, This Young Mammal Needs No Swimming Lesson

Porpoises, Fast Enough to Catch Mullet, Breathe Air and Swim with Up-and-down Fluke Motion, Like Their Cousins the Whales

Painting by Walter A. Weber

  Painting by Walter A. Weber

Florida Wild Turkeys, Flushed Out of Hiding, Thresh the Air with Powerful Wings

This king of game birds, when alarmed, usually runs like a streak through the grass and saw palmetto, taking flight only when beyond shotgun range. Tall, lacy trees are Caribbean pines.

Painting by Walter A. Weber

With a Martin's Grace and a Hawk's Speed, Swallow-tailed Kites Trace Aerial Patterns

In effortless, rollicking maneuvers, the kite darts and dives. This skillful flier often holds captured snake or lizard in talons and takes lunch on the wing. Oblivious to danger, he often flies close to hunters.

A Bobcat Sidesteps Coiled Death. Rare Is the Mammal That Disputes the Right of Way with a Diamondback Rattlesnake

Three Masked Facsimiles Scamper after Mamma Coon. The Wary Marsh Rabbit Is Prepared to Dive into Water or Brush

Painting by Walter A. Weber

  Painting by Walter A. Weber

Florida's Leaping Tarpon, the Silver King, Is as Bold and Armored as a Crusader Knight

Scales like the knight's chain mail protect this glorious game fish. To preserve his fun for others, the good sportsman takes one scale as a souvenir and frees his catch. World's record tarpon on rod and reel: 247 pounds.

Allan D. Cruickshank from National Audubon Society

When a White Ibis Colony Takes Wing, the Everglades Landscape Appears to Move

All last summer some 40,000 white ibis perched on Duck Rock, near Pavilion Key. Rank after rank in flight made a sight never to be forgotten (page 90). Wing tips are black, bills orange, faces and legs red. Audubon watched a white ibis drop pieces of mud into a crayfish hole, then gobble the little crustacean as it came up to remove the plug.

shore of the mainland. Years of persecution by man have made the otherwise saucy "croc" very timid; but there is still something sinister and at the same time majestic about these last crocodiles in the United States.

When people ask me how to tell a crocodile from an alligator, I often reply, "Don't worry. If you see a croc, you'll know it."

The difference is much the same as that between a grizzly bear and a black bear. But if the observer wants to get down to fine points, the long, slender snout of the crocodile as compared with the relatively shorter, blunter one of the gator is the best field mark. Furthermore, crocs stick to salt-water habitats, and gators stay in fresh water.

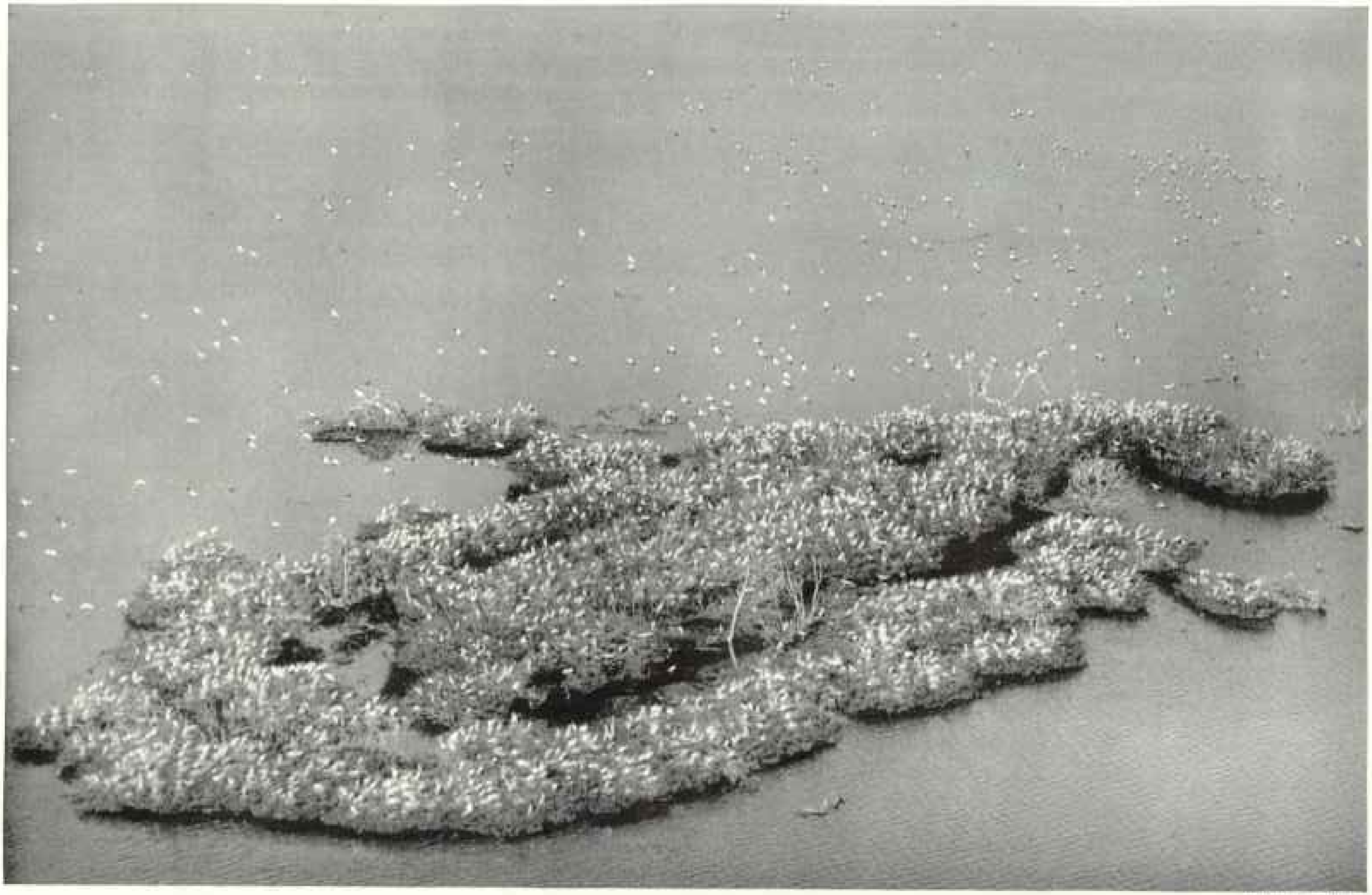
Now at long last protected, perhaps the crocodile will again become a more common, thrilling sight in its remaining range.

Associated with the crocodile, roseate spoonbill, and reddish egret is another famous Florida Bay creature, the pugnacious great white heron (page 105).

No other large bird of North America lives in such a restricted range—an area 50 by 50 miles in extent. It was discovered by Audubon, who captured several of the big white birds alive.

From Florida Bay on down the marl flats to Key West, the great white heron is a characteristic sight, standing belly-deep in the milky-blue waters and looking twice as big as it really is.

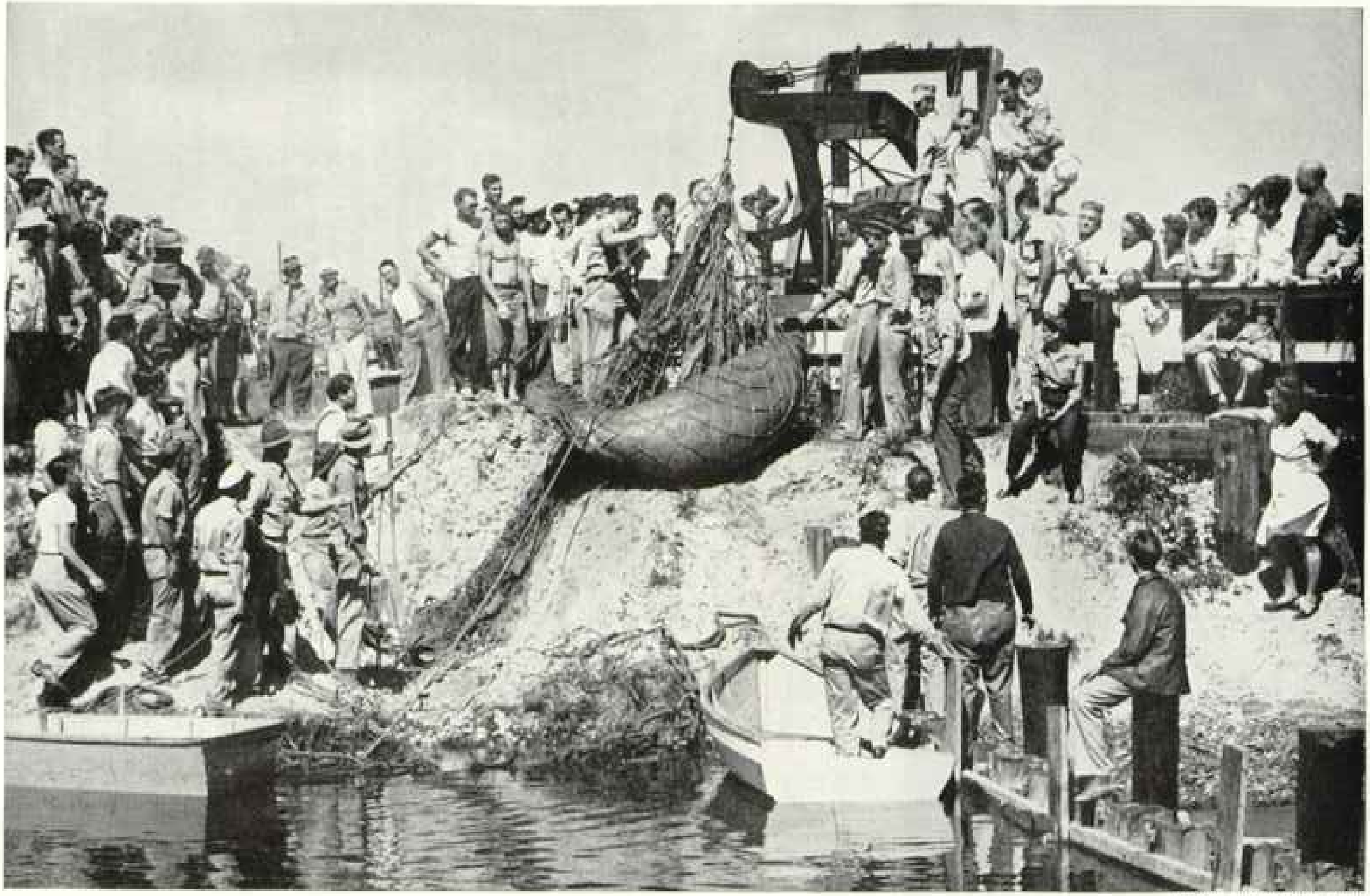
It was not always thus. Natives of the Keys used to kill great whites and salt them down in barrels as food. Then came the



Charles C. Ebbets

Thick as a Feathery Snowfall, Birds Blanket South Florida's Cuthbert Lake Rookery

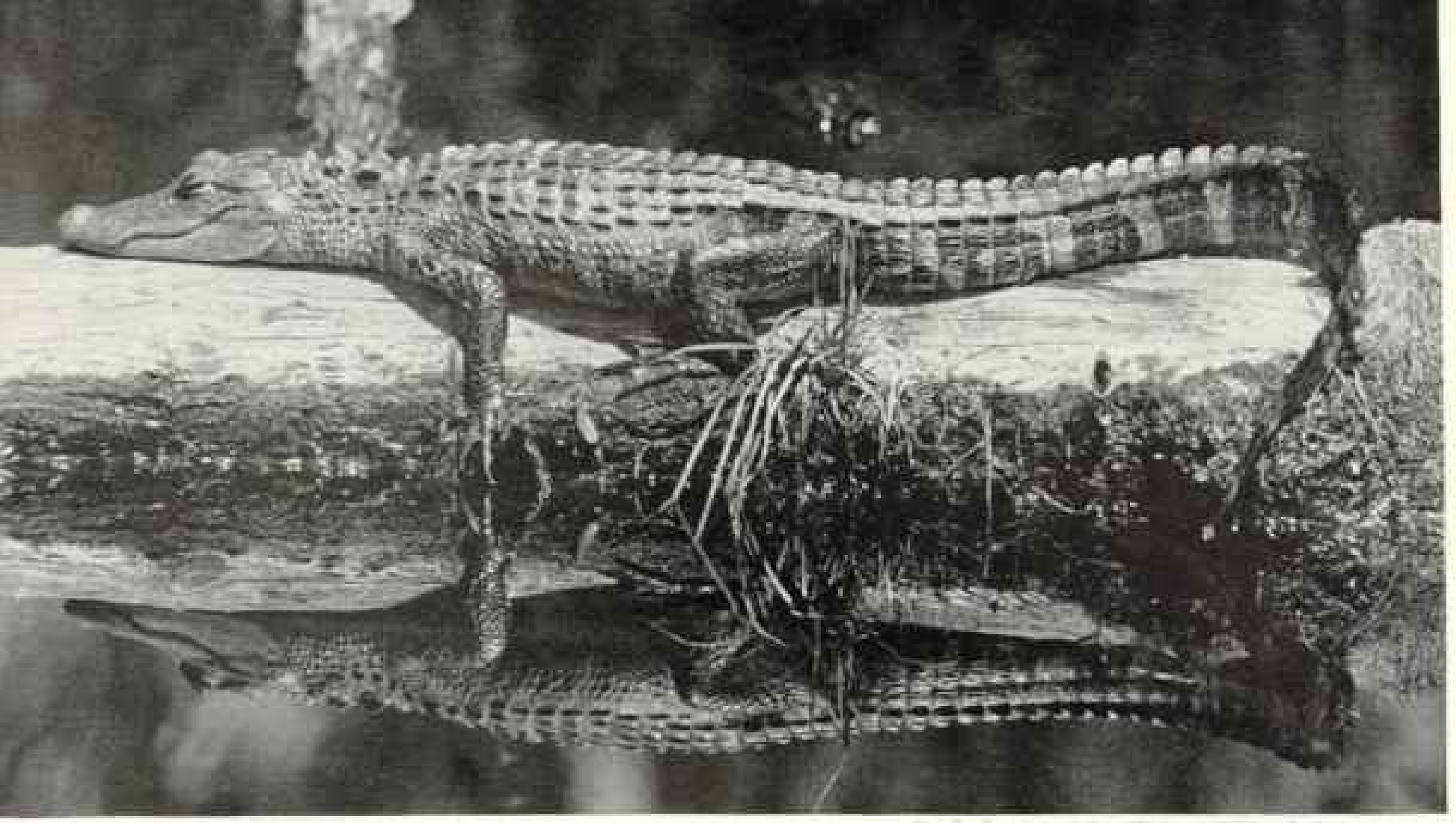
Wood ibis soar on black-tipped wings over the island. With them, aloft and on the ground, are egrets, water turkeys, and cormorants. This nesting ground, one of the largest in Everglades National Wildlife Refuge, once was a favorite haunt of plume hunters.



Bill Kunnel from Miami Herald

Manatee Moving, a Mammoth Rescue Job, Attracts an Audience of 2,500 Kibitzers in Miami

Half-ton mamma and 200-pound calf were trapped in this canal by erection of a flood-control dam. Wildlife rangers, working with boats, net, and crane transferred them from fresh to salt water as the crowd yelled advice. Florida's air-breathing, grass-eating sea cows, once ruthlessly hunted, are protected now (page 106).



Allan D. Cruickshank from National Audubon Society

Daydreaming Alligator, and His Watery Image, Keeps an Eye Half-cocked for Danger

Spaniards named him *el lagarto*, the lizard; Seminoles call him *allapattah*, and eat his tail flesh. Hide hunters, aiming guns at torch-reflecting eyes, almost exterminated the Florida gator (page 94). Crocodilians may often be "grunted up," or called, by making a deep guttural sound like the croaking of a frog. Some—hooked in their dens, "walked" out, and bridled—are taken alive.

disastrous hurricane of 1935 which almost wiped out the Florida Bay section of their range.

Carefully protected, the great white herons are now approaching their original numbers.

Across Florida Bay, along the Gulf of Mexico, lie the sparkling wilderness beaches of Cape Sable, where giant loggerhead turtles come out to nest each summer. Back of the coconut palms along the beaches stretch a hurricane-ravaged mangrove swamp, a lake, and a broad series of salt marshes and ponds where white pelicans (page 99), waterfowl, shore birds, some three hundred roseate spoonbills, and other birds rest and feed.

Part of this area is connected by road with Coot Bay Ranger Station and the "outside world" of Homestead and Miami—in dry weather! The beaches can be reached only by boat.

Where the Tall Mangroves Grow

Farther along the Gulf Coast is Ponce de Leon Bay, the mouth of Shark River and boatway to Whitewater Bay. Mangrove trees grow tall here—red mangrove, white mangrove, black mangrove, and some buttonwood—perhaps taller than anywhere else in the Western Hemisphere.

Fast becoming known as the "giant mangrove forest," the trees form a solid wall along the Gulf for about twelve miles.

Gradually they become smaller as one approaches the commercial fishermen's snug cabins at the mouth of Lostmans River.

Eastern brown pelicans and man-o'-war birds (page 92) are common sights along this mangrove coast. Pelicans raise a spray as they dive into a school of fish; the man-o'-war birds effortlessly soar above, swooping occasionally to pick up fish while on the wing.

Gradually, the coastline begins to become dissected by a series of interlocking mangrove keys known (correctly, too) as the Ten Thousand Islands. Here thousands of white ibis come to roost at Duck Rock during summer months. Flocks of a thousand or more circling high in air are a wonderful sight, the bright flash of red feet and red bill against snow-white body visible at great distances.

Some of the passes through the islands are poorly marked, and an inexperienced boatman who tries them is bound to spend several hours trying to work his way off a marl bank. However, the main channel at Indian Key Pass is well marked.

Once through the islands, a broad bay opens—Chokoloskee Bay—with an ancient Indian shell mound island by the same name in it. The island supports a thriving commercial fishing hamlet which can be reached only by boat.

Beyond, the dredged channel and winding Barron River lead to the picturesque little town of Everglades. It was in this romantic setting that Everglades National Park was dedicated on December 6, 1947, by the President of the United States.

With Uncle Sam and John Bull in Germany

By Frederick Simpich

WHAT are we doing in Germany, with our Army, Air Force, civilian officials and their staffs, and thousands of Germans who work for us?

What are the British and French doing there, with similar forces, in their Occupation Zones?

Why has hard-pressed London already spent, for all purposes, more than two billion dollars, to help Germany and western Europe?

Who gets all the money Uncle Sam is putting up?

I went to Germany to find out, then came home and talked with William H. Draper, Jr., our Under Secretary of the Army (page 118). This is the answer: Uncle Sam and John Bull are working there to get Germany on her feet again. They're there to feed her, keep order, rebuild her industries, increase coal and steel output, set up sound currency, and restore transport and foreign trade, so she can *stay* on her feet.

By the Hague Convention victors in war can't let the vanquished starve. So Uncle Sam and John Bull vote funds to prevent hunger, disease, and unrest in the occupied areas.

These funds are added to by millions from ECA, or the Economic Cooperation Administration. It implements the Marshall Plan, under the general name of European Recovery Program (ERP).

A third source of cash for Bizonia—meaning the American and British occupied areas*—comes from export of goods made by Germans. Only by increasing these exports can the cost of German aid, now borne by British and American taxpayers, be reduced.

Aid to 16 Other Countries

But all this is not just to get Germany off the backs of British and American taxpayers. Infinitely more is involved, including aid to 16 other lands in western Europe.

Weak as she is, Germany just now may be the most important country in the world. The course of history may depend on what happens *in* and *to* her. Particularly is our own destiny, and that of the French and British people, involved. For decades Germany was the heart of western Europe's trade and industry.

Besides aiding Germany, we Allies—and particularly Uncle Sam—are also sending vast sums into other nations, from Denmark south to Greece and Turkey, to help restore their farms, factories, and foreign trade. But all this centers around Germany.

If we do not aid her and her old trading neighbors to cure their ills, that would suit Russia. Then she could push her Soviet way of life west to the Atlantic coast, and hold dominion over all European civilization. To Russia, also, rich Ruhr coal mines and steel works, and Germany's technical "know-how," are of infinite potential aid.

Since German revival is the master key to all west European recovery, feeding her comes first.

Bulk of Food from U. S. A.

Bulk of food comes from the United States. It includes such foods surplus to our needs as potatoes, dried fruits, dried eggs, peanuts, soya-bean flour.

We also send countless tons of bread grains, shiploads of Cuban sugar, whale oil from Japan, dates from Iraq, copra from the Philippines; and one consignment included 12,000,000 gallons of fruit juice for hospitals! Such odd items, too, as 26 tons of frozen pork stomachs and 20 tons of frozen beef livers.

In one recent month more than 100 ships were hauling food to Germany from all over the world.

About 60 percent of all food is shipped in American vessels, to Bremen, Emden, and Hamburg.

From there it goes to storage in scattered warehouses, where Germans receive it for distribution. It is charged against them, on the books, on the theory that some day they may pay for it!

Just now, about $800,000,000 a year is being spent to feed Germany.

We and the British learn, through reports made by Germans to our Military Governments, what kinds of food are most needed, and where.

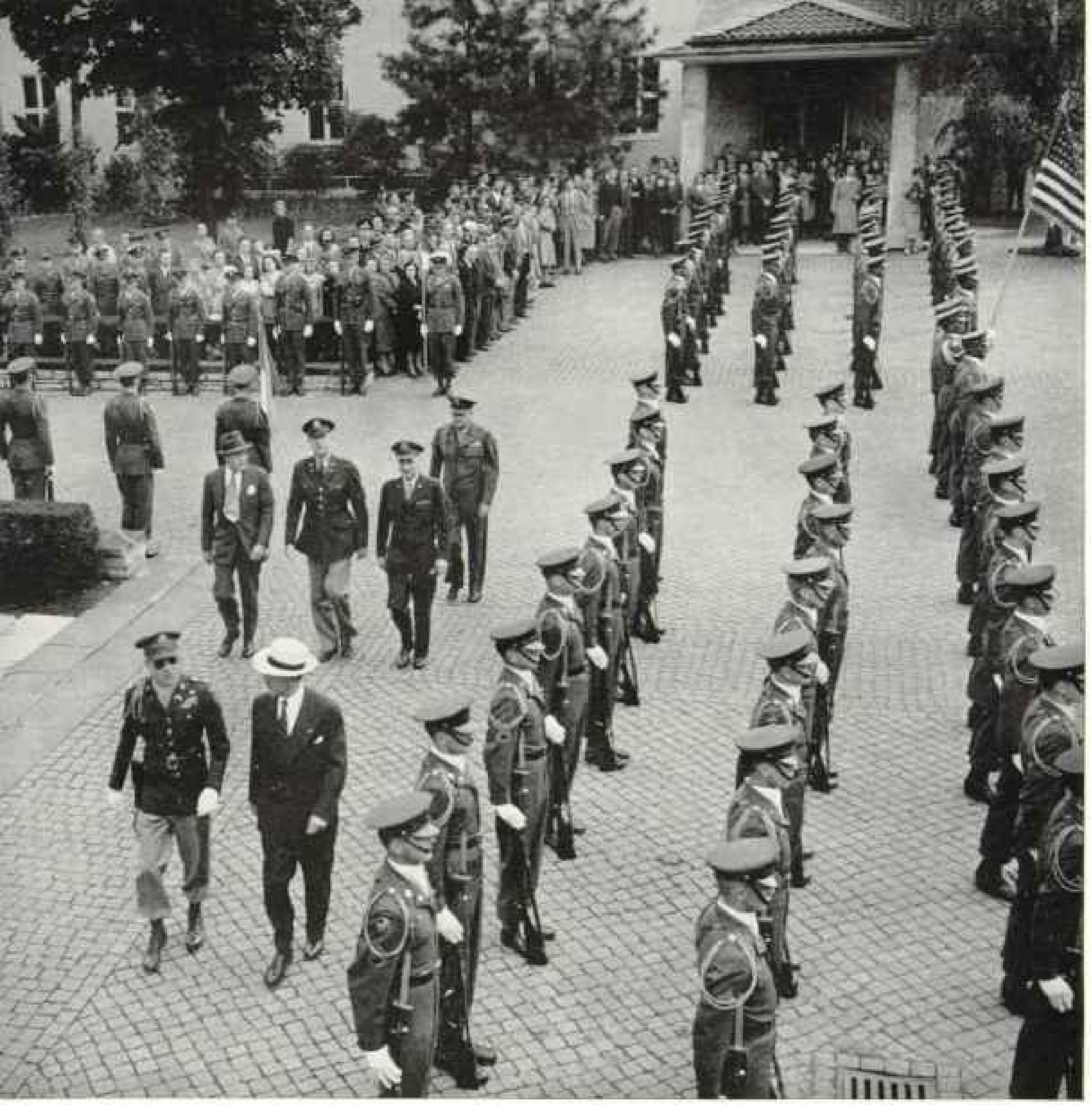
Germans Must Grind Grain

Most bread grain goes over whole. Millers here urge us to send flour, so they can get the job of grinding it.

But Army wants all grain ground in Germany, so she may get the wages for her millers, and retain the bran and mash. Also, this is cheaper than sending flour.

It's the same with cottonseed and soya beans; when the Germans grind them, they

*See "Uncle Sam Bends a Twig in Germany," by Frederick Simpich, National Geographic Magazine, October, 1948, and especially the map on page 532 of that issue.



U. S. Army Signal Corps, Official

Under Secretary William H. Draper, Jr., (Straw Hat) Visits AMG Headquarters, Berlin

In the inspecting party are Gen. Lucius D. Clay, Commander in Chief of United States Forces in Europe, just behind the Under Secretary of the Army, with Lt. Gen. Albert C. Wedemeyer, Deputy Chief of Staff for Plans and Combat Operations, U. S. Army. Besides troops in Berlin, Uncle Sam has military forces throughout his occupation zone in west Germany, chiefly at Wiesbaden, Frankfurt, Heidelberg, Nürnberg, and Munich.

get the oil, as well as by-products.

Tobacco is looked on as second only to food as a morale factor. In one deal Bizonia took $12,000,000 worth of leaf tobacco, or nearly 50,000,000 pounds, from Puerto Rico and the United States, for pipes and cigarettes.

Some local purchases, such as Norwegian herring, are bought in Europe through the office of the Chief of the Food, Agricultural, and Forestry Group of the Bipartite Control Office at Frankfurt.

His staff is part American, part British, with a British Deputy. He told me of his work, to which this narrative must advert.

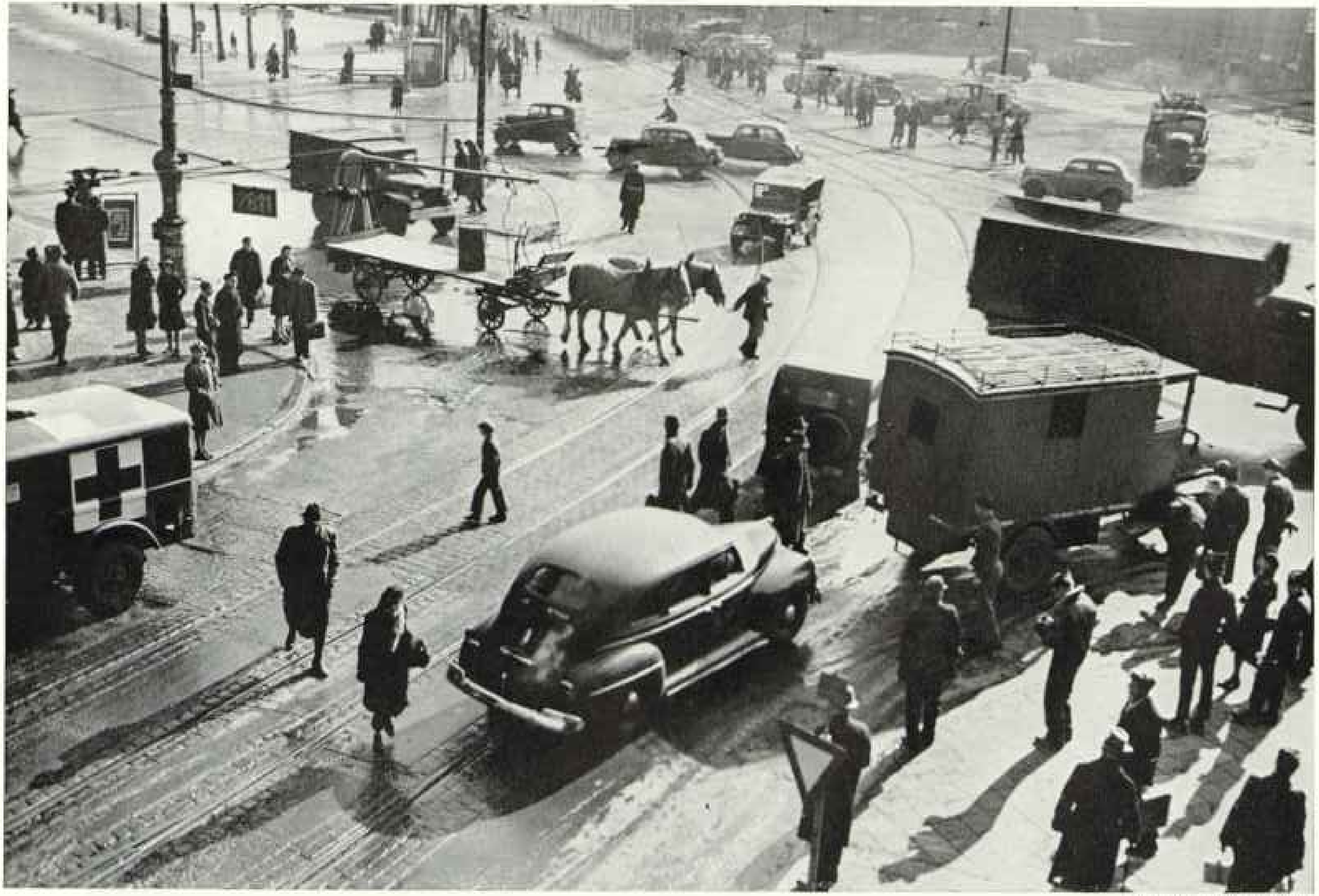
Food Administrator for Occupied Areas now is an Assistant Secretary of our Army. His office is in the Pentagon Building at Washington. He does not buy direct; that is done by the Department of Agriculture and Army's Quartermaster General.

British and Americans Work Together

To keep these agencies from bidding against each other, a "high level" Cabinet food committee decides which foods each agency shall buy. Bread grains, for example, are bought by Agriculture, and lard by the Quartermaster General.

Bumper Grain Crops in 1948 Helped Ease Germany's Bread Shortage

Here two Brandenburg harvest hands pause to watch an RAF airlift plane about to land at near-by Gatow Airport in Berlin. More farm machinery is one of Germany's chief needs. To help her out, the United Kingdom is shipping her farm machines now at the rate of about 270,000 tons a year (page 135).



U. S. Army Signal Corps, Official

American-made Trucks and Motorcars Are Thick at Frankfurt, Now New Financial Center of Germany and Headquarters of JEIA

U. S. Air Force, Official

At Tempelhof Airport, Workers Unload 25 Tons of Flour from a U. S. Air Force Globemaster

Berlin lies within the Soviet Occupation Zone. But the Americans, British, and French have held certain sectors with rights of access by canal, rail, and highway through specified corridors. These the Russians blockaded. In turn, Uncle Sam and John Bull started the now-famous airlift to save Berlin from frost and famine.

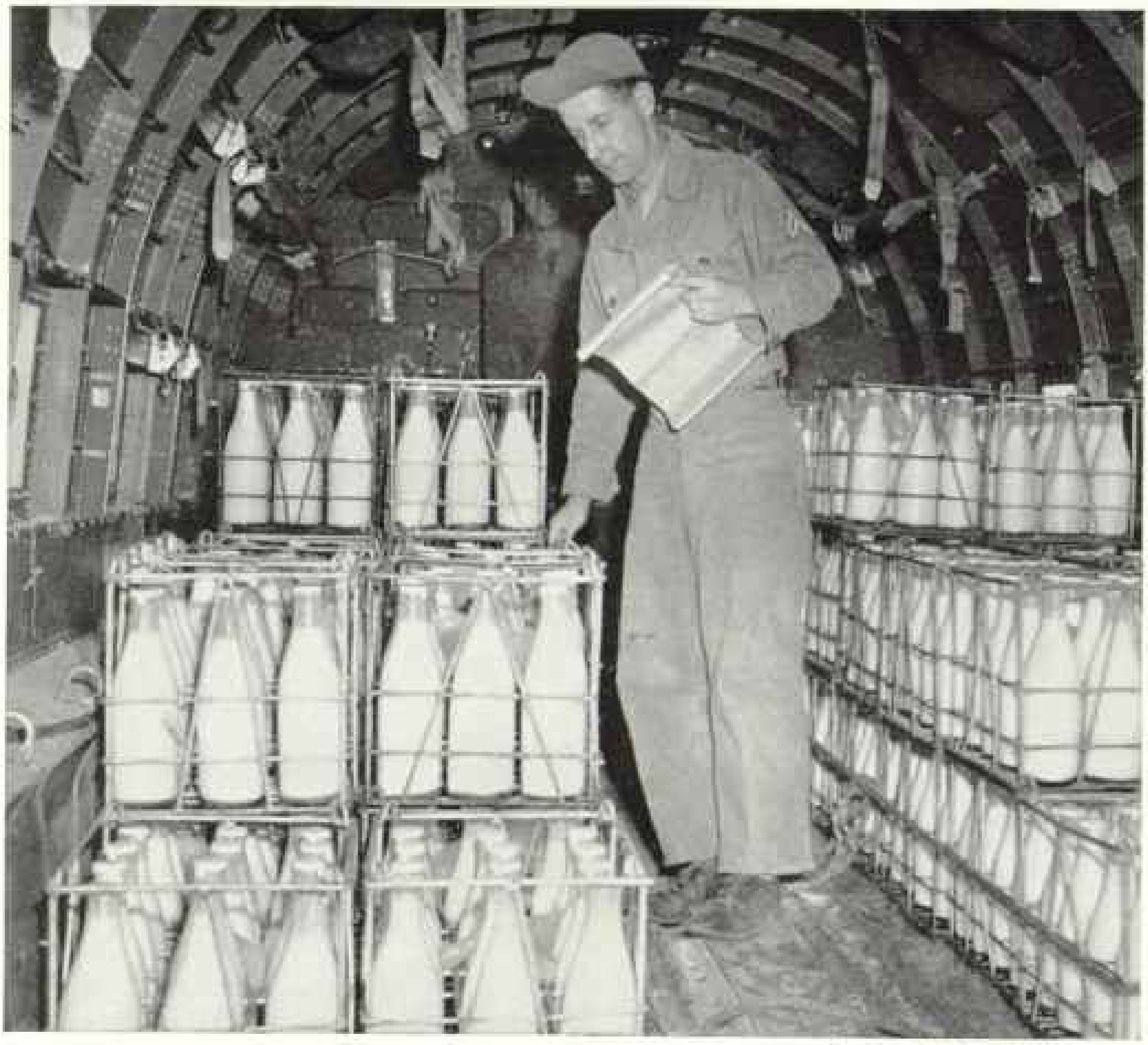


Photo from Joint Export-Import Agency

Now a New Milky Way Appears in German Heavens as Food Flies to Berlin

Here Corp. Arthur Campbell of Berlin, New Hampshire, checks fresh Denmark milk, being flown from Wiesbaden to the old German capital. In all world history, no such strange food shipments ever were made as this airlift. Besides mountains of food, enormous tonnages of coal and medical supplies have also been flown to cold, sick, and hungry Berlin.

In Bizonia the British Military Government works closely with ours. Though the French also occupy a zone, they contribute little food or other help. They can't. But on income from limited exports they are furnishing a ration of from 1,400 to 1,500 calories daily.

What Grocery and Freight Bills!

During the fiscal year 1948 our Army sent in about 55 percent of the food eaten by almost 37,000,000 people in Bizonal Germany, and Berlin. Cost to us and the British was $17.12 per rationed German per annum. Of this sum, $12.97 was borne by the United States alone. What a grocery bill! And what a freight bill, flying all that airlift food and fuel to Berlin!

"Food eaten and work output per man go hand in hand," said Stanley Andrews, our food expert at Frankfurt. "We saw that in the Ruhr mines. When we raised the ration, coal output increased accordingly.

"Germany is still underfed. But with improved world food sources and better German crops, we are getting more supplies.

"From Mexico, for example, we are buying thousands of tons of canned meat, and about 26,000 tons of canned horsemeat from Oregon, Washington, and other points west. Also, nearly 200,000 tons of Maine potatoes!

"Germany's own meat animals are woefully short," added Mr. Andrews. "Germans like pork, but her hogs are at the lowest level in history. You see few cattle. Poultry is confined to scavenger flocks."

National Geographic Photographer J. Baylor Roberts

She Assembles Toy Cruise Ships, Dreaming of a Moonlit Honeymoon on Tropic Seas

Germany was among the first nations in the world to make tin horses on wheels, engines that ran, animals that walked, birds that sang. In such mass production as dolls and electric trains, the U. S. has now passed her, but each year, with the genius of 45-year-old inventors who still have childish minds, she turns out a new toy that startles the toy world (page 136). One was a duck which, when set on an incline, proudly walked down.

Germans like fish, too. In old days special fish trains ran from North Sea ports to big German cities. But her fishing fleet was held as a "war potential and war booty," and so was divided among the victors. We and the British returned that part of our shares which met with the new fishing vessel requirements.

Today the fishing fleet numbers more than 380 vessels, or about half prewar size; but catch per ship is higher. During the fiscal year 1948-1949 the United Kingdom is to send about 270,000 tons of fish, or some £8,000,000 worth, as part of her contribution towards feeding Bizonia.

I asked Mr. Andrews how Russian occupation of eastern Germany affects food problems in Bizonia.

"That makes our job harder," he said. "East Germany was the Nation's breadbasket. Even with it, the Bizonal area had to import about one-third of its food before the war.

"West Germany, where the coal mines and most factories are, always had the biggest food deficit. That area's population is six times denser than ours.

"Also, since war's end, Bizonia's population has increased by 25 percent, owing to arrival of millions expelled from the Sudeten, Pomerania, Silesia, Balkans, and those who fled ahead of invading Russians."

Prewar Germany covered the present four Occupied Zones, and areas east of the Oder and Neisse Rivers now annexed to Poland—and a small part to Russia.

National Geographic Photographer J. Baylor Roberts

Why Shouldn't a Baker's Boy Be Fat—Knee-deep in Fresh Bread!

In a small village near Heidelberg, this man bakes bread for the whole town. While the author was there, he saw women and girls walking in from all directions, bringing pans and crocks of raw dough, all mixed and ready for baking. This big central-oven system saves fuel.

Poles farming there now are not such good planters as Germans were; some farms are idle.

Even if the Poles had a surplus, for reasons of transport and politics they couldn't ship it now to food-deficient western Germany.

Should the West set up her own government —as she hopes to do—and get on her feet, she'll have to import more food than she ever did, unless living standards remain low.

Millions of Pounds of Seed for Germany

Potatoes are more important to Germans than corn is to us, says our seed buyer in the Department of Agriculture.

From one pound of seed, such as turnips, can come around 3,000 pounds of food. So millions of pounds of seeds are being sent to Germany. These include beans, peas, carrots, onions, cucumbers, corn, clover, timothy, vetches, fodder, root crops, grasses—many things. Our seed buyers bag these, ship them to the nearest seaport, where Army picks them up.

In Bizonia's food problem fertilizer is also a big item. Time was when she produced and used huge piles of it, especially potash.

I explored Germany's vast potash mines. In open air above, a wintry blizzard raged. But far down in the mines, whose tunnel walls,

National Geographic Photographer J. Baylor Roberts

West Germany's Once Crack Railway System Slowly Regains Old-time Efficiency

Roadbeds and track are in fair order; but rolling stock is short. Thousands of freight cars and many locomotives were "kidnaped" by Russians, and have not yet been returned. In repair work, "cannibalism" is much practiced; that means robbing one engine or car of good parts to repair another (page 128). Passenger coach windows, where glass was broken, are boarded up. These coal trains are switching at Nürnberg, busy railway center.

National Geographic Photographer J. Baylor Roberts

Stuttgart Window Shoppers Can't Believe Their Eyes

New watches and clocks suddenly appear in show windows, when the new mark—with a fixed buying power—brings long-hidden goods into view. Till the Allies reformed German currency merchants hid their wares, or bartered them in the black market for food from rural sources (page 139).

bright with salt crystals, sparkled in the electric light like fantastic trays of rubies and diamonds, miners were so hot they worked almost naked.

Germany used to export potash, and nitrogen fertilizers made from the air. We bought shiploads of her potash for our cotton fields. To help make a complete fertilizer, she mixed nitrogen and potash materials. She used and exported basic slag—a form of phosphate—from her steel mills.

But she's short now, because many of her potash mines are in Russian hands, her nitrogen plants were bombed, and slag is short.

All Europe Needs the Ruhr

Though lack of skilled labor, coal, and transport slow down her fertilizer factories, her yield now is about 70 percent of capacity. Needed coal, of course, comes from the Ruhr.

The Ruhr has been the key area to European prosperity for nearly fifty years. Today it's top subject in all talks about European recovery.

Future Ruhr events will fix the date when American and British taxpayers can stop pouring billions into the Marshall Plan.

This Ruhr is not a political subdivision, as are Hesse or Bavaria, but takes its name from the Ruhr River that flows through it.

It's an area of some 2,500 square miles, or nearly the size of Delaware, along the lower stretch of the Rhine, underlaid by rich coal deposits. Its population is among the world's densest. Near its center are the famous mine and factory towns of Essen and Dortmund.

Krupp's giant gun works were here (page 132). In his palatial home—with sumptuous picture galleries and ornate ballroom, and bathrooms with tubs big enough to bathe elephants—I found the US/UK Coal Control Group hard at work.

Thanks to the know-how of expert British and American coal mine managers, coal output

U. S. Air Force, Official

Using Toy Planes, Children Show How Allied Airlift Brings Food and Fuel to Berlin

These children live near Tempelhof Airport, where, every three or four minutes the clock around, USAF and RAF planes land to unload vital supplies. They call their game "Luftbrüecke," or "air bridge." Fuel as well as food is flown in.

is steadily rising. Before the war, that output was close to 400,000 tons a day. By mid-1948 it was close to 300,000 tons.

Around the Rühr's edges are such industrial cities as Duisburg, Düsseldorf, Wuppertal, Remscheid, and Solingen of fine-steel fame.

Two-thirds of Germany's prewar steel was produced here, because here is her best coking coal.

But to meet her own needs, and those of the 16 nations who get aid under the Marshall Plan and who used to buy from her, Germany must produce a lot more.

Steelmaking had almost ceased by the time the Allies took the Ruhr. This business was slower to revive than coal mining, because steelworkers didn't get such incentives as extra food.

Also, the Allies—for security reasons—ordered output held down to 11 million tons a year. Actually, because of lack of food, coal, and wartime damage to mills, production has been far below this legal limit. In 1947 only 4 million tons were made. But in July, 1948, the mills were making steel at the rate of 517,000 tons a month, or 6 million tons a year.

This is a new postwar record, and is several months ahead of the target date.

Bizonia's Industrial Progress

In general, Under Secretary of the Army Draper told me, the past few months have seen the real beginnings of Bizonia's industrial revival.

In 1947, factory output was only 40 percent of prewar. By August, 1948, it was 66 percent, and now the gap is steadily closing. Mr. Draper explains this rise as due to three main reasons: Bizonia's improving food position, currency reform, and increased supplies of needed raw materials.

Since the whole European Recovery Plan hangs on what happens in the Ruhr, the

National Geographic Photographer J. Baylor Roberts

Like a Phoenix from the Ashes, Once Industrial Stuttgart Rises Again

War's furies left this important Württemberg city shaken to pieces as if by an awful earthquake. Human bones are still found, mixed with its rubble, as cleanup and reconstruction gather speed. In this shopping area many stores still under repair are occupied only on the ground floors. How Germans love brief cases!

United States, England, and France agreed as follows:

The Ruhr will remain a part of Germany politically.

Its economic life will be supervised by control agents from several countries.

Transport Slowly Improves

This is to ensure that the Ruhr will never again be used as the arsenal of an aggressor, and to guarantee that its products will be available to all lands in western Europe.

One of the best trains I rode is the "Main-Seiner," overnight express between Frankfurt and Paris. But its *wagons-lits* are shabby compared to what they used to be.

Railway tracks are in fair repair. But locomotives and cars are short, and many are in bad shape. "Cannibalism" is much practiced; that means taking parts from machines in bad repair, and putting these on the better rolling stock (pages 125 and 132).

Thousands of engines and cars got into Russian-occupied territory and Germany can't get them all back. Windows in many third-class coaches are boarded up, to keep out rain and snow.

Scarce streetcars and buses are packed. Many people walk hours to and from work; thousands use bicycles (page 136). One bike

rider said, "I had an awful time for months; I had to use rope for tires. Now I've got new rubber tires, and getting to work is easier."

Most Rhine bridges were wrecked in the war. One new one, built by Americans at Cologne, is the Patton Bridge. It was so blocked with traffic the day we crossed that police took an hour to clear it.

Mixed in the jam were buses from Sweden, loaded with singing, skylarking tourists bound for Paris.

All across Germany we saw big trucks, running between Scandinavia and Czechoslovakia, loaded with I know not what. They were sealed. Some bore flags, or other markings, showing they came from Belgium, Denmark, the Netherlands.

American military traffic cops patrol the roads in our Zone, stopping at wayside snack bars, run by our Army, for coffee and doughnuts. Our Army and Air Force vehicles, like those of the British, are numerous; Germans drive many old trucks, pariahs from military services (page 120).

Wide World

A Vilbel Bank Clerk Builds Himself a House of Mud Blocks

Germany, like the U. S. A., suffers from a housing shortage, but she's worse off because bombing planes wrecked thousands of homes. Being short of stone, brick, and lumber, some Germans erect houses in Mexican adobe style.

A few Germans ride in the low-fuel-burning "Folks Wagons," a tiny German car that is safe and fast (page 139). These cars are being exported to Switzerland, Sweden, the Low Countries, and even India, bringing in foreign exchange for the German economy.

Those famous autobahns, built by Hitler, detour about the cities and afford smooth, level, fast driving over long distances. Their overpasses and bridges, mostly wrecked by Germans retreating before our invaders, are being slowly repaired.

Though tugs and barges sunk by Allied bombs line the banks of the Rhine, river traffic is increasing. Armed with refreshments I felt they'd like, I fell in with two veteran Rhine pilots, and made a trip with them. One had been a Rhine pilot for 26 years.

They said it now takes 160 pilots to handle the 40 or 50 tows which daily move upstream carrying coal, and the same number which move downstream with lumber, fertilizer, stone, iron ore, and other bulk things.

Excursion Steamers on the Rhine

The Dutch, the pilots said, again run excursion steamers up the Rhine, and when they pass you see people dancing, or singing on deck in the moonlight, as it was in the "good old peacetimes."

Railroads parallel the Rhine on both sides.

Mrs. H. V. Kaltenborn

Buttons! Ribbons! Berlin Sees Its First New Ones in Many Years

Women shoppers crowd street markets to inspect and finger these long-needed items. In Frankfurt the author lately found buttons, needles, and thread so scarce that he had to appeal to the U. S. Army's Post Exchange when he lost a button off his pants!

Presse-Bild-Z, Illustrations-Bureau Hamburg

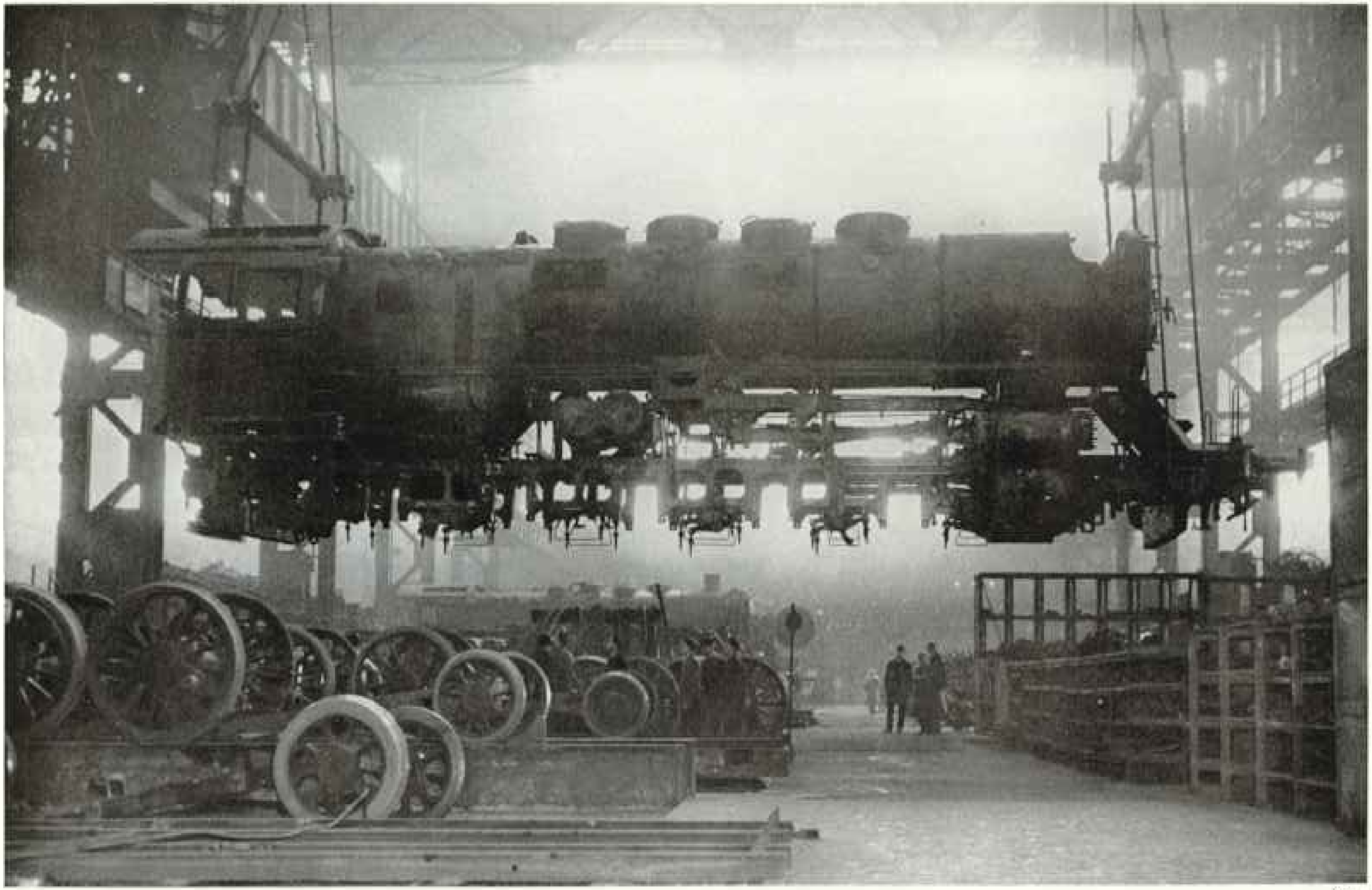
Boisterous Hamburg Shipyard Workers Listen to a Funny Story

These men, with dockhands and stevedores, form a close-knit unit among German workers.

OWI.

At Rotterdam Black Forest Lumber Is Moved from Rhine Barge to Ship to England

Fly over west Germany, especially Bavaria, and you look down on blocks of planted forests of different age and size. Prewar forestry in Germany cut only 100 percent of growth. Now cutting is about 200 percent to meet Allied demands. German foresters hope that this excessive cutting may soon be reduced.



Acme

Once Essen's Krupp Works Made Cannon for Many Parts of the World. Now They Repair Sick Locomotives

German-made locomotives once pulled trains across plains and mountains from the Orient to Latin America. When a Hannover factory launched a new one, it was like launching a ship. Flags and evergreen boughs decked it; bands played. The author rode one which, on a straight track, clocked 100 miles an hour.

Byers from Joint Export-Import Agency

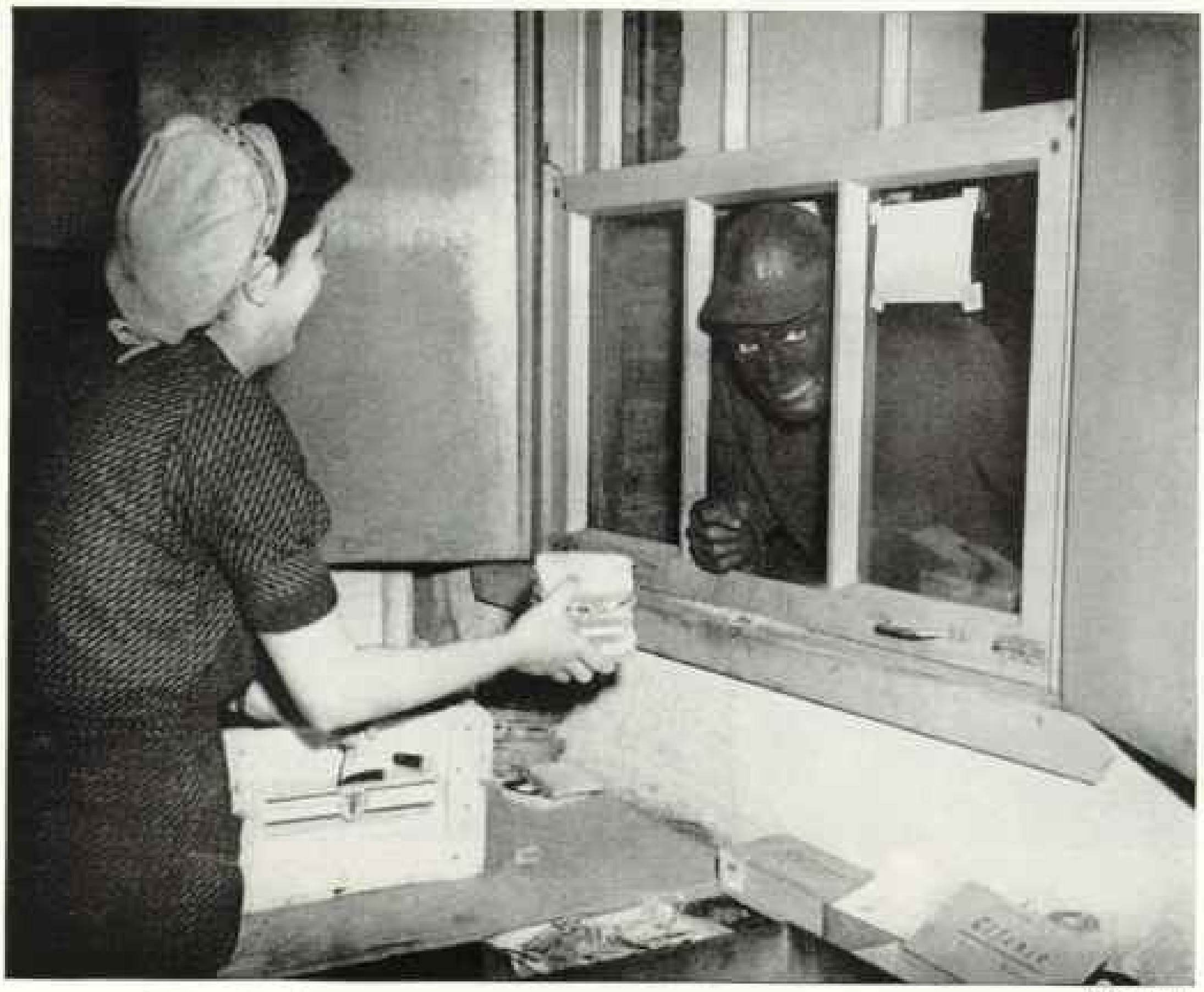
Frozen "Duks" for Diners at German Hotels Operated by JEIA

Yes, John Bull and Uncle Sam are also hotelkeepers. This Joint Export-Import Agency operates a dozen or more big hotels, to insure food and lodging for visiting businessmen and tourists. Much fish, fruit, and poultry comes from this Heidelberg cold-storage plant.

Acme

She Couldn't Look Any Happier in Golden Slippers

She shovels coal barefoot; shoes are scarce. Soft or "brown coal" is stripped from open pits in Russian-held Prussia. When exhausted, and later filled with rain water, such abandoned mines form long, narrow lakes resembling sections of some ancient, forgotten canal. This woman works near Senftenberg.



Wide World

He's a Coal Miner—Not a Blackface Made Up for a Minstrel Show

Germany's urgent need has been more coal. To encourage miners to work harder, the Allies gave them extra food, more daily calories than were given to steelworkers, or railroad crews. Coal output grew in proportion to increased supplies. Now coal output steadily approaches prewar tonnage.

I saw a steady stream of freight trains. The pilots said about 120 freight trains a day run up and down the Rhine banks.

All along the Rhine I saw vineyard workers spraying the vines, or digging about their roots. But wine merchants told me the French are buying and shipping most German Rhine wine to Paris, and turning it into alcohol for use in lotions and perfumery. This, they said, gives Paris cheap alcohol—and removes German wine as a competitor!

Country roads reveal strange sights. A cow may be hitched with a horse. When we tried to photograph such a pair, the driver got mad.

England Tightens Her Belt to Help

You see women, and children, too, pulling tiny wagons along country roads, loaded with manure, or firewood. One woman I saw hauling her old stove and a clock into the country, hoping to trade them for a rabbit, a pig leg, some eggs, or a bucket of butter.

Nothing shows shifts in commercial geography more than England's overseas trade gains, through the so-called "sterling block," as it aids German and western European rehabilitation.

One result of ERP, says Sir Stafford Cripps, British Chancellor of the Exchequer, was the United Kingdom's ability to resume coal exports.

"Our geographical situation," said the Chancellor in a speech before the National Press Club in Washington, "makes us very sensitive to the dangers and hopes of western European democracy."

Sir Stafford pointed out that Britain would jeopardize her own recovery if she didn't cooperate with Germany and western Europe. She was able to start that task through aid she herself gets from ERP, and by rebuilding her own exports.

"Our people could make and admire our high-class production," he said, "but they

Wide World

Instead of Flowers This Berlin Hausfrau Grows Tomato Plants on Her Window Sills

Inside her flat, despite extraneous matter and animal odors, she also raises rabbits and chickens. In nearly every square inch of bombed-out areas, Berliners cultivate gardens to produce food.

couldn't buy it; it was marked 'For Export Only.' "

People stopped private motoring, in the United Kingdom, to help it supply oil to nations sharing in ERP's program.

To help restore German and west European farms and factories John Bull now sends them machinery at the rate of almost 270,000 tons a year (page 119). Germany pays for none of this.

Britain also helps solve Germany's "DP" or Displaced Persons problem. As this is written, nearly 200,000 such workers have been settled in the United Kingdom, while 79,000 free volunteers have come from Europe. They are given work on the same terms as native Britons, and may become naturalized. Uncle Sam plans to increase his take of DP's.

Despite her own food shortage, Britain began right after VE Day to help Germany and her neighbors. That's her policy, still. Sir Stafford says: "All the efforts that both your country and mine had made in those early postwar days would have been thrown away—and the chaos beloved of Communists would have supervened in Europe—had it not been for the great conception of ERP. . . .

"The future of the world and nothing less is at stake in this first essay at international control of another's economic affairs by 16 widely different Governments. . . .

"It is the firm intention of the U.K. to reach viability by 1952, at whatever standard of living for our people we can attain, and by our help to encourage other European countries to do the same."

Growing Foreign Trade Boosts German Production

By 1952, Germany, too, if there's no war, should be on her feet, and off our backs. That opinion is widely held by men high in our Military Government.

Till you visit Germany yourself, and look about, you can't even imagine how fast she's recovering.

Adolph C. Rivera

Like Spiders in Their Webs, These Frankfurt Germans Weave Spokes into Wheels for Adler Bicycles

Arabs ride camels; Mexicans ride burros; Polynesians ride canoes—but Germans, by thousands, ride bicycles. Also, they export them to the ends of the earth. When rubber was short, German workers who had to pedal hours to their distant jobs used ropes for tires (page 129).

Goods marked "Made in Germany" are on the move again. Some are even marked "Made in U. S. Zone, Germany."

I saw buyers from one New York store ordering fancy leather handbags; their toy buyers were in Nürnberg, after dolls, miniature steam engines, electric trains—and there was a tricky little automobile that opens its own garage doors and darts out when you pick up a tiny telephone and order it to "Come out!"

German Workers Trained in Precision

Said a foreign buyer for another big New York department store, "German workmen have been trained for generations to be precise in all their operations. Their 'goose step' is one of their good qualities when intelligently applied. That same precision enables them to turn out uniform merchandise we like, the exact way we ask for it.

"To some people the voice of a common cuckoo clock may be hoarse, unmusical, like a train announcer's calls in a big waiting room. But if we should ask the Germans to make us a special cuckoo clock to croon like Bing Crosby or Frank Sinatra, they would do it.

"We're buying goods now from Germany, including certain toys. But since America's progress in mass production, Germany is no longer doll and toy maker for the world. But with her inventive mind and fine workmanship she's still far ahead with ingenious and novel toys (page 123).

"We make wonderful glass, mechanically, but Germans specialize in hand-blown and hand-cut ware. They excel, too, in harmonicas, gloves of fabric and kidskins—and if the Chemnitz area is liberated from the Russians, they'll come back in the fur-felt hat business.

"Our purchases from Germany are steadily increasing. We place orders with them which are acceptable to the Military Governments, and against which they obtain needed raw materials."

War shut Germany off for years from her once enormous overseas trade, but now her salesmen are abroad again, figuratively ringing the doorbells of the world, taking orders—and spotting needed raw materials.

German salesmen seek to give a customer just what he wants. As a cub reporter on Shanghai's *North-China Daily News* I was once sent to tail a dapper, white-ducked German salesman who rode a ricksha about that salty seaport's redolent old walled city, and get a story on how he worked to flood the market with German-made tools, lanterns, and alarm clocks.

His sample alarm clocks' faces were owls' faces, with big eyes that rolled back and forth in time with the ticking seconds.

"Why those silly goo-goo eyes—they make me dizzy," I said.

"We make 'em that way because the Chinese like 'em," he grinned. "I was in Peking, after the Allies took it in the Boxer War. In the old Empress Dowager's palace bedroom they found more than 60 of our owl-face clocks, each keeping a different time!"

I remember when fancy-patterned German calico nearly drove the more conservatively designed American and British piece goods out of the Manila market, because the Germans offered a cheap, loud style showing two red game roosters in mortal combat, with feathers flying. (Cockfighting is a historic Filipino sport.)

Making Machetes for Cuba

So it goes: Germans don't use machetes, but they make 'em for the Cubans. They don't use that awkward, two-man, up-and-down saw for ripping boards from logs, but the Orient does, and so Germany makes them.

There's tobacco in Greece and Turkey that Germany wants. So if the Greeks and Turks want a light, three-wheeled truck, with only one wheel in front, Germany will supply it.

Lately, Singapore took 20,000 bicycle lamps, because she likes the German type, and Denmark took 5,000 bicycles. France takes miles of German textiles.

Cologne's Ford Motor Works exports the four-cylinder "Taunus" passenger car, and Bavaria sells abroad millions of dollars' worth of factory products, from china dinner sets to Diesel engines.

Vacuum cleaners, motor scooters, optical goods, cameras, costume jewelry, silverware, fine wool work, typewriters, all now move abroad.

Uruguay, we read, sends in more than $10,000,000 worth of hides, skins, wool, oils, and canned meat and buys German electrical equipment and farm machines, and Frankfurt-made "Torpedo" typewriters are back in circulation.

Allies Take Over Making of Dyes

German dyes once colored everything from Park Avenue frocks to Chinese shirttails, and the world bought Krupp's cannon. But now cannon making is "kaput" and the Allies have a strangle hold on all dye works, lest they might also make explosives.

To date, German foreign trade is supervised by a Joint Export-Import Agency known as JEIA. Its present Director General is an American, formerly a New York banker.

JEIA licenses exports and arranges the procurement of foreign raw materials needed by German factories, from cotton, flax, wool, and hemp to rubber, paper pulp, hides, metals, minerals, and chemical substances—scores and scores of things.

It guides exports to markets abroad where German products may best be sold, and collects for them in the money of the country that buys them.

On the import side, JEIA consults with German officials and businessmen, as to what raw materials and foreign goods are most needed, where they can best be bought, and at what prices.

Should JEIA let every German trader do his own exporting, uncontrolled, and collect for them himself and keep all the foreign currency he got, there wouldn't be enough foreign money on hand to pay for needed foreign raw materials.

This is true because many German factories sell all their output inside Germany.

Take a shoe factory. It needs shiploads of hides, say from Argentina, but it sells all the shoes it makes in Germany, and so never gets hold of any Argentine pesos with which to buy more hides.

Why West Germany's New Mark Booms Her Trade

Though west Germany's currency system has been "reformed," the new mark is meant for use only in Germany, and no German is

White World

For 35 Years Elsbeth Freytag Has Painted Fish on Plates

She works in a historic factory at Meissen. This old Saxon city on the Elbe, founded in 920, has been the seat of Dresden-china manufacture since 1710.

Adolph C. Weiss

To Violinmakers Every Instrument Is a Labor of Love

To delicate-fingered artists in tiny Mittenwald, Bavaria, each violin has its own tone, lines, and character. Since the new currency reform Bavaria's output of stringed instruments, also cuckoo clocks, has increased.

Adolph E. Brun

In the Popular "Folks Wagon" the Motor Sets in the Rear

Hitler's government took orders and collected payments on thousands of small, low-priced cars; but after war came, few were delivered. They're tough, fast, and go far on surprisingly little gas (page 129). More small cars for export are now being made at the Opel works, near Frankfurt, by a subsidiary of the General Motors Corporation of the United States.

allowed to have any foreign money in his possession.

It is to meet this situation that JEIA was set up, as an agent of the Military Governments. Since as yet there's no German body that could do it, it is JEIA that controls exports, and collects for them in dollars, pounds, francs, etc.

No step taken by Military Government has helped the internal German economy more than the issue of this new mark. By early 1948 the old Reichsmark was badly depreciated.

Days came when paper money was worth so little that a workman's monthly wage might not equal the cost of a carton of American cigarettes.

So the Allies retired the old mark, and issued a new one, worth the equivalent of 30 U. S. cents, *inside* Germany.

A ceiling of 10 billion marks' circulation was established through the new "Bank of the German States," at Frankfurt, which heads up a German banking system corresponding roughly to our Federal Reserve System. The initial supply of marks was prepared in the United States through arrangements made by our Bureau of Engraving and Printing at Washington.

Till this new mark came, in June last, storekeepers hoarded their goods and farmers bartered their foods on the black market, rather than sell for the fading old marks. Shelves and show windows were almost empty.

But when the new money came, long-hidden goods appeared as if by magic—and imports increased (page 126). This new currency is backed by no gold or silver reserves. But Military Government control holds it firm, *within Germany*. Abroad, it has no fixed value.

Earth's Biggest Investment Banker

Germans, as said, can't collect personally for goods exported, or possess any foreign money; JEIA does this for them. It puts the foreign money it gets for their goods in the bank, and pays the German exporter what's due him—in new marks—at the rate of 30 cents each in our money.

In the same way, it takes funds from its bank accounts, and pays for Germany's needed raw materials from abroad, in the currency of the foreign country from which they come. These it *sells* to the appropriate German importer, be he a hide, cotton or copper user, and collects from him—again in marks, at the 30-cent rate.

Meantime, what a colossal job for JEIA bookkeepers! What bewildering calculations in foreign exchange, as daily quotations may change among pounds, dollars, fluctuating francs, Mexican pesos, guilders, kroner—maybe even Turkish piasters and Chinese taels!

The Economic Cooperation Administration is managed by Paul G. Hoffman, on leave from the presidency of the Studebaker Corporation.

ECA runs the Marshall Plan, as said. To keep it going Congress voted $5,055,000,000. Of this, 80 percent is for grants and 20 percent for loans.

In 1948 ECA allotted in grant money $3,549,000,000 to western Germany and other countries, including Austria, Belgium, Denmark, Trieste, France, Greece, Iceland, Eire, Italy, Netherlands, Norway, and the United Kingdom.

Greece, for example, in 1948 was allotted $162,000,000 as a grant with which to obtain recovery goods, including foods and industrial items. Part of these funds was to carry on reconstruction of railroads, bridges, highways, and power lines damaged in the war.

Italy got an allotment of $541,000,000 in grant money for food and industrial items.

Turkey got a loan allotment of $30,000,000.

ECA money is not to be used for any military purpose. It is meant only to help restore trade and industry.

Avoid Suspicion of "Carpetbagging"

To date, Uncle Sam and John Bull frown on their people making private investments in Bizonia, lest they be called "carpetbaggers." This avoids any appearance of such private exploitation.

Like us, the British have thousands of their troops here, with their field artillery, airplanes, and military bases. Here, too, are their civilian officials and their staffs, employing hordes of Germans.

With their wives and children, fair-sized British colonies have grown up in Hamburg, Bremen, Hannover, Cologne, Essen, and other cities in the British Zone. Pleasant social relations are enjoyed between British and American families, especially at industrial centers such as Essen, where a miniature "English-Speaking Union" exists among families of the US/UK Coal Control Group. Dinners, dances, movies, and card parties are a happy surcease from the ardors of the hard, daily drive to mine more coal.

An Amazing Office Building

Many British also serve on such joint agencies as the busy JEIA, which sits in the vast I. G. Farben office building at Frankfurt, with vertical escalators which run straight up and down like the endless bucket chain on a cistern pump.

This building is one of the world's architectural wonders. Apparently, the Allied bombers, looking to the future, left it intact and ready for postwar use as a giant military and civilian headquarters.

Working in harmony, complex and difficult as problems are, the two Military Governments are restoring postal, telegraph, freight, passenger, banking, and other services. As fast as they can, efficiently, they turn over to the Germans themselves the job of running their country.

In October last the French merged their zonal trade with that of Uncle Sam and John Bull, and now their agents also sit on the board of JEIA. This vastly aids in building up western Germany for an active role in the European Recovery Program.

As this is written, a constitution is being drafted at Bonn, by the Germans, planned to fuse the present trizonal government into a complete "new west" German State—thus making significant changes in the old map of Europe.

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ORGANIZED FOR "THE INCREASE AND DIFFUSION OF GEOGRAPHIC KNOWLEDGE"

To carry out the purposes for which it was founded sixty-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 The Magazine uses, generous remuneration is made.

In addition to the editorial and photographic surveys constantly being made, The Society has sponsored more than 100 scientific expeditions, some of which required years of field work to achieve their objectives.

The Society's notable expeditions have pushed back the historic horizons of the southwestern United States to a period nearly eight centuries before Columbus crossed the Atlantic. By dating the ruins of the vast communal dwellings in that region, The Society's researches solved secrets that had puzzled historians for three hundred years.

In Mexico, The Society and the Smithsonian Institution, January 16, 1939, discovered the oldest work of man in the Americas for which we have a date. This slab of stone is engraved in Mayan characters with a date which means November 4, 291 B. C. (Spinden Correlation). It antedates by 200 years anything heretofore dated in America, and reveals a great center of early American culture, previously unknown.

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 the world altitude record of 72,395 feet. Capt. Albert W. Stevens and Capt. Orvil A. Anderson took aloft in the gondola nearly a ton of scientific instruments, and obtained results of extraordinary value.

The National Geographic Society-U. S. Army Air Forces Expedition, from a camp in southern Brazil, photographed and observed the solar eclipse of 1947. This was the seventh expedition of The Society to observe a total eclipse of the sun.

The Society cooperated with Dr. William Beebe in deep-sea explorations off Bermuda, during which a world record depth of 3,028 feet was attained.

The Society granted $23,000, and in addition $75,000 was given by individual members, to the Government when the congressional appropriation for the purpose was insufficient, and the finest of the giant sequoia trees in the Giant Forest of Sequoia National Park of California were thereby saved for the American people.

One of the world's largest icefields and glacial systems outside the polar regions was discovered in Alaska and Yukon by Bradford Washburn while exploring for The Society and the Harvard Institute of Exploration, 1938.

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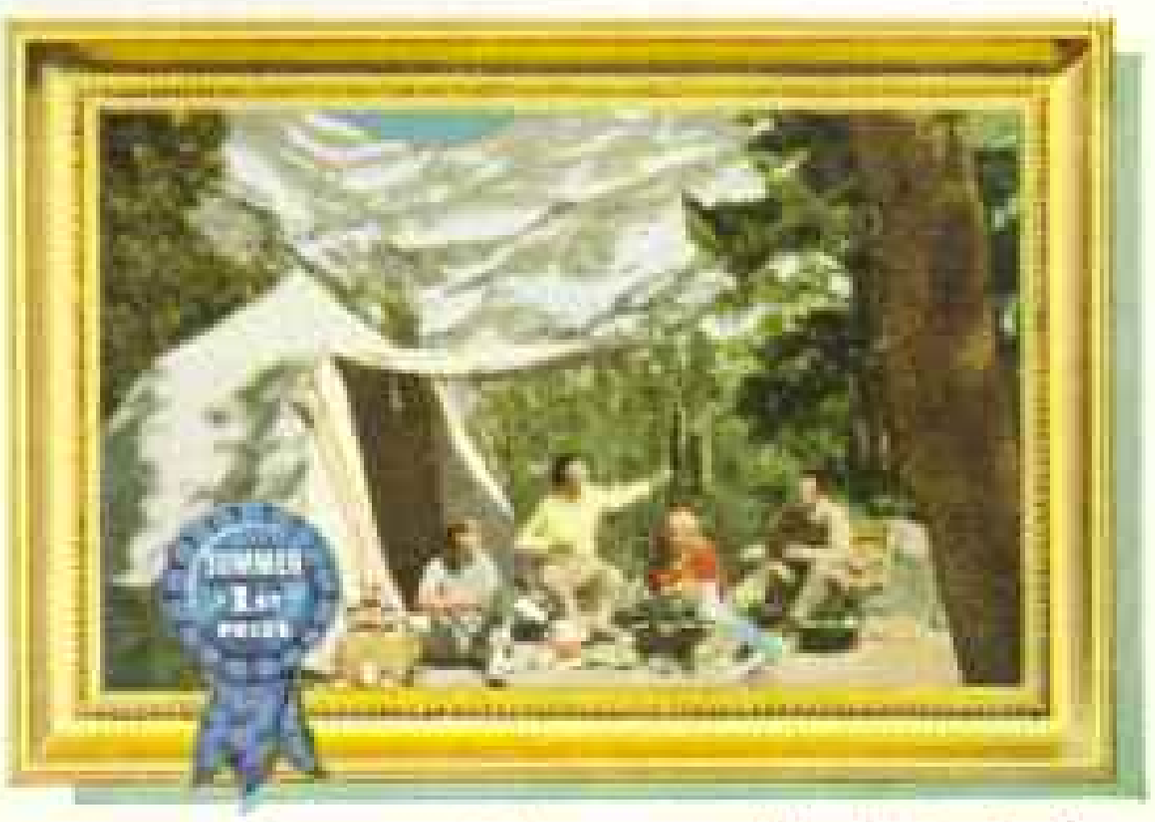

SUMMER—Southern nights are *cool*. And there's the Pacific for swimming, fishing, sailing. You'll enjoy mile-high lakes. Lavish night life in the cities.

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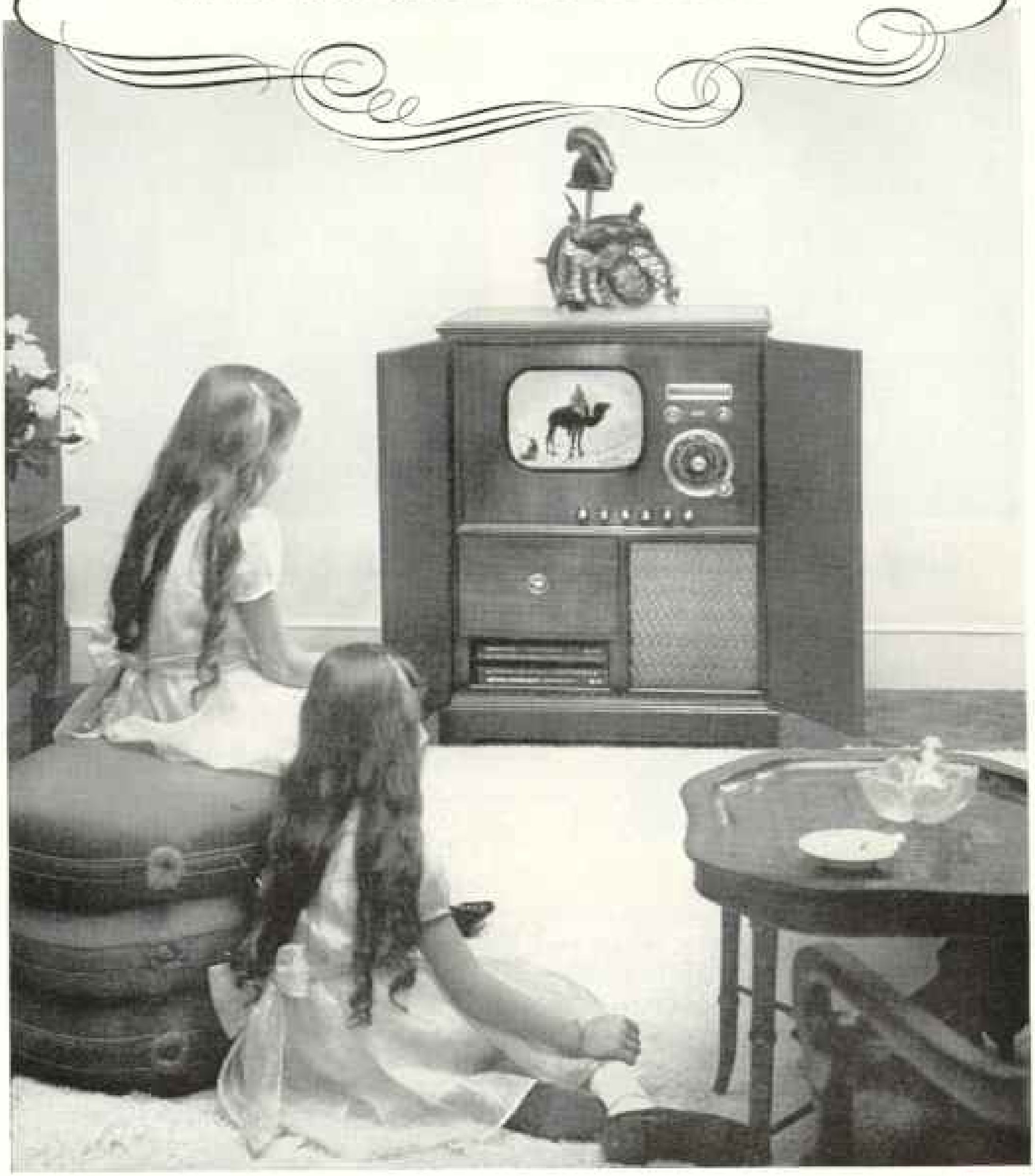

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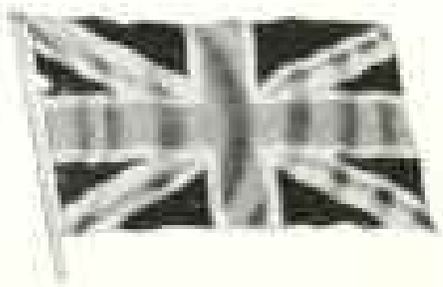

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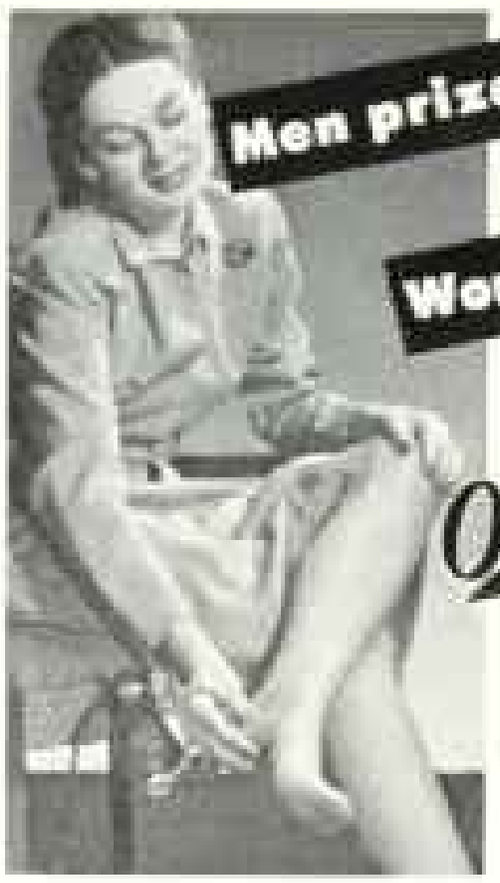

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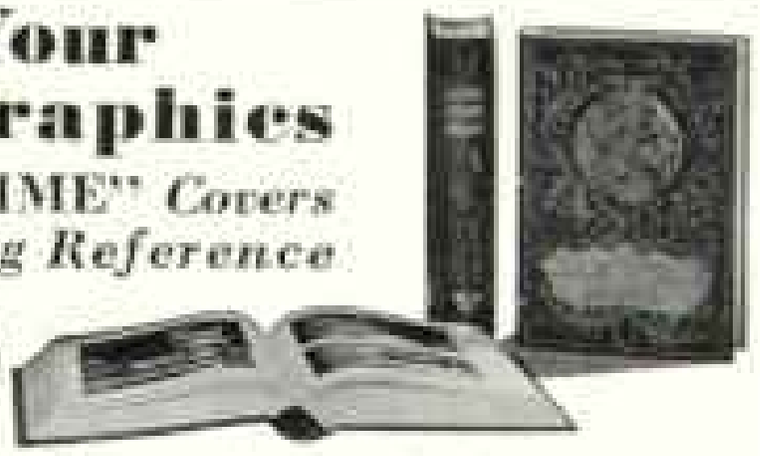

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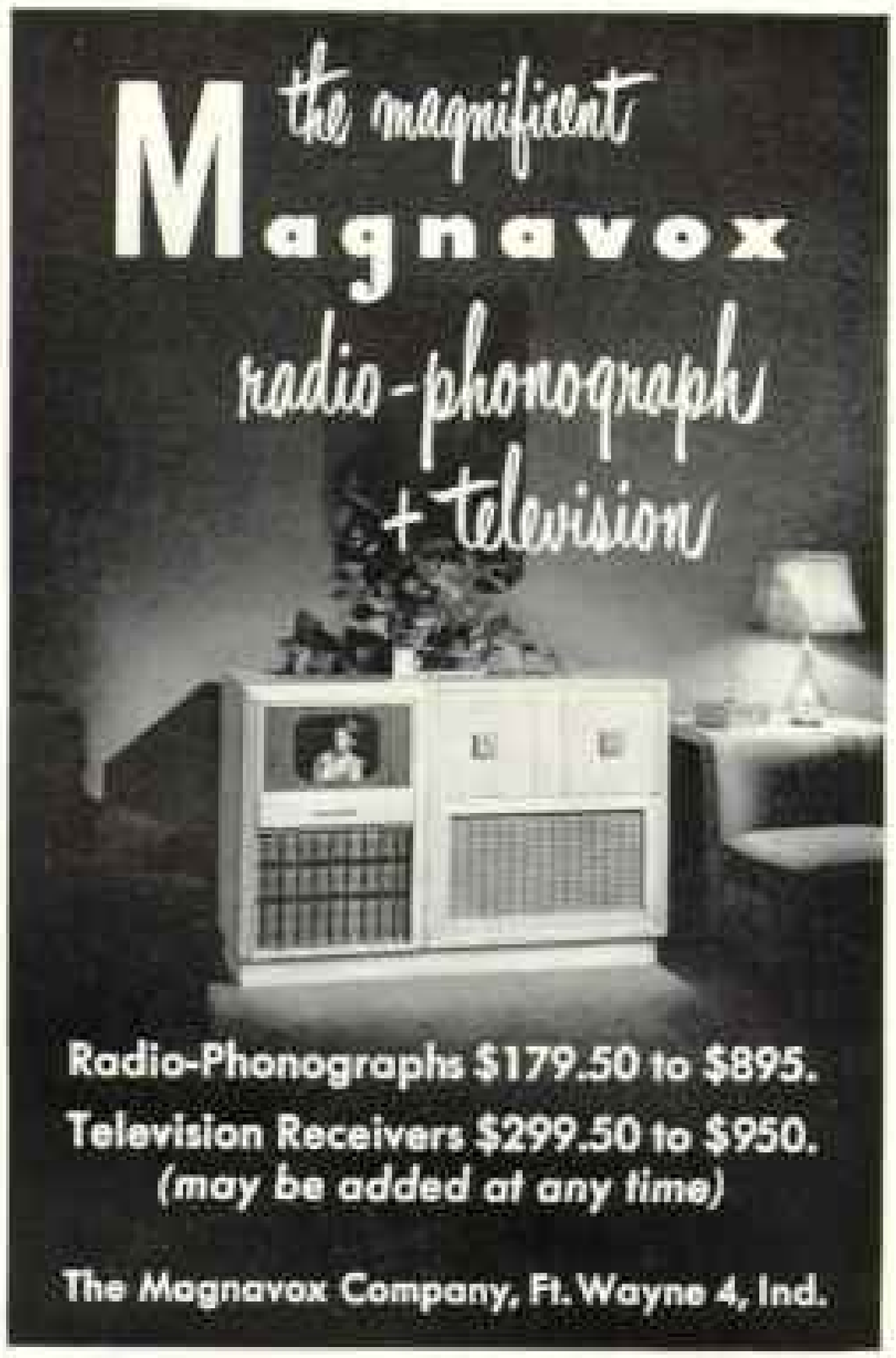

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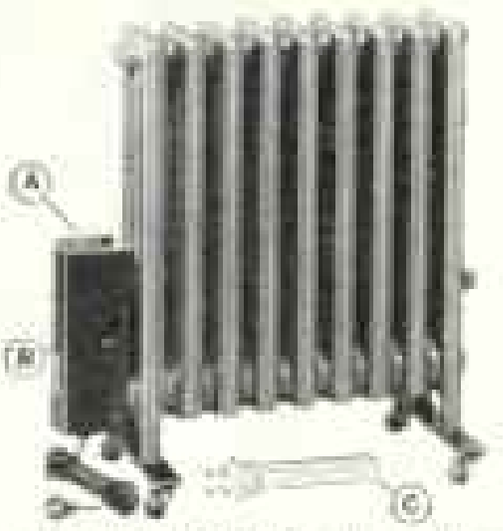

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WATCH OUT FOR WINTER AILMENTS

COLDS should be treated *promptly!* They often occur when body resistance is low, due perhaps to insufficient sleep, lack of fresh air, improper nutrition, or exposure to changes in weather. The cold may lower resistance still further and, if neglected, may lead to influenza, pneumonia or other infections.

INFLUENZA, while more serious than a cold, is not usually dangerous in itself. It may, however, weaken the system and pave the way for other illnesses. Fortunately, there is a new vaccine which has been used with considerable success against certain types of influenza. The doctor may recommend this vaccine if an epidemic threatens, if a person suffers from frequent colds, or if poor physical condition makes influenza a special danger.

PNEUMONIA is still a serious disease that calls for prompt diagnosis and treatment. The sulfa drugs and penicillin are highly effective in most cases, but they must be given early for best results. Your doctor now has a vaccine which provides protection against many of the most common types of pneumonia. One type of this disease, *virus pneumonia*, does not respond to the vaccine, sulfa drugs or penicillin. Although seldom fatal, it should have immediate medical attention.

The best protection against winter ailments is keeping in good physical condition. If you catch a cold, try to get all the rest you can, eat lightly, drink plenty of liquids, and cover your coughs and sneezes so that you will not infect others. For more helpful information about winter ailments, send for Metropolitan's free booklet, 19-N, "Respiratory Diseases."

IF FEVER ACCOMPANIES A COLD, CALL A DOCTOR IMMEDIATELY!

Why the night holds no terror for Tarsius

THE PHILIPPINE TARSIER, *Tarsius carbonarius*, has the largest eyes, in proportion to its body, of any mammal . . . and for a good reason.

Not until the black jungle night closes in on the bamboo thicket where he lives does Tarsius venture forth to find his food. And his night life might be a continuous nightmare of attacks by owls and other preying enemies were it not for his ability to see so well in the dark.

Without moving his tiny body, Tarsius can turn that head of his, with its enormous eyes, so that he can look directly to the rear—almost instantly. And if what he sees alarms him, he can jump six or seven times his length to another bamboo perch and safety.

Owing to these special abilities with which nature has favored him, the tarsier's completely at home as he hunts by night in the bamboo thicket. And truth to tell, he's probably safer in his jungle haunts than you are in your more civilized surroundings.

Tarsius doesn't drive a car on crowded highways. He can't scald himself with hot water or trip over a toy left on the cellar stairs.

He doesn't have these worries. But you do!

Accident insurance was invented to take these worries off your shoulders. It can't prevent a mishap, but it can keep an accident from costing you a lot of money and worry.

If you trip over a bicycle left carelessly in the driveway, or otherwise bang yourself up, accident insurance will pay your doctor and hospital bills. It will help provide money for your family to live on, till you're well again.

Accident insurance is an essential—but inexpensive—part of a well-rounded insurance program. Why not let your Travelers agent or broker tell you more about it?

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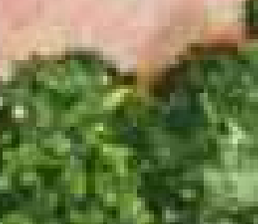
QUARTER SIZE: little brother to the whole ham, and truly its equal in all but size . . . a pound and a half of luscious, pink meat . . . enough to serve six. Slices firmly and evenly . . . from beginning to last luscious bit.

DEVILED: the same famous Hormel ham packed in a 3 oz. tin . . . chopped fine for smooth spreading . . . cunningly seasoned with lively spices . . . sandwich hit of the lunchbox parade. Better get all three!



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Recommendation for Membership

IN THE

NATIONAL GEOGRAPHIC SOCIETY

* *The Membership Dues, Which Are for the Calendar Year, Include Subscription to the National Geographic Magazine*

To the Secretary, National Geographic Society,
Sixteenth and M Streets Northwest, Washington 6, D. C.: _____ *1949*

I nominate _____

Occupation _____
(This information is important for the records)

Address _____

_____ *for membership in The Society.*

Name of nominating member _____

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* DUES: Annual membership in United States, $4.00; Canada, $5.00; abroad, $5.00. Life Membership, $100.00 U. S. funds. Remittances should be payable to National Geographic Society. Remittances from outside of continental United States and Canada should be made by New York draft or international money order. 1-49

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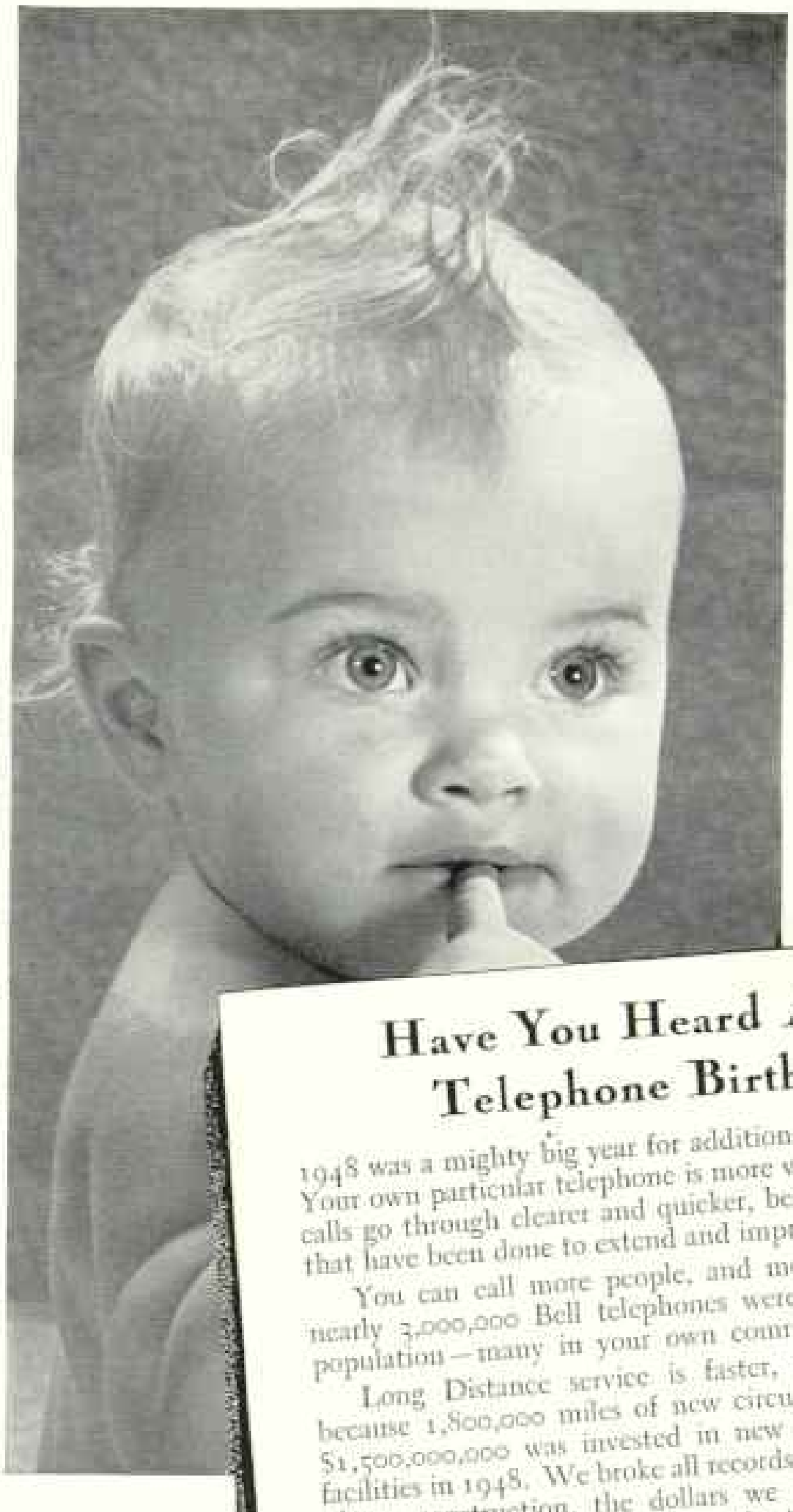

Have You Heard About the Telephone Birth Rate?

1948 was a mighty big year for additions to the telephone world. Your own particular telephone is more valuable today, millions of calls go through clearer and quicker, because of the many things that have been done to extend and improve service.

You can call more people, and more can call you, because nearly 3,000,000 Bell telephones were added to the telephone population—many in your own community.

Long Distance service is faster, and there is more of it, because 1,800,000 miles of new circuits were added. A total of $1,500,000,000 was invested in new Local and Long Distance facilities in 1948. We broke all records for the volume of new telephone construction, the dollars we put into the job and the number of telephone people on the job.

We're going to keep right on working and building in 1949, to make your telephone service a bigger bargain than ever.

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"—The seeds of godlike power are in us still" —MATTHEW ARNOLD

More and more...and better oil

UNDER THE WATERS just off the Gulf Coast alone ... lie vast new oil fields that may almost double America's oil reserves.

This rich discovery is just one more phase of the better-than-ever job the oil industry is now doing to meet our soaring demands. And back of that job are today's superior skills, advanced engineering, and *better materials*.

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