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WASHINGTON, D. C.

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To carry out the purposes for which it was founded eighty-four years ago, the National Geographic Society publishes the National Geographic 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 blank 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, 1928, discovered the oldest work of man in the Americas for which we have a date. This slab of stone is engraved in Maya characters with a date which means November 4, 291 B. C. (Spinden Correlation). It antedates by 292 years anything heretofore dated in America, and reveals a great center of early American culture, previously unknown.

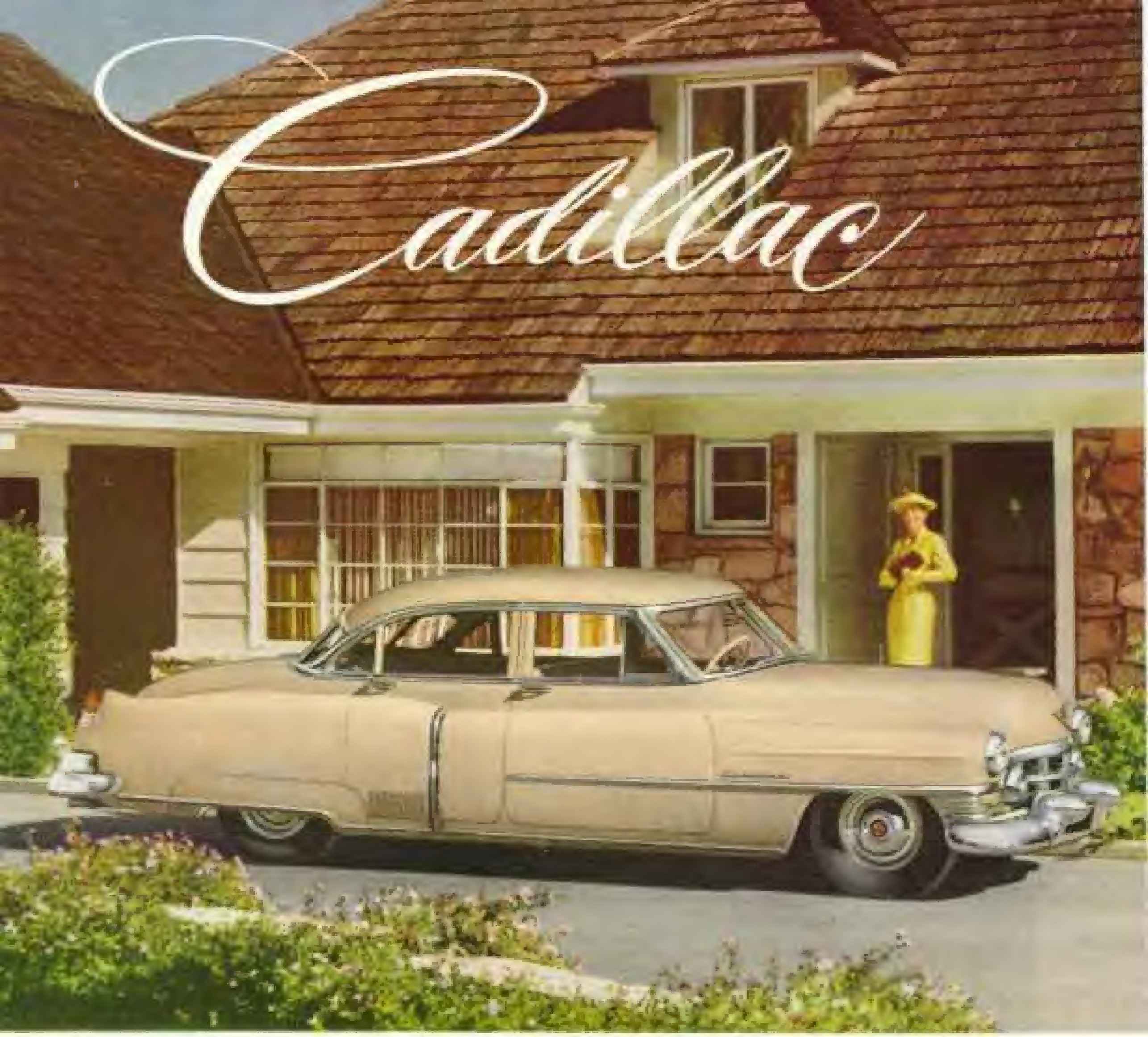
On November 11, 1933, in a flight sponsored jointly by the National Geographic Society and the U. S. Army Air Corps, the world's largest balloon, *Explorer II*, ascended to the world altitude record of 72,395 feet. Capt. Albert W. Stevens and Capt. Orvil A. Anderson took aloft in the gondola nearly a ton of scientific instruments, and obtained results of extraordinary value.

A notable undertaking in the history of astronomy was launched in 1936 by The Society in cooperation with the Palomar Observatory of the California Institute of Technology. This project will require four years to photograph the vast realm of space, and will provide the first sky atlas for observatories all over the world.

In 1918 The Society sent out seven expeditions to study the eclipse of the sun along a 4,300-mile arc from Rotuma to the Aleutians. The fruitful results helped link geodetic surveys of North America and Asia.

The Society granted $25,000, and in addition $75,000 was contributed by individual members, to help preserve for the American people the forest of the giant sequoia trees in the Giant Forest of Sequoia National Park of California.

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.



Highlight of the Day's Activities!

Perhaps it's to be a visit to a friend's home . . . or perhaps she's meeting the man of the house in town . . . or, again, it may be only for the day's shopping. But whatever the trip—for the woman who enjoys possession of a Cadillac car, *this* is the highlight of the day's activities. For there it stands in the driveway—proud, eager and beautiful. Its brilliant finish gleams in the soft afternoon sun, and through the window, she sees just a corner of the gorgeous fabric. Out on the highway there's nothing for her to do but—*relax!* She merely *pre-select* the type of performance she wants for the miles ahead . . . and the car does her bidding as if by magic. And with power steering . . . well, even the *motions* of driving are so completely effortless that she's scarcely aware of them. She just leans back, with a queenly sense of pride and well-being, and listens to the quiet lullaby of the passing breeze. Yes, this is that long-awaited interlude in the day's activities . . . that wonderful moment she'll remember till it comes again tomorrow—*the journey behind the wheel of her Cadillac!*

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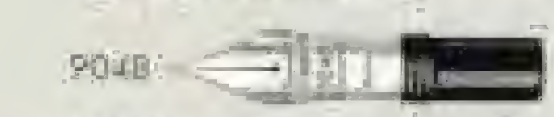

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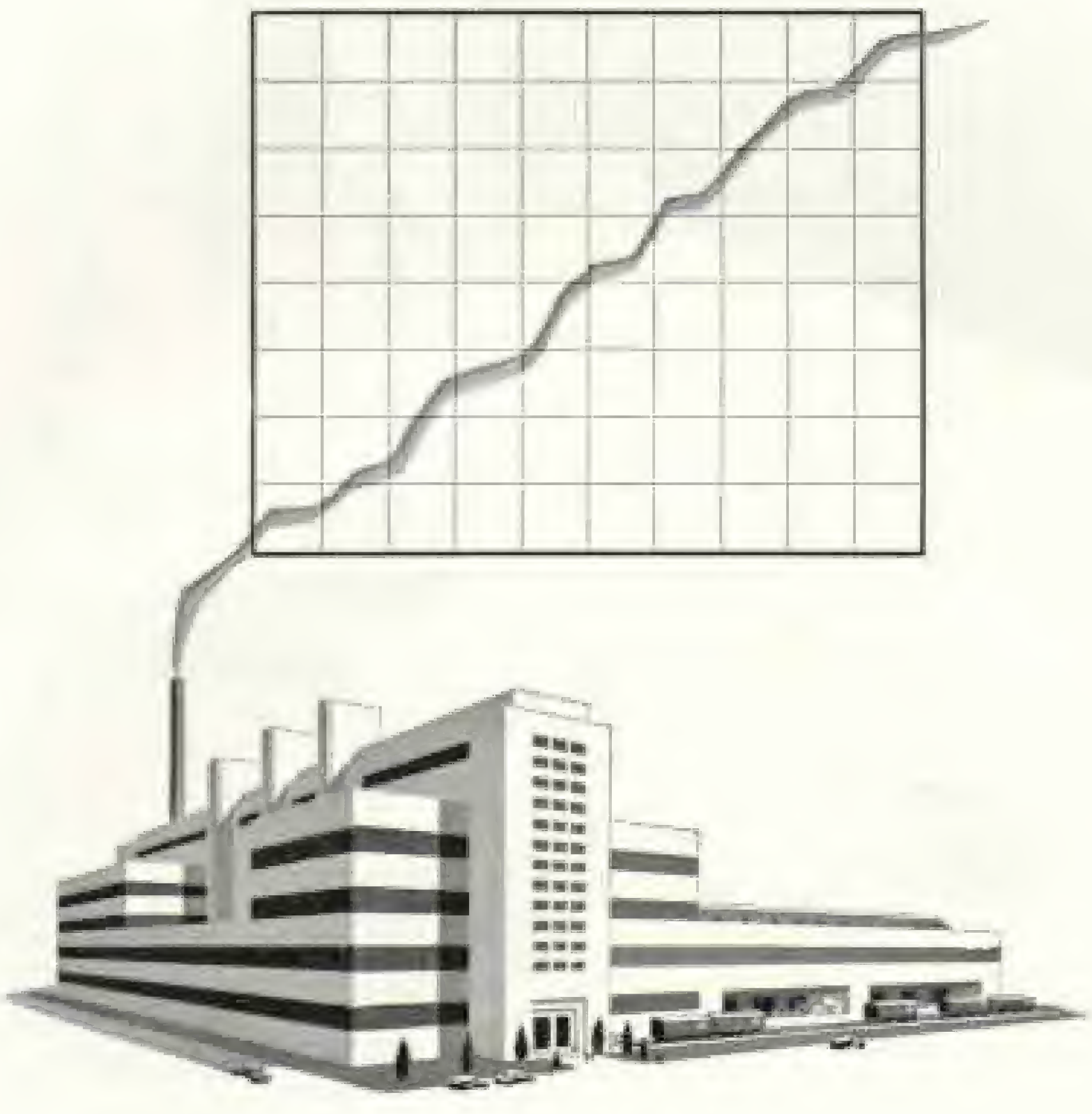

Things are UP and UP ...down South!

LOOK at any chart recording the amazing industrial development of the modern Southland. You'll notice that production is UP, industrial construction is UP, plant enlargements are UP.

Construction contracts in the South last year totaled an all-time high of $5½ *billion*. Industrial contracts of more than $2¼ *billion* were double those of the previous year. Expansion in the Southland's chemical and metals industries alone reached multi-million dollar proportions in the year just past.

All signs point to still more business activity, still greater industrial growth and opportunities, in the Southland served by the Southern Railway System. But why not see for yourself? . . .

"Look Ahead—Look South!"

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President

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TIPS ON TRAVEL

by HORACE SUTTON
World Traveler
and Travel Columnist

Can't wait for summer? Don't move into a Greenhouse. Catch a Sun-Liner instead!

The quickest way to summer without waiting out the calendar or locking yourself in a greenhouse is to hop an ocean liner that plies from New York to the Mediterranean. The Sun-Lane route to Europe is insulated from care, cold and a cackling telephone. Weather observers insist that on 87 per cent of the days nary a drop of rain should splatter on the decks of a Mediterranean Sun-Liner. This phenomenon derives from no special arrangement between Mother Nature and any steamship lines. It is simply based on the average of dusty weather reports kept for 100 years.

Sun-Porch of Europe

Here's the current state of things on the Sun-Porch of Europe. Near Genoa on the Italian Riviera, India figs bloom on the cactus, bougainvillea trees spill over the villa walls, and planes, loaded with carnations grown on the stepped Italian hills, take off for Scandinavia to spread the sunshine to the northlands.

Across the Mediterranean Sea at Grasse, twelve miles from Cannes on the French Riviera, the flower-pickers from the perfume factories are up at dawn to pick the jasmine before the sun's heat sends the fragrance into the air. Over in neighboring Spain, next year's olives stud the trees and the sun wheedles a silver shimmer out of the pastel olive leaves.

Hub of Continent

When you slip into Europe from the sunny, southern side, the whole Continent lies before you like Paris from the Eiffel Tower. At the ticket counter (only a short row of palms from the dock at Cannes) just say the magic word—Paris? London? Geneva? Berlin? Frankfurt? Vienna? Montepolciano?

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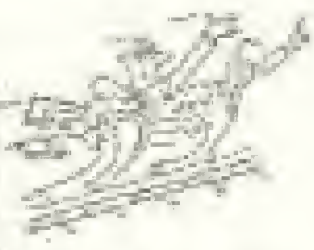

That brings us, paisans, to the best means of getting to and under this Mediterranean sun. Unbridle your imagination. Make believe you are in the very last word in hotels. Take this hotel and slip a hull under it and you have the Constitution or the Independence, American Export Lines' new twin luxury Sun-Liners. Modern living room suites out of the pages of a magazine convert to completely equipped sleeping rooms at the touch of the steward's toe on a lever.

See Your Travel Agent

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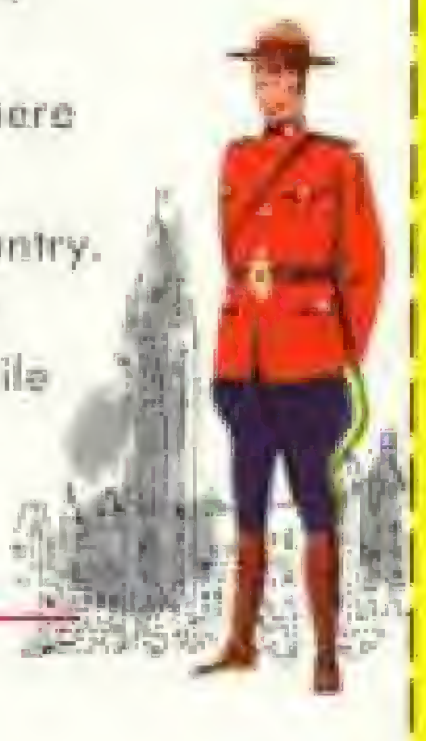

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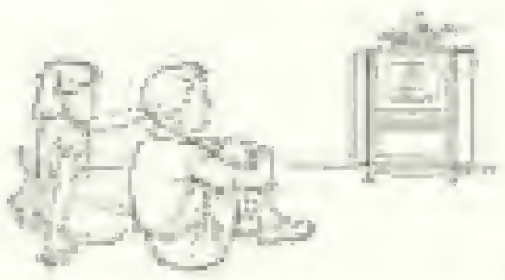

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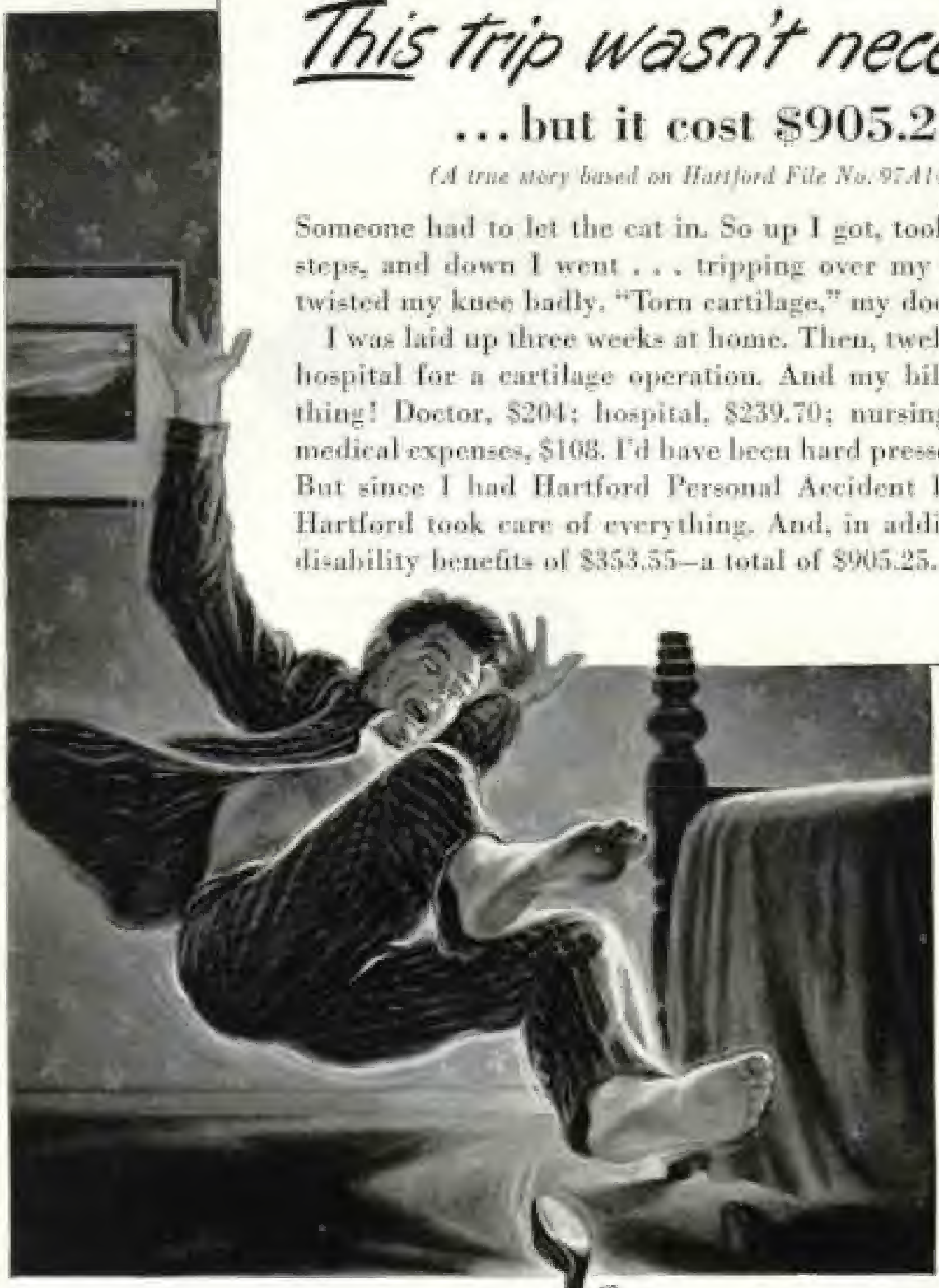

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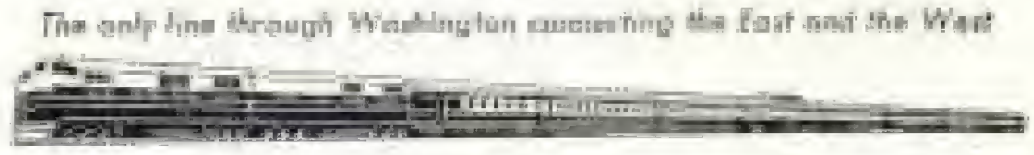

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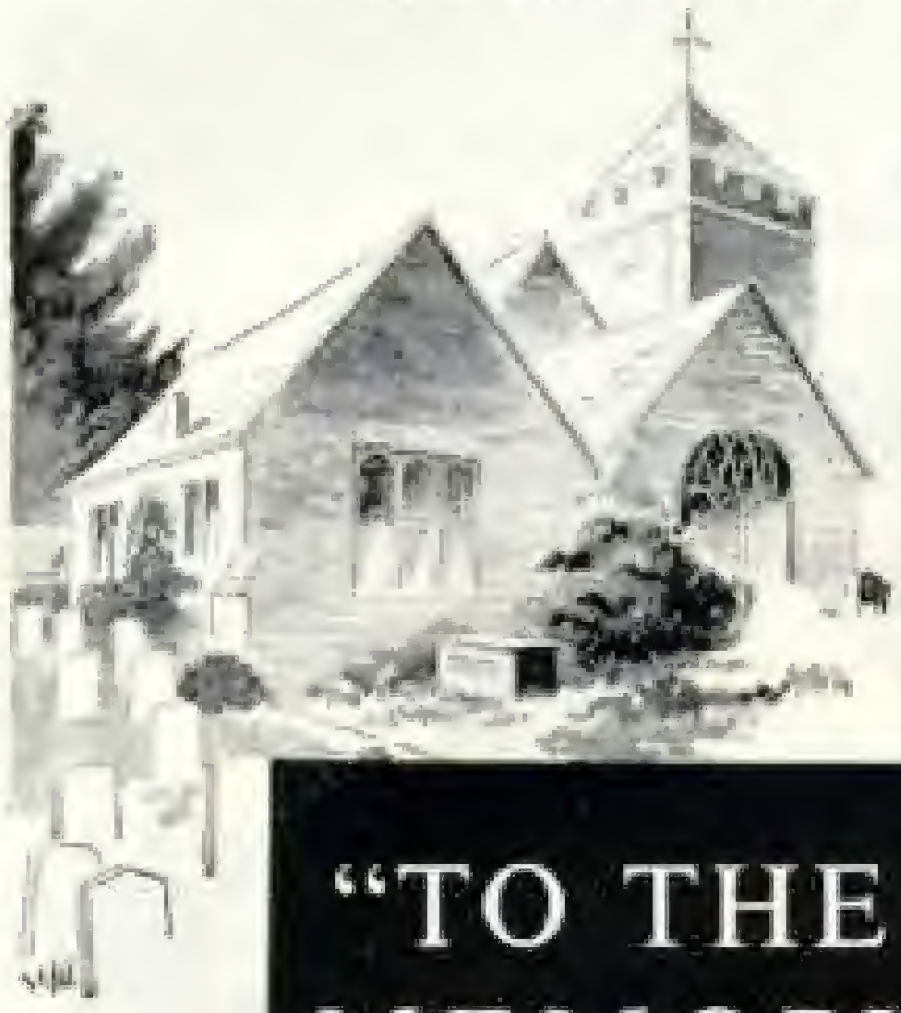

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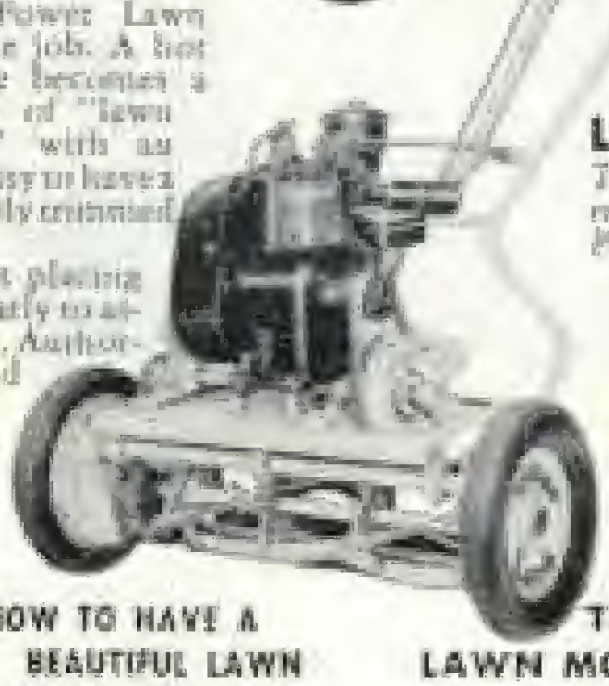

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Some Common Fallacies About

HIGH BLOOD PRESSURE

High blood pressure, or hypertension, is a major cause of heart disease in middle age and later years. Directly or indirectly, it claims the lives of about 200,000 of our citizens annually.

Yet, medical science can do much for people with high blood pressure. Doctors say, however, that certain false beliefs which many people have about this condition sometimes make treatment more difficult. By replacing fallacies with facts, patients are helped to develop a calm mental outlook—an important factor in controlling hypertension.

Listed below are some of the common fallacies about high blood pressure, and some medical facts which may be reassuring.

FALLACY #1

That an increase in blood pressure is always a sign of trouble. This is not true. In fact, everybody's blood pressure varies from time to time as a result of physical activity or emotional strain.

Such temporary rises are perfectly normal and are *not* a sign of trouble. However, if such rises occur frequently and are excessive, they may indicate a tendency toward hypertension.

It is always important to have the doctor determine whether blood pressure is *persistently* higher than it should be, and to search for the underlying cause.

FALLACY #2

That nothing can be done to control high blood pressure. Far from it! Under living and working conditions specified by the doctor, high blood pressure may clear up in some cases before it has a chance to damage the heart and blood vessels.

In all cases, however, close and continued cooperation with the doctor in *every* phase of treatment is essential. This is why everyone —especially those who are *middle-aged or older*, those who have a family *history of hypertension*, or those who are *overweight*—should have periodic health examinations.

FALLACY #3

That high blood pressure demands restriction in all activity. On the contrary, many people who have this condition continue to enjoy active, useful lives simply by following the doctor's advice.

Among measures which the doctor may suggest to help lower blood pressure are: *practice moderation in every physical activity; avoid emotional extremes; keep weight normal; get plenty of rest, have frequent medical check-ups.*

By carefully observing these precautions, many people with high blood pressure can live long and nearly normal lives.

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VOL. CI, No. 5 WASHINGTON MAY, 1952

THE NATIONAL GEOGRAPHIC MAGAZINE

I Sailed with Portugal's Captains Courageous

BY ALAN VILLIERS

With Illustrations from Photographs by the Author

FOUR hundred and fifty years ago, Portuguese in sturdy sailing ships were crossing the Atlantic on the spring east wind to fish the Grand Banks off Newfoundland, 2,000 miles away. They fished with hook and line, filled their holds with cod, and raced for home before the fierce northern winter caught them.

Fogs, gales, and freezing weather took their toll each year, and still the fishermen sailed, for cod had come to mean the difference between food and hunger in much of southern Europe. Salt cod was eaten on Catholic fast days and formed part of army rations.

New Ships, Old Dangers

In the 1950's a fleet of Portuguese sailing ships still sets out each spring for the Grand Banks. Though time has brought changes in the size, shape, and gear of the ships, the 2,000 hardy fishermen who man the fleet face most of the same hazards their ancestors did.

Early in the spring of 1950 I shipped out with the Portuguese fishing fleet of 32 sailing vessels in the graceful steel four-master *Argus*, built in 1938-39, queen of the banking ships. I had arrived in Lisbon (Lisboa) in early March, to get a look at the background first.

The sailing vessels, I learned, still depend mainly on the wind, though they now have Diesel engines to help out when necessary. They also have electric lights, steam heat, and refrigeration. Power winches, within the memory of some of the older fishermen, have done away with the backbreaking job of raising and lowering sails and anchors.

But the fishing itself, the sea, and the danger are unchanged. The men still fish in the classic way: in the morning each sets out alone in his small one-man dory, pitting himself, his skill, and his luck against the ocean.

I picked up the *Argus* in the broad River Tagus, or Tejo (page 570), where the fleet of hand-liners was assembling for the blessing service. It was held in Belem's famed Monastery and Church of the Jerónimos, built in the 16th century as a thank offering for the successful voyage of Vasco da Gama.*

For the blessing, the church was crowded with dorymen, all in colorful checked shirts and high sea boots. Schooner captains were there, also admirals and ministers of state, dignitaries of the Church, and people of Lisbon.

I tiptoed past the tombs of Vasco da Gama and the poet Luis Vaz de Camoëns and listened to the words of the Archbishop of Mytilene, himself the son of a drowned Grand Banks doryman, as he blessed the fleet.

Outside, the schooners were brave with bunting. They looked like lovely yachts ready to set out upon an ocean race. Fleet of line and graceful, tall-masted and serene, they waited. But the east winds of spring were blowing and this was the time to sail.

Wives Are Sad as Husbands Sail

We steamed out from the great church, with its decorations of ropes and anchors to mark the ties between Portugal and the sea, and hurried down to the water front and aboard.

The last of the dorymen's wives were being rowed ashore in the little red dories, and the children with them were quiet and sad. The dorymen, I learned, went year after year with the same ships, and some of the privileged among them were allowed to have their wives and children aboard with them for the last few days before departure.

* See "The Pathfinder of the East," by J. R. Hildebrand, NATIONAL GEOGRAPHIC MAGAZINE, November, 1927.

356

Gleaming in New Paint, Fishing Schooners Wait at Anchor in Oporto, Portugal . . .

Early in April the 32 sailing vessels of the Portuguese cod fleet cross the Atlantic to the Grand Banks of Newfoundland and the Greenland coast. The fishermen, as they have for centuries, work in frail one-man dories launched each morning and picked up at night. In autumn, when the ships head for home, they will be battered but loaded with hundreds of tons of cod; the stormy Atlantic will claim some stalwart dorymen.

It was these wives I now saw coming across the swift blue water. They were dressed in the costumes of the fishing hamlets of Portugal. There was one from the north, in voluminous colorful skirts; others, from the southern Algarve, wore somber black, with high black-felt hats atop their heads.

Aboard the *Argus* all was activity. Throaty calls of the dorymen sailors mingled now with the clank of the windlass bringing the cables home and the creak of blocks as high white sails piled aloft.

Three other schooners were sailing with us, for the bankers like to go in company. This has been traditional since the days when pirates roamed the North Atlantic, but it has still another purpose: in early spring when the ships sail, and in autumn when they return, sudden gales blow up and old ships may founder. If there are others near by, they can rescue the crew.

The *Rancho:* Big Bunks and Big Men

We swung slowly under the Lisbon hills and looked back upon the white city for the last time in many months. As the schooner crossed the Tagus bar and passed out to sea, gulls cried around her, the wind began to sigh in

567

. . . to Start Their 5,000-Mile Voyage

A few days before sailing, a workman finishes painting the hull of the *Paços de Brandão*, a 187-ton three-master without auxiliary power. In the fall of 1951, filled with cod, she went down in a hurricane.

the rigging, and the white water gurgled and splashed at the curved bow.*

Down below in the *rancho*, as the forecastle of a Portuguese banker is always called, half the complement of dorymen were settling in. The other half would be shipped in the Azores, for the *Argus* was bound first for Ponta Delgada on São Miguel Island. The rancho was a cavernous place full of big men, big bunks, and all kinds of cooking, fishing, and seafaring gear.

On the side of his bunk, holding a mug of wine in one hand and a slice of crisp bread in the other, sat Antonio Rodrigues, 63 years old (page 585). Antonio, I learned, was making his forty-third voyage to the Banks for cod. He was a handsome old man with a face gnarled and brown, but his body was still as spry and agile as a youth's. I had seen his wife go over the side with the others. There was still a faraway look in his eyes.

"How does it feel to be making your forty-third trip back to the Banks?" I asked.

"I wouldn't be any place else, and there isn't a better ship," Antonio grinned, taking a swallow of purple wine. "It's a good life for a man."

"How long have you been with the *Argus?*"

"Ever since she was built," the old man said. And that went for almost all her dorymen, except the very young ones. Most were middle-aged.

The Man Who Hooked a Ton a Day

A little later I noticed a gaunt, determined-looking man with a striking face taking his turn at the wheel. The mate—a cheerful youth aged about 22, making his fifth voyage—told me that this was the First Fisher, Francisco Emilio Battista, champion doryman of the whole fleet. He caught a ton of cod a day. A ton a day! I looked at him with astonishment, for I'd no idea that fish could be caught in such bulk by hook and line.

Francisco's shipmates had a joke about his fishing prowess. "He has a hatchery of his own," the second mate explained. "He has his own cod and he just goes and takes them."

Captain Adolfo, the master of the *Argus*, was standing by the wheel. He was a lithe, dark man, about 50 years of age. I knew he had been at sea in sailing ships since he was eight years old. He still had his shore clothes on, a smart business suit and a soft felt hat, with brightly polished shoes. On his right hand sparkled a diamond ring. He had joined the ship at the last moment, coming aboard with the clearance papers.

His wife and family were at Ilhavo, the famed village of shipmasters and cod hunters which stands on an arm of the sea south of Aveiro in the north of Portugal. From it hail most of the schooner masters. But though Captain Adolfo had been going out from Ilhavo for more than 40 years, he was not fond of a fisherman's life.

"The Captain," said the mate, "he hates the sea. But he will fill his ship with codfish. You see."

I looked forward to seeing.

And now the good *Argus* headed out toward the Azores, and the dorymen began to get

* Sailing with the Portuguese Grand Banks fleet is the most recent of Alan Villiers's many sea adventures. Others described in the National Geographic Magazine include: "Sailing with Sindbad's Sons," November, 1948; "Last of the Cape Horners," May, 1948; "North About," February, 1937; and "Rounding the Horn in a Windjammer," February, 1931.

A Jigger Hooked This Handsome Greenland Cod Through the Lower Jaw

While a doryman waits for cod to go after the bait on his long-line, he fishes with one or more hand lures called jiggers. These are elongated pieces of lead which look (to the cod, at least) like herring. The fish does not swallow the hook, but goes after the lead and is hooked from below when the doryman jerks his line.

their dories and their fishing gear ready (pages 578, 579). At Ponta Delgada we picked up another 26 dorymen, giving us a complement of 53 in all. With the deckboys and the cooks, officers, engineers, and so on, the schooner had 70 souls aboard. Her decks were crowded with the little red dories carried in stacks six and seven high, fitted together like a child's hollow blocks and lashed to the decks.

Mystery of the Vanishing Bait

Down for'ard near the rancho she had a big refrigerated room for bait, but there were no bait fish in there yet. For some mysterious reason, the sardines which were used for bait had temporarily deserted the coasts of Portugal.

And so from the Azores we made toward St. John's in Newfoundland, to ship our bait (map, opposite). You couldn't hook a codfish without bait.

The longer I was aboard the *Argus* the more I marveled at her. She was a sailing ship, but she was fitted with every modern device that was of use. The Portuguese are not old-fashioned; they stick to the schooner rig because it is ideal for fishing on the Banks, where a ship has to keep the sea over many weary months and a powered vessel might run out of fuel.

They had given the *Argus* all the up-to-date equipment she needed. There was that big refrigerated room, for instance, holding 30 tons; a radiotelephone, and an electronic device for accurately measuring the depth of the sea.

She was fitted with steam heat, too, for the Greenland grounds. Her steel masts were hollow to act as exhausts for the boilers and for the big Diesel engine down below. She was a fine, modern ship, and I had no trouble settling down in her with the good Portuguese.

Then we got to St. John's and there was still no bait, for it was a bad ice season and the Newfoundlanders could not get at the herring. It was early April, and cold. We passed 17 days in the harbor, just waiting.

The dorymen got their long-lines all ready; they rigged their dories and washed their clothes in the clear mountain streams, hang-

From Warm Portugal to Arctic Greenland, Dorymen Sail in Quest of Cod

In past centuries, dorymen did most of their fishing on the Grand Banks. Since the turn of the century, however, the Arctic has grown warmer and the cod, a cold-water fish, has moved north. Portuguese captains now sail as far north as Holsteinsborg, where 50 years ago cod were virtually unknown (page 584).

ing them on the rocks as they were accustomed to do at home. After that there was nothing to do—nothing but stare into the shops or play with the St. John's kids.

Most irksome to the idle fishermen was that they were unable to earn a thing. Payment for dorymen is by results—no fishing means no pay, and of course it delays the voyage and puts off home-coming. Nearly all the dorymen are family men, and they love their children and their homes. We were glad when at last the herring ran and we got our long-awaited bait.

Over at Four, Fog or Fine

Then we fished for cod on the Grand Banks off Newfoundland for six cold and foggy weeks, while we waited for the summer sun to melt the ice in Davis Strait and clear the way to Greenland. But there wasn't any sun and there wasn't any summer, either. What a place!

The *Argus* and her consorts just anchored on the Banks, choosing a place where the rocky bottom prevented the horde of trawlers from working because the rocks would rip their costly trawls. Her 53 dorymen went over the side at 4 o'clock every morning they possibly could, fog or fine—and it was rarely fine (page 587). They'd streak away under their tiny oiled sails for the horizon, lay their long-lines, and fish all day (pages 588-9). While the 600-hook long-lines were down, they'd fish by hand with lead jiggers, shaped like a herring and fitted with two large hooks (opposite page).

I went out with the dories. Until now, I had thought I was reasonably accustomed to the sea and more or less inured to its hardships. But in a dory I found I was a greenhorn. The rigors of sailing great windjammers round Cape Horn are nothing to the sort of thing a doryman on the Grand Banks takes in his stride.

Take a look at a dory first. It's nothing but a frail-looking open boat, flat-bottomed, built up of a few planks. It has no keel, nor even a rudder. Its thwarts rig down so it can be nested. It's about 14 feet long, less than 6 wide. Its little mast is a piece of sapling that

Lisbon's Sailors Have Roamed the Seas for Five Centuries

Lisbon, a thriving city of 600,000, is Portugal's capital and busiest port. From its five-mile water front (see map) the city climbs steep hills; elevators and funiculars help pedestrians. At near-by Belem, where Vasco da Gama in 1497 began his famous voyage around Africa, most of the cod ships gather for a blessing before starting for the fishing grounds.

Pan American World Airways

Deck Boys Hold Dories Alongside the Schooner *Argus* with Long Poles While Dorymen Pitch Cod onto the Deck with Pronged Gaffs

As soon as a dory is unloaded, it heads back to sea for more. At nightfall dories are hoisted on board, and all hands set to work cleaning fish. As each boat arrives, Captain Adolfo (second from right, at rail, with dark cap and beard) writes down an estimate of its load. Dorymen are paid according to how much cod they bring in

the doryman cuts for himself: its rigging is homemade, and its sails likewise (page 591). It looks all right for a quiet day on the Potomac. But there are few quiet days in spring on the Grand Banks, and fewer off Greenland.

My dory was yanked to the side of the rolling ship by a couple of patent tackles and two iron hooks. I looked overside at the cold, cruel sea and thought, "I'd rather stay in the *Argus*—she's small enough." But the 53 dorymen were looking on from the turbulent gray waters, and I had to go. My dory was full of lines and gear and bait, with a small-boat compass atop the lot in case of fog.

"Go off along a bearing," old Antonio Rodrigues had said. "You never know when there'll be fog around here. And don't worry about the dory. Dories are all right. It's the men in them . . ."

I remembered old Antonio's advice.

"And get away from the ship's side quick," he'd said. "That's the dangerous place! You can be stove in against the steel plates if you don't watch out."

The iron hooks yanked my dory to the rail. The white schooner rolled alee. A nasty, gurgling sea rose until it lapped hungrily at the bottom of the little boat.

"Now!" yelled the cook and the second engineer, at the tackles, and let me go. With a swoosh and a smack upon the sea, I was off. I shoved her away from that murderous steel side as fast as I could.

How enormous the *Argus* looked, seen from down there on the surface of the waters! She was only a 696-ton schooner, but just then she looked like a 20,000-tonner to me. At once my dory began to toss and leap and fret upon the ill-tempered sea running on the Banks, and I got my little mast and sails up as lively as I could.

Once the sails were on her, I was astonished at how well that little dory sailed. She was lively, certainly—almost enough to make me seasick—but she got along very well.

Problem: Find the Cod

At once the sea seemed the loneliest place I had ever known. I had always been used to staying aboard any ship I sailed in, from beginning to the end of the voyage. You don't normally go over the side at sea if you can help it. From this tiny boat I felt for the first time the vast immensity and the incalculable challenge of the great open ocean.

It was savagely cold. I didn't see how I was going to work with my bare hands, though I had a 300-hook line to pay out when I reached a good place. A good place? How was I to know the difference?

I made in the general direction I had seen our champion fisher go, and reckoned to sail until I saw his dory. All the dories had big white numbers on either bow. His was No. 16. I sailed and sailed, and not a sign of No. 16 did I see. When the hull of the *Argus* was almost below the horizon, I thought I had gone far enough.

So I lowered my sail, threw out the little grapnel, baited up the last hooks of the long-line (there had not been time to do the lot before leaving the ship), and got the line well laid on the bottom, across the current. There were about 35 fathoms (210 feet) of water.

Next thing I began to fish with the jiggers. To work these, you take one jig-line in each hand, drop the jigger until it is just off the bottom, and then alternately jerk it smartly up and let it drop back again. It is supposed to hook the cod on the upward swing.

Mine didn't. Maybe they weren't on the bottom. How could you tell, all that way down? A doryman obviously had to have his brains in his finger tips, and mine were numb and particularly brainless that morning. The dory hopped and jumped, and you had to stand up in it to jig (page 582). I sat down. I hauled in one jig-line, stuck to the other. The long-line must be down three or four hours before it can be hauled.

Half a Load in One Haul

The dory continued to jump and leap, and there was no true rhythm in the water. The wind began to sigh, and there was an ominous bank of nasty fog to windward. Here and there, as my dory rose on the crest of a sea, I could see other dories—never more than five or six, though I knew there must be more than 300 all around me, for there were several big schooners near by.

I began to think that down here on the sea a lost dory would be mighty hard to find. And dories, I knew, were lost often enough.

Toward 9 a.m. I began to haul in my long-line. That took me two hours, for I had no skill at the business. Again you have to work, and again the dory bucks and jumps and tries to throw you.

But, by the luck of beginners, I had a fair enough haul. My long-line, like all the others, consisted of several 100-yard lengths of big cod line spliced together. To this, small pieces of lighter line, called snoods, were attached about a fathom apart. The snoods held the hooks, 50 of them for each 100 yards of cod line.

Most dorymen used long-lines made up of from eight to twelve of these 50-hook sections, so that they were fishing with 400 to 600 hooks. But I was trying a 300-hooker for a start. That was business enough! Handling the long-line so as not to get the hooks snarled

573

Grand Banks Schooners Head Out from Lisbon on a Spring East Wind

The author shipped in the 695-ton Portuguese fishing schooner *Argus;* her sister ship, *Creoula*, sails off the starboard bow. Portugal and home grow misty in the distance.

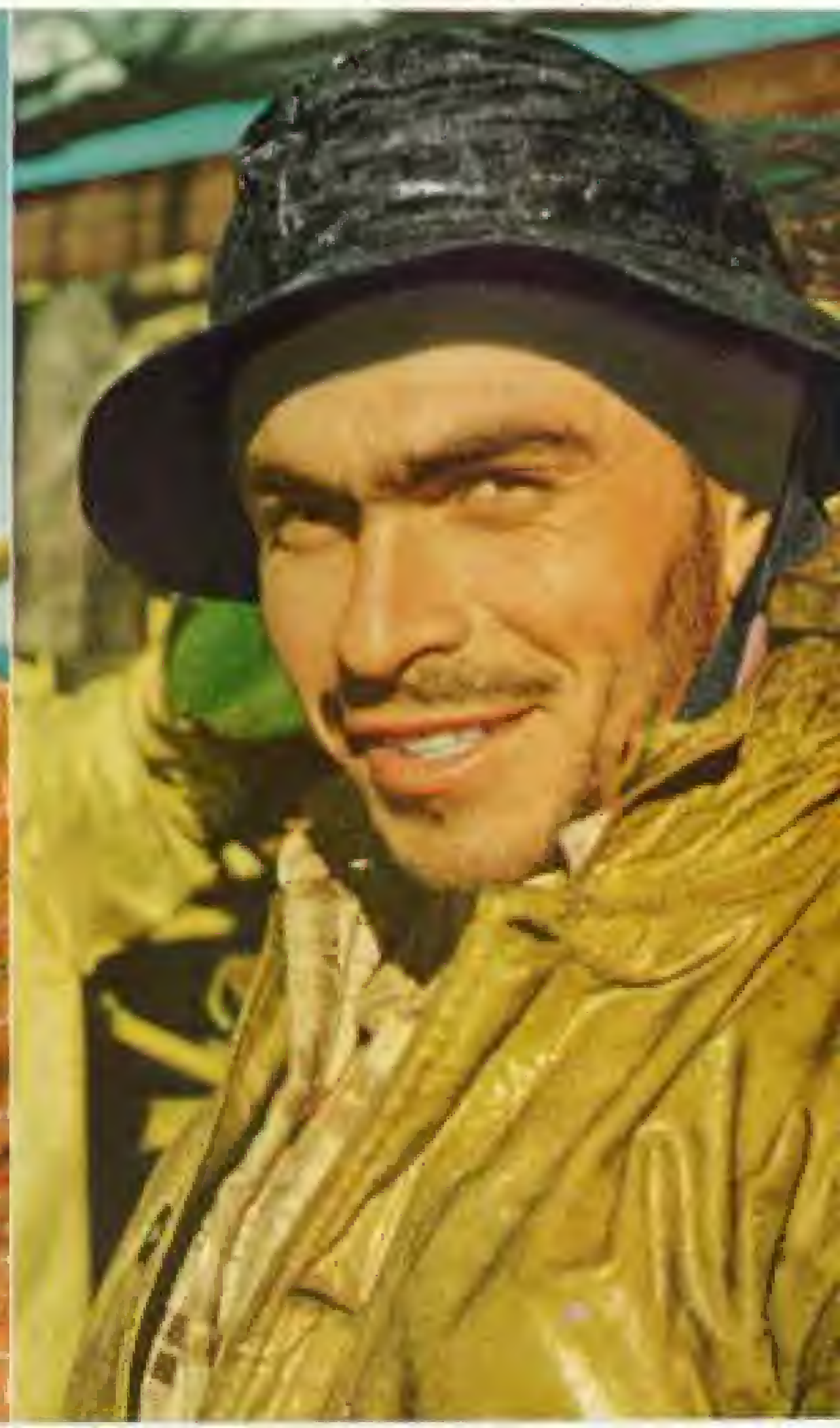
With a Gale on the Way, Crewmen Stow *Gazela Primeiro's* Foresail. She Is the Last Square-rigger in Portugal's Fleet

Once barkentines like *Gazela* were common on the Banks; now most have been replaced by easier-to-handle schooners. The furry-looking stay at left is covered with woven yarn to prevent its chafing the sail. Opposite: Sailors hang on as a North Atlantic comber breaks over *Argus's* low rail.

Kodachrome by Alan Villiers

A *Creoula's* Crew Crowd Rail and Rigging as They Shout Goodbye to Friends on *Argus*. Here in the Azores the Ships Parted Company

Argus put into Ponta Delgada, São Miguel Island, to fill out her crew with Azorean dorymen. *Creoula*, fully manned, went on to Newfoundland. This picture shows clearly the schooner's low profile, designed for easy launching and loading of dories, and her bulky rump stern, which has storage space for fishing gear. Below: Doryman Emiliano Martins tucks a wool cap under his sou'wester for warmth; both he and doryman Joaquim Pedro Rolão (right) wear two flannel shirts under their oilskins. João Fernandes Matias (center), chief mate of the *Argus*, sports a Nazaré cap. He does not normally go out with the dories, but works aboard ship.



Bound for the Banks, Dorymen Keep Busy Repairing Gear

Getting their complicated equipment ready for fishing took up most of *Argus* dorymen's time during the 16-day crossing to Newfoundland.

Each man received a supply of hooks, lines, sinkers, wood and canvas for dory sails, as well as boots, gloves, and sou'westers. With these articles each had to prepare his fishing gear, make his buoys and grapnels, and rig his dory.

These men attach sinkers to hand lines, which must plummet 30 or 40 fathoms to the bottom. Wicker baskets will hold bait.

A Dorymam's Long-Line Can Catch 1,000 Fish

Unlike fishermen of most other countries, Portuguese use only hooks—never nets—to catch cod. To bring in the huge volume he needs to make a living, the doryman uses 400 to 1,000 baited hooks on a single line. When he hauls it in, with luck he may have half a ton or more of cod.

After veteran João Botelho got his long-line ready, he stowed it under *Argus*'s main boom for safekeeping.

Kodachromes by Alan Villiers

Kodachrome by Alan Villiers

As *Argus* Nears the Fishing Grounds, Men Crowd the Deck in a Rush to Get Gear Ready

One doryman sits on a windlass to work on his long-line. Another (left) braces himself to pull a sinker home. The wooden bucket will hold a doryman's food, watch, fog whistle, tobacco, and matches

Laundry and Oilskins Flap in the Sea Breeze While *Argus* Lies in Harbor

At St. John's, Newfoundland, the cod fleet waited 17 days before the captains could buy herring for bait. Dorymen spent idle time washing clothes. A dory (foreground) served as ship-to-shore ferry.

is a skilled job, and I was far from skilled, so mine got snarled. Then I had to stop and untangle them, and that took time.

But the cod is a stupid and docile fish. Those on the hooks waited patiently until I hauled them up, even the 80-pounders. Some had only a piece of the hook through their silly rubbery lips, but still they hung there, waiting their turn to be pulled into the dory.

One or two did slip off as I got them to the surface. Then I reached over with a light sort of gaff, a piece of wood with a large hook attached, got them by their gills, and flung them into the stern sheets without further ceremony.

If one had too much life, I stunned it with the other end of this small gaff. But most of them just flapped a bit and then lay still in the heap.

As any fisherman might have been, I was excited at first by the size of my haul—almost 50 fish. But I soon got over that. Cod are just too sluggish to provide much excitement.

Most of those I caught weighed, at a guess, 30 to 45 pounds. When I got them all in, my dory was about half full. Only a few were little 20-pounders—and that is one reason why the Portuguese still prefer the schooner and the dory fishing. You get bigger and better fish with hooks. The trawlers, using nets, have to go too often over the same ground where the bottom is good, but the dories can go anywhere.

After the Fish Comes the Fog

I didn't pay the line out again. Ordinarily a doryman would stay out until his dory was full, or the recall flag—any big flag on the aftermast—was hoisted. But I was not a doryman, and now I knew I never would be. I was just trying it out, and I was mighty glad to call it tried and get on my way back to the ship.

But that infernal fog *had* blown down. An arm of it was between me and the *Argus*. Suddenly I found myself alone on the sea, and the ghostly arms of the horrible fog were wraithlike around me! Well, I could anchor and wait. Antonio Rodrigues had said to do that.

"Don't ever panic," he had said. "The panicked are dead."

But the fog didn't look like the really determined kind. Now and then I could see the gray sky above; sometimes there were lesser clearings. I hoisted the little mainsail and the minute jib, for there was a gentle sailing breeze upon the water. I had my bearings, and I put the boat compass on the thwart before me.

With one of the dory's three small oars down to leeward as leeboard and rudder, I made grimly off along the bearing that I'd had of the ship, and kept a smart lookout for other dories. I had a conch shell to blow. I also had a loaf of bread, and water enough for a couple of days if used sparingly.

When you go off in a dory, you expect to come back the same day. Dorymen never prepare themselves or their boats against calamity. If it comes, they take it in stride.

A Fog Siren—Which Way?

After a while I heard a schooner sounding her great fog siren, for they all carried air-raid sirens at their mastheads to summon the dorymen in fog. But where was this schooner? Was she the *Argus*? I didn't know. I had no judgment of sound direction in fog.

I knew the distinctive signal the *Argus* used on her fog bell, the big old church bell which hung in the mizzen rigging. I blew this signal on my conch shell and waited for a reply.

None came. Then that siren wasn't aboard the *Argus*, or I'd heard it through some freak condition in the fog. I carried on. I blew my conch again.

What was that? An echo? I blew again. It was no echo! It was a doryman sounding our signal, an *Argus* man, in the fog like myself. I shouted to catch his attention, to check my compass course with his. He shouted back. I saw nothing but the white and ghastly fog and the greasy cold swirling of the wretched sea.

And then, indistinct at first and almost unbelievable, I saw the triangle of a tiny sail harden in the surrounding murk; a roll of white water gurgled at the little laden bow. There was a dory! No. 16! Battista, the First Fisher—I couldn't strike a better man than that. He grinned.

"No good! No good!" he shouted. But he looked abominably cheerful, and I could see that his dory was full to the gunwale with fine big cod.

Once I had found the First Fisher, I knew I was all right. After a quarter of an hour of gliding through the pall of fog, a white monstrosity suddenly loomed above us, right alongside. It looked like an iceberg.

"*Argus*," Battista grinned. "We come back, no?"

Aye, we came back, and I had had enough of dory fishing for the day—and for all time, as far as that went.

And yet that evening down in the rancho I found all hands cheerful enough. Nobody was lost. They were all expert fog navigators, with an uncanny ability to find their way back to the schooner.

I knew well enough that being lost in fog was only one of the risks those brave, quiet men took as part of the daily job. Being

382

Standing All Alone in His Dory, a Fisherman Brings Another Cod Up from the Bottom of Davis Strait with a Jigger

The sea is calm, and though his boat rides low in the water, the fisherman can safely pull in his long-line once more before he returns to *Argus* (background) to unload. At present, with its 1,000 hooks baited, the line is stretched out 4,000 feet along the bottom. One end is looped over the pulley at the dory's bow.

An Overloaded Dory, a Choppy Sea—and a Fisherman Takes an Unwanted Swim. Ready Hands Help with Salvage

Accidents like this one in Davis Strait are common in dory fishing and may cost a doryman his life unless help is near. The boat sank out of sight at first, then bobbed up again after dumping its load of cod and gear, some of which floats near by. The doryman had been rescued before the picture was taken.

blown away in storms, knocked down by ships, or overwhelmed in a rising sea—even being knocked out of their dories by playful whales—these were dangers they had to accept as routine. The doryman's was no life for the timid or the stay-at-home.

Down in the rancho was a young Azorean doryman named Francisco de Sousa Damaso, on his first Banks voyage. One day he was knocked down by a whale. Not that the whale meant any harm. It just happened to come up to blow right underneath part of his dory, and that was unfortunate. The dory was tipped slowly up, and the doryman and the fish and all the other contents tipped slowly out. Then the whale backed away, no doubt mildly astonished at the damage he had caused.

It might have been Senhor Damaso's first Banks voyage, but it was not the first time he had seen a whale. He shooed the beast off, righted his dory (which had not gone completely over), and climbed carefully back in. Then he retrieved all his gear that he could find, and the fish, and proceeded with his fishing.

They are a taciturn lot, those dorymen, and they had all been in some sort of fishing since they could walk. I loved to listen to their yarns, especially those of the old-timers.

They told tales of the really tough times on the Banks, when hundreds of little two-masters used to come from Portugal, Spain, and France, and from Gloucester, Massachusetts (many of our old dorymen had sailed out of Gloucester), and there was no refrigeration, no power, no radiotelephony. Sometimes they would lose three or four schooners together in a sudden gale, and all their dorymen with them; once on a single stormy night they lost 200 dorymen.

But now—why, said old Antonio Rodrigues, it was almost a schoolgirl's life!

Free Trip to China

I doubted that. I knew that Antonio himself had once been lost in fog for days—he didn't know how many days—and had been picked up by a wandering windjammer bound out of Boston for the China coast. Antonio had to go to China with her. Some years passed before he got back to the Algarve again, where they'd long mourned him as dead.

Now old Antonio laughed about what he called his "free trip to China." He was a tough old bird, and a true doryman.

Steadily the First Fisher went on catching his ton of cod a day. He was a skillful and indefatigable fisherman. More than that, he was the sort of man who would have excelled at almost any work. He was born to fishing, from the lovely Algarve port of Fuzeta, and so at fishing he excelled (page 591).

There were others able to keep up with the First Fisher for a while—João de Oliveira, the Second Fisher (page 596); Francisco Martins from the Azores; and César de Medeiros, who looked like a pirate. But none could keep on for long at the same rate.

Sometimes impossible weather kept the dories nested, for it was no use to send them out if they tossed about too much for the men to fish or if the sea was so high they couldn't be loaded. A dory had to bring back a fair load of fish for the doryman to make a living. In bad weather they fretted, all of them.

When we'd used up the St. John's bait, we went into North Sydney, Nova Scotia, for more herring and fresh mackerel to take along to the Greenland grounds. At North Sydney there were 10 schooners and a couple of dory-carrying motor ships.

Our dorymen were given $5 or $10 apiece for spending money. I saw them all buying things for children and grandchildren, nothing for themselves.

North to Greenland

As soon as the bait was aboard, off we went again, north through the Strait of Belle Isle toward Greenland.

There were big bergs in the strait, and the Labrador Current was still full of ice. We were caught badly in one ice field in a fog, and for a day and night had to stop and push the floes away. Even a small floe can smash the plates of a steel ship.

We were lucky. The ice didn't break our hull or that of the ships with us, our sister schooner *Cromda*, the four-master *Avis*, the little motor ship *Elizabeth* (page 586). A storm blew the fog away, and we sailed on toward the banks of Fyllas and Little and Great Hellefiske, in Davis Strait (map, page 569).

For the past twenty-five years there has been what scientists call a "warm cycle" up in Greenland, and the cod have been able to migrate farther north. Where the cod went, so did the schooners and the dorymen. For the next three months the *Argus* and her consorts fished the ice-littered, treacherous waters of the banks near the Arctic Circle in Davis Strait. Some years a few vessels go even farther north.

The method of fishing was the same as on the Grand Banks, except that even longer lines were used. Add the grim, jagged coastline of Greenland, throw in a background of old grounded bergs, and add the hazards of sudden, furious storms and strong, swift tides, and you have the Greenland fishing grounds.

There was continuous daylight from the midnight sun for the first two and a half months. The dorymen worked and worked,

Kodachrome by Alan Villiers

Antonio Rodrigues Takes the Wheel on His Forty-third Trip to the Banks for Cod

Still an expert dotyman at 63 years, Antonio can remember backbreaking days when Banks ships had no luxuries like power windlasses, auxiliary motors, and radiotelephones. At 65 he can retire on a small government pension.

Painted Sails Dry on Dories Nested Aboard *Elisabeth*, One of the Banks Fleet's New Motor Ships at St. John's, Newfoundland

Unlike the schooners, motor ships carry their dories on special platforms. This arrangement keeps the main deck clear, but slows launching and loading of dories—a drawback in sudden storms. Facing page: *Argus* dorymen set out to work at 4 a. m. During the busy season men get only four hours' sleep a day, a minimum set by law. They are awakened by a hymn calling a blessing on them and their ship. Here a dory goes over the side; others row clear before hoisting sail.

© National Geographic Society

Silk.

In Davis Strait: Sails Speed Dories to Cod. Oars Double as Rudders

Each doryman chooses his own rig. Most Arctic boats carry small jib-headed mainsails (above, center). Inset: This man prefers a gaff-and-boom rig. The Cross of Christ was stitched on the sail by his wife.

Reluctantly by Alan Villiers

Unless the Schooner Signals Them Back, Dories Won't Return Until They Are Filled

A full dory, in the hands of an expert, will hold up to a ton of cod; if overloaded, it may founder. These men may sail five miles off in search of fish. If a storm threatens, Argus will fly a recall flag.

After They're Caught, Cod Must Be Cleaned, Salted, and De-livered

When a full dory comes alongside *Argus*, the cod are gaffed up on deck into boxed-off compartments along the rail. Gangs of three then split and clean the fish. Livers are carefully saved and taken forward to a pressure plant, which removes the valuable oil. Cod themselves are thrown into the hold, where a skilled crew salts each fish carefully and stows it. Careless salting can spoil a whole cargo.

Almost every man aboard lends a hand when the load is in. Above: Chief engineer César Eduardo Mauricio splits cod with one stroke. Right: A deck boy pulls up more fish from the dory below.

Portugal's Champion Fisher Passes a Big One Over the Side

Francisco Emilio Battista is the *Argus's*—and the fleet's—First Fisher. For the past several seasons he has averaged between 90 and 100 tons of cod, caught entirely with hooks. While he gaffs up his catch, his dory is held alongside the schooner with a boat hook and a long painter. The gaff itself resembles a pitchfork with two steel prongs. The coiled rope is the doryman's 1,000-hook long-line; a cod's mouth gapes beside it.

Cod, Gear, and Rigging Crowd Every Inch of a Dory

Dories contain no lifesaving equipment. If one capsizes away from the mother ship, a fisherman's only hope is to hang on and pray that help comes before he freezes. This *Argus* fisherman is coming in with a full load caught off Greenland. Behind him, besides cod, are his bait basket, his long-line, and a small grapnel. Astern are more cod, a bucket holding personal supplies, and a cork line-marking buoy. Most dories bear religious names or slogans. This one, *Nossa Senhora de Fatima*, is named for Portugal's famous Virgin of Fatima.

Kodachromes by Alan Villiers

© National Geographic Society 592 Kodachrome by Alan Villiers

Dories Get a Final Scrubbing as *Argus* Heads South with a Full Load of Cod

In mid-September the fleet races home ahead of Atlantic hurricanes. These men clean the dories for winter storage. Arctic beards will be shaved off in a few days.

often putting in a 20-hour day, fishing from 4 a.m. and cleaning and salting until midnight (page 590).

The salted fish were stowed below in the cavernous hold. Until it was filled, we would not head for home; if the fall gales and new ice drove us from Greenland, we would go back to the Grand Banks again.

The spiteful winds from the Greenland hills are savagely cold. We lay at anchor in the open sea, for we could not fish in Greenland's territorial waters. The dorymen suffered tortures in the freezing air. Their faces cracked, their hands opened up, their oilskins chafed their wrists. But they were unhappy only when bad weather caused delays and they could not safely launch their dories.

Fog Traps a Doryman

Here too there was fog, heavy, cold, and blinding. One time doryman Antonio Rodrigues Chalão, a skilled man from near Oporto (Pôrto) who worked in winter as a lifeboatman by the Douro bar, was adrift five days, and we had almost given him up. He vanished in the fog and then there was a gale.

The gale blew three days, and then more fog came. But on the fifth day after he had gone the weather cleared—and Antonio Rodrigues Chalão came back! He came back smiling, but he had to be hoisted inboard with his dory, for he was all but worn out. Yet he was fishing again later that day.

I talked to him about his experience. What had he thought, down there in the frail dory?

"I prayed," he said. "I did what I could, and then I prayed, and I thought of my wife and seven children back in Portugal. The compass was out; that's why the fog got me. Then in the storm I anchored and rode to the wind, using my oars to keep the dory safe.

"And I often had to bail for my life, for the heavy sprays broke aboard. I was afraid my anchor would carry away, for my anchor line was only a piece of rope, and I would be drifted off the banks and out into the open strait. Then I knew I'd be finished."

"But it didn't carry away?"

"No. But I had to row plenty, to keep the dory head to sea. I made a bit of a shelter with the sail. I ate the raw cod, and I drank the fog moisture wrung out of my woolen cap."

That was all I ever got out of Antonio Rodrigues Chalão, after he had rowed for five days against a gale to keep a 14-foot boat head to sea beyond the Arctic Circle. The skin on his palms was chafed almost through. But he was lucky to be alive, and he knew it. The little cemetery at Holsteinsborg in Greenland has many graves in which lie drowned dorymen.

One night 15 dorymen were adrift from the schooner *Maria das Flores*, a three-master from Aveiro. When fog came down and the dorymen did not come back, all the captains kept watch and communicated with each other by radiotelephone, and the anxiety in their voices was sometimes painful to hear.

These captains carry a terrible responsibility, for it is their job to decide whether it is safe to launch the dories or not. Powerful winds funnel up and down Davis Strait, bringing sudden, dangerous seas on the fishing banks. Yet if the dories were kept nested whenever the weather threatened, then no ship would ever fish full and no doryman would make a living. The captains *have* to risk their men.

The whole fleet heaved a great sigh of relief the following morning when they learned that the *Maria das Flores's* dorymen were safe.

They had run into a Greenland fjord and sheltered under an upturned dory, and had come back to their schooner in the morning, when it was bright and clear. They had not forgotten to clean their fish when they landed, and a party of coastal Greenlanders had helped them. The Greenlanders even trimmed their whiskers and hair, so they came back much improved in appearance.

By the middle of September our *Argus* had a tolerable cargo. She'd taken enough cod to be filled many times over, but the cod kept shrinking every day and the salt formed a brine which was pumped out twice daily. The rolling of the schooner helped to pack the cargo tighter, and again and again the big fish hold was filled to the deckhead in most of its compartments, only to require filling once more.

"There is always room to stow another cod," said Captain Adolfo, and so he was always miserable. He hated to leave the grounds while there was room to put another cod aboard. The official capacity of the ship was listed as about 12,000 quintals (a Portuguese quintal is almost 130 pounds of dried fish), and she had that much aboard by the end of August.

Race Against Time and Weather

Still we fished steadily on, though the snow squalls were back and the nights were growing, and the weather grew steadily worse. The old dorymen patched their faces with tar to fill up the cracks. Their hands they had long since given up. "The good weather will heal 'em," said old Antonio. "We get the winter at home," said the First Fisher.

I began to fear we might have the winter there off Greenland. Already the long green grass was growing on the schooner's sides. Her hull was chafed all along from the dory launchings and the bumping of the dories

[94]

Snowed In? This Is No Arctic Blizzard, but Salt for Preserving Cod

Tons of salt in the *Argus*'s hold had to be moved when the cod came in. It was used up gradually as the fish were packed, but meanwhile presented a serious storage problem; eventually salt was stowed in galley bunkers, in bait rooms, and in boxes on deck. Here a deck boy shovels out one section of the hold.

alongside as the men gaffed up their day's catch of cod. The wooden decks were slippery, and sea slime grew in the waist.

But day after day the fishpounds must be filled. Night after night the dorymen, in two stalwart lines, flailed at the wet and horrible cod with their sharp knives, gutting and splitting, and the flames roared from the pressure plant for'ard where the cod-liver oil was made.

Our Captain Adolfo, silent, inscrutable, held the schooner to the grounds, shifted the ship here and there and hither and yon on the eternal quest for cod—cod and more cod, and yet more cod! The dories went over sharp at four every morning. The bait supplies were steadily shrinking.

Captain Adolfo was a kindly man by nature, and it saddened him to stay so long so far from home. Since he was a chip of a boy he had never known a summer in his native Portugal. And now it was likely that he never would. Nor would the dorymen.

At Last, Enough Cod!

Some schooners shifted back to the Grand Banks, to ride out the autumnal gales there and continue catching cod when there were lulls. Some lucky ones had already sailed full for Portugal. Still the *Argus* battled on, with the *Creola* and a handful more.

At last there came a day when even Captain Adolfo thought that we had cod enough, though not a full cargo, mark you! There

Bad-weather Deck Scene: Setting Up a Boom Tackle as an Autumn Storm Blows In

The *Argus*, like most of the Portuguese schooners, stayed north well into September to catch "the last cod." Then she scurried for home a jump ahead of the wild winter weather. Some of the ships stayed too long: the 500-ton motor ship *Ceva da Iria* sank when a hurricane caught her (page 506). These *Argus* crewmen smile as they hang on; though the gale means danger, it is blowing them, at a brisk nine knots, home to Portugal.

196

Dorymun's Grin Marks a Good Day and a Boatload of Fine Fat Cod

João de Oliveira, *Argus*'s Second Fisher, caught almost 75 tons of fresh cod this season (page 584). Here he climbs aboard after unloading his dory. Though he has put in a full day on the Grand Banks, he still faces several hours' work cleaning cod.

was still room for the odd cod. But every tank was full of cod-liver oil, every barrel on deck full of salted tongues and cod cheeks and other odd edible parts, and the hold itself was mighty near to full. Where the Plimsoll line was nobody knew, for it was hidden under the long dank grass.

For a hundred days we had eaten cod and daily supped of the midnight soup of codfish faces. The dorymen call it the "soup of sorrow," for they say that, once having eaten it, you are bound to come back to the Banks again. One hundred days of the soup of sorrow were days enough for me.

Finally our captain weighed anchor. At first the dorymen dared not believe that he was really going home. They feared that, if the weather eased, we would anchor again on one of the southern banks and cram the last cod yet again into that cavernous hold. The last cod? There was no such fish!

But the north gale blew and we raced away homeward, southbound through Davis Strait, with the *Croula* rolling her rails under beside us and the fierce wind howling in the rigging, and the cold seas creaming aboard (page 575).

Yet it was not until we had sailed past the bank of Fyllas and past the Danas Bank that the dorymen dared smile. Danas was the last large bank. The course now was southeast toward the Azores—the Azores, and sunshine, and good Portugal!

A hurricane or two smashed up from the Gulf Stream's edge and took a heavy swipe at us (page 595). The little motor ship *Cova da Iria*, caught in a maelstrom, foundered. She was 600 miles from us. The schooner *Adelia Maria* took off some of the *Cova's* people with their own dories, for a banker has a lifeboat for every man aboard. To a dorynan his dory *is* his life. If that won't save him, nothing will.

Back Home to the Sunshine

The great seas leapt at us, too, and smashed along the decks, but the *Argus* was a stout good ship and Adolfo an expert sailor. We had to heave to while our radio crackled with stories of this schooner and that schooner with dories washed overboard, dorymen gone, fishing gear smashed.

Our own dorymen on watch were roped together by the wheel to keep them from going over the side. The North Atlantic in September and early October is a wild, bad ocean.

On a sunny morning we touched at lovely Ponta Delgada, and our Azorean dorymen landed there, full of smiles. We sailed in the moonlit evening for the last few hundred miles, the happy romp home. I left the graceful *Argus*, rusty now but lofty and still a picture of romance and adventure, in an arm of the Tagus.

I looked back at her while she was in sight. Of the 45 sailing vessels and motor ships of the Banks fleet which left, 43 returned. Some brave dorymen remained to sleep forever beneath the gray old sea or under the shelter of Holsteinsborg's cold hills.

It was a great adventure that I shared with them, and I learned to regard the Portuguese as Captains Courageous indeed.*

* For a longer account of Alan Villiers's voyage with the Portuguese dorymen, see his new book *The Quest of the Schooner Argus* (Charles Scribner's Sons, New York, 1951).

The Making of a West Pointer

This Year the United States Military Academy Marks a Century and a Half of Training Men for Leadership

By Howell Walker

EARLY last July I went to West Point to see 642 young men begin a new way of life. The big day had come for these future officers entering the United States Military Academy.

Some arrived by rail, air, bus, or family car; others by bicycle or on foot. To the Point overlooking the Hudson River fifty miles north of New York City, they came from every walk of life, from every State, even from foreign lands.

At West Point's station I watched a hundred of them pile off a train like any mob of college freshmen. Mostly coatless, hatless, and swinging light luggage, they lined up raggedly at an officer's command and heard their first orders.

The candidates marched up the hill toward the towering gray halls. A loud "Halt!" stopped the group, frozen in uncertain tracks. An imperious news photographer flashed his camera, then with the same confidence called "Forward march!" Everybody laughed, but not for long.

There's nothing funny about facing plebe, or freshman, year, by far the hardest of the four-year course. Rigid educational and physical tests make it tough enough to enter the Academy; exacting standards allow no cadet to let up; and, once commissioned as an officer, he must never forget his responsibility as an exemplary leader of men.

"Get Those Shoulders Back, Mister!"

A blazing hot sun beat down on the green cadets moving up the road. Finally they filed through a Gothic sally port into Central Area, a large quadrangle formed by gray stone buildings (page 613). Here they were assigned to quarters, two or three men to a room in their new home, "beast barracks."

Now the new plebe feels the initial impact of things to come. After the first five minutes any similarity between him and a civilian college freshman meets sudden death. Seasoned upperclassmen start shouting, "Get those shoulders back! Head up! Chin in!"

Under these relentless drillmasters the plebe learns fast that the first principle of discipline is subordination. He addresses his cadet instructors always with "Sir"; impersonally, they call him "Mister" (page 608).

As long ago as 1823 a brand-new cadet wrote to his father: "The first day after my arrival I was taken out to drill & sure you never saw a more awkward creature in your life than I was or appeared to be . . . To display the Chest, draw in the Corporation, draw the Chin in perpendicular to the Chest, hold the hands down so as to touch the seams of the Pantaloons, & take care dont bend the elbows, keep the Shoulders drawn back & always be sure to keep the feet in an angle of 45° etc., etc. Indeed I had so many things to learn that I almost despaired of ever being a Soldier . . ."

The plebe thrives, resigns, fails, or is fired; he never "fades away." Because of its ultimate purpose, West Point keeps only those who can take it; so a constant weeding-out process goes on.

Poet Edgar Allan Poe and artist James Abbott McNeill Whistler, one-time cadets, both fell by the wayside. During his brief stay in 1830-31, Poe chided science—"Why preyest thou upon the poet's heart, Vulture, . . ." Whistler, ex-1855, later explained, "Had silicon been a gas, I would have been a major general."

"Will I Make the Grade?"

In a matter of hours after their arrival, the new cadets all began to look alike to me. Uniformed, barbered, and drilled in the preliminary steps of basic training, they already marched as one. On their faces I imagined I could read a common concern: "Will I make the grade?"

Even in ready-made uniforms issued this first day, the plebes seemed spruce; but in two months or so the West Point tailor shop would have finished the custom jobs which fit cadets like their skins.

Tailoring for young men whose weights vary with seasons calls for long experience with West Point's climate, routine, and cadet digestion. Recently, two brothers completed a total of 102 years of clothing "the long gray line." Of the shop's present 67 workers, 14 have served more than a quarter-century.

In 1840 a cadet named Ulysses S. Grant wrote home that his pants clung to him like bark to a tree; he could bend over or run only with fearful results. According to legend, once when the uniform order called for cross belts, Edgar Allan Poe, taking it literally, appeared at full-dress parade stark naked except for the specified item.

How does a candidate get into West Point? Well, to begin with, he must be unmarried

From Fort Putnam's Lofty Parapet, Cadets Map West Point's Hilly Panorama

As desks they use a wall remaining from Revolutionary War days when George Washington called West Point "the key to America." Putnam, built in 1779, was the strongest of a system of forts designed to thwart a British thrust up the Hudson to Albany. During ice-free months a massive chain was stretched across the river to bar hostile ships. From here, in 1780, traitor Benedict Arnold fled to join the enemy forces.

Someday These Cadets May Wear Stars Like the Academy Superintendent's

Cadet Brigade Commander G. D. Carpenter and Regimental Supply Officer J. O. Hogan, first classmen, receive orders from Maj. Gen. Frederick A. Irving, commander of the Point. Photographs of former Superintendents line the walls. Gen. Douglas MacArthur, 1919-22, appears at left; Lt. Gen. Robert L. Eichelberger, 1940–42, at right. Beside the national and Corps colors hangs General Irving's personal standard.

and between the ages of 17 and 22 years. Race, creed, or color makes no difference.

He may be nominated by a Member of Congress or the Vice President; he must then pass entrance examinations. The President may appoint sons of regular servicemen, and enlisted men in either regular or reserve Army or Air Force may apply. In these last two instances, acceptance is based on competition.

Also, there are special quotas of appointments for the District of Columbia, the Territories, and Panama Canal Zone; for sons of deceased veterans and those of Congressional Medal of Honor winners; and for outstanding graduates of recognized military and naval schools.

Law permits admission of a few Canadians, Latin Americans, and Filipinos. Other nationalities require authorization by Congress.

The authorized strength of the Academy now stands at 2,496 cadets. Graduation, discharges, and various departures normally leave about 750 vacancies each year. Many more youths apply for entrance than are accepted. About one fourth of a class fails to graduate for one reason or another.

Plebes Sworn In at Trophy Point

Toward sundown of its first day the class of 1955 paraded with admirable precision to Trophy Point, so called for its display of war relics, mostly cannon. Commanding a magnificent view up the Hudson, the tree-shaded spot is the site of a tall monument to 2,230 northern officers and men of the Regular Army who fell during the Civil War. Cadets of rebel

descent call it a "Yankee tribute to southern marksmanship" (pages 620-621).

Facing this memorial, the plebes raised right hands and said together:

"I do solemnly swear that I will support the Constitution of the United States, and bear true allegiance to the National Government; . . . that I will at all times obey the legal orders of my superior officers, and the rules and articles governing the Armies of the United States."

With this swearing-in ceremony the candidates officially became members of the United States Corps of Cadets. Then, at an order, the formation stood at ease to hear a straightforward address by the Commandant of Cadets, Col. John K. Waters.

"In you and your careers," said the colonel, "here and after graduation, lie the hopes and fears of your families, your friends, the communities whence you came, and our Nation . . .

"Cherish the honor system . . ." he continued. "In its written or spoken form it is simply: 'Cadets do not lie, steal, or cheat . . .'

"You have accepted a challenge for which you are ably fitted. In complete faith you are turning yourselves over to West Point to receive the training which has stood the test of time, not only through peace but also war, for 149 years . . . We believe in your sincerity of purpose, and we will do all in our power to develop in you a high sense of duty, an unquestionable sense of honor, and a devotion to our country."

How carefully West Point guards this code became evident last year with the mass dismissal of 90 cadets involved in cheating on daily quizzes and reviews. For its success the Academy's honor system depends more upon the men themselves than upon the supervision of the officers; every man is honor-bound to report any breach of it committed by himself or by others to his knowledge.

To the Corps the system means something much bigger than an individual, group, or personal friendship.

Not Again for a Million Dollars

For the next eight weeks the class undergoes intensive and thorough basic military training, not unlike that given any new Army recruit fresh from civilian life.

At the same time plebes learn the customs and courtesies of the service and improve their physical condition in an extensive sports program.

The new man sums up his first two months at West Point with a sentence he will repeat four years later: "I wouldn't do it again for a million dollars, but I wouldn't take a million dollars for having done it."

Meanwhile, what are the other classes doing? Each of the three enjoys a month's vacation sometime during the summer. First classmen (seniors) take a two-week plane trip, visiting selected U. S. Army and Air Force posts for advanced instruction; then they help train the lower classes.

Second classmen (juniors) receive a three-week indoctrination course in the Air Force, one week of airborne training, and two of amphibious operations.

In early July, last year's plebes (now third classmen) enter the reservation's training quarters at Camp Buckner beside Popolopen Lake. In two busy months they get a practical taste of virtually every branch of the Army, winding up with mock combat (pages 607 and 615).

By September the entire Corps has assembled at West Point for the academic year. Classes, drills, and athletics begin in earnest for all.

An Average Cadet's Average Day

Mist hid the river as I walked into Central Area at 5:45 of a spring morning. The surrounding barracks slept in stony silence, gray and cold as the dawn. Providing the only sign of life, a small detachment of the military band readied instruments for reveille. Exactly at 5:50, fifes, drums, and bugles struck up a lively tune. No wonder the cadets call these disturbing musicians the "Hell Cats!"

Lights popped on in rooms here and there. Heads popped out windows to see a flag telling which uniform to wear. Plebes scrambled frantically into their clothes, while practiced upperclassmen put off for a few moments the agony of rising. At 5:55, first-year men assigned the duty began calling off the minutes:

"Sir, there are four minutes until assembly . . . Sir, there are three minutes . . . Sir, there are two minutes . . ."

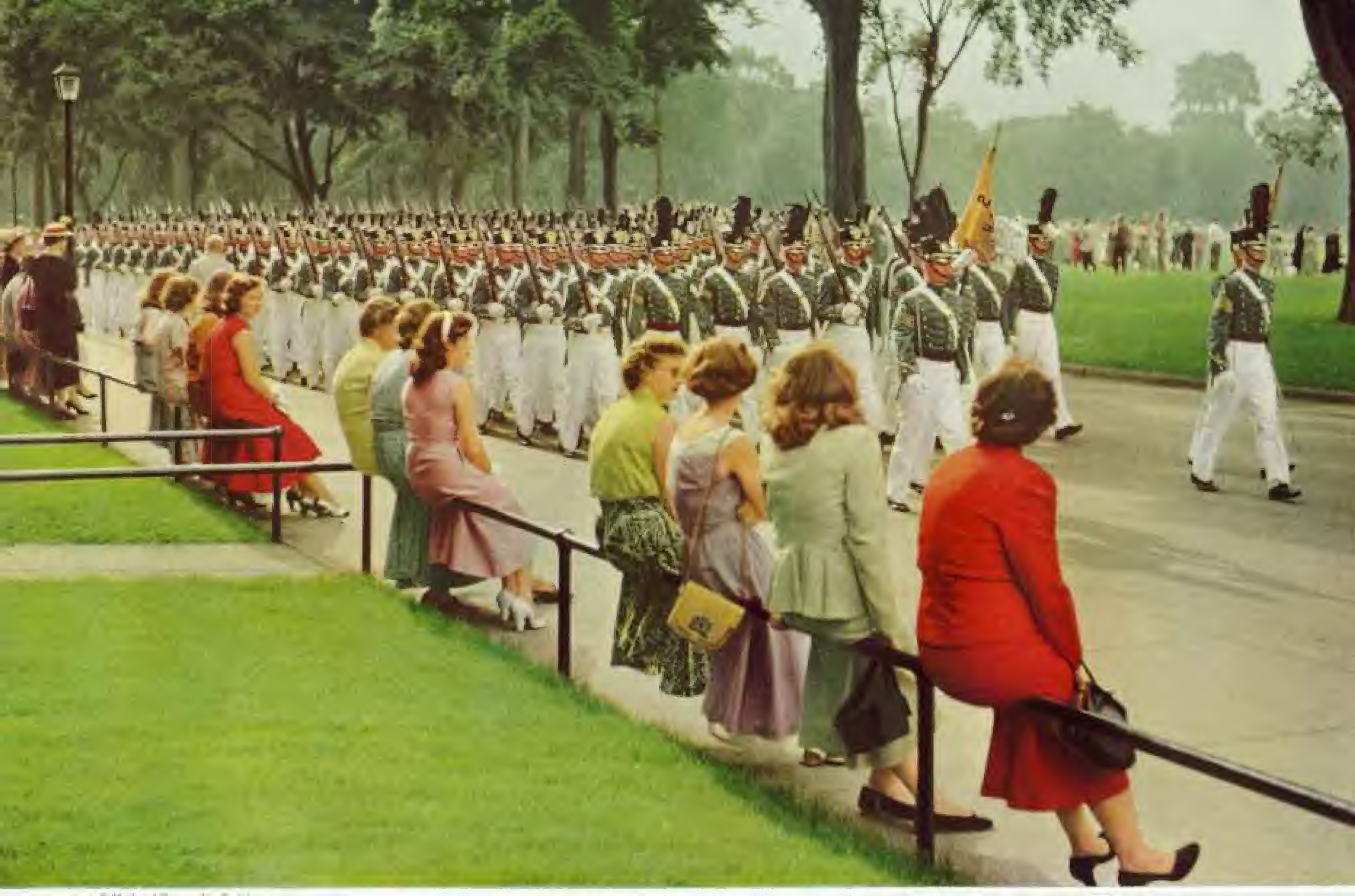
Last-moment plebes poured from the buildings to stand at attention where their companies would form. The 6 o'clock assembly, a check to see that everyone is present or accounted for, lasted only a few minutes.

Upon dismissal, the men washed, shaved, and began tidying quarters for inspection. I joined second classman E. A. Gilbert to follow him through a typical day at West Point. He introduced me to his two roommates, also second classmen. The three belonged to the same company, C-1.

For a week at a time, Gil explained, one of the three had the job of policing the room: sweeping, dusting, cleaning ash trays, emptying wastepaper baskets. Today Pete did these chores while Gil and Al made their beds, hung up clothes, put the cabinet shelves in

With Colors Flying, West Point Marches into Its 151st Year

Color sergeants, flanked by corporals, carry the flags. The gray banner bears the emblem of the Academy, now celebrating its sesquicentennial. Outstanding military ability and appearance qualify cadets for Color Guard duty.



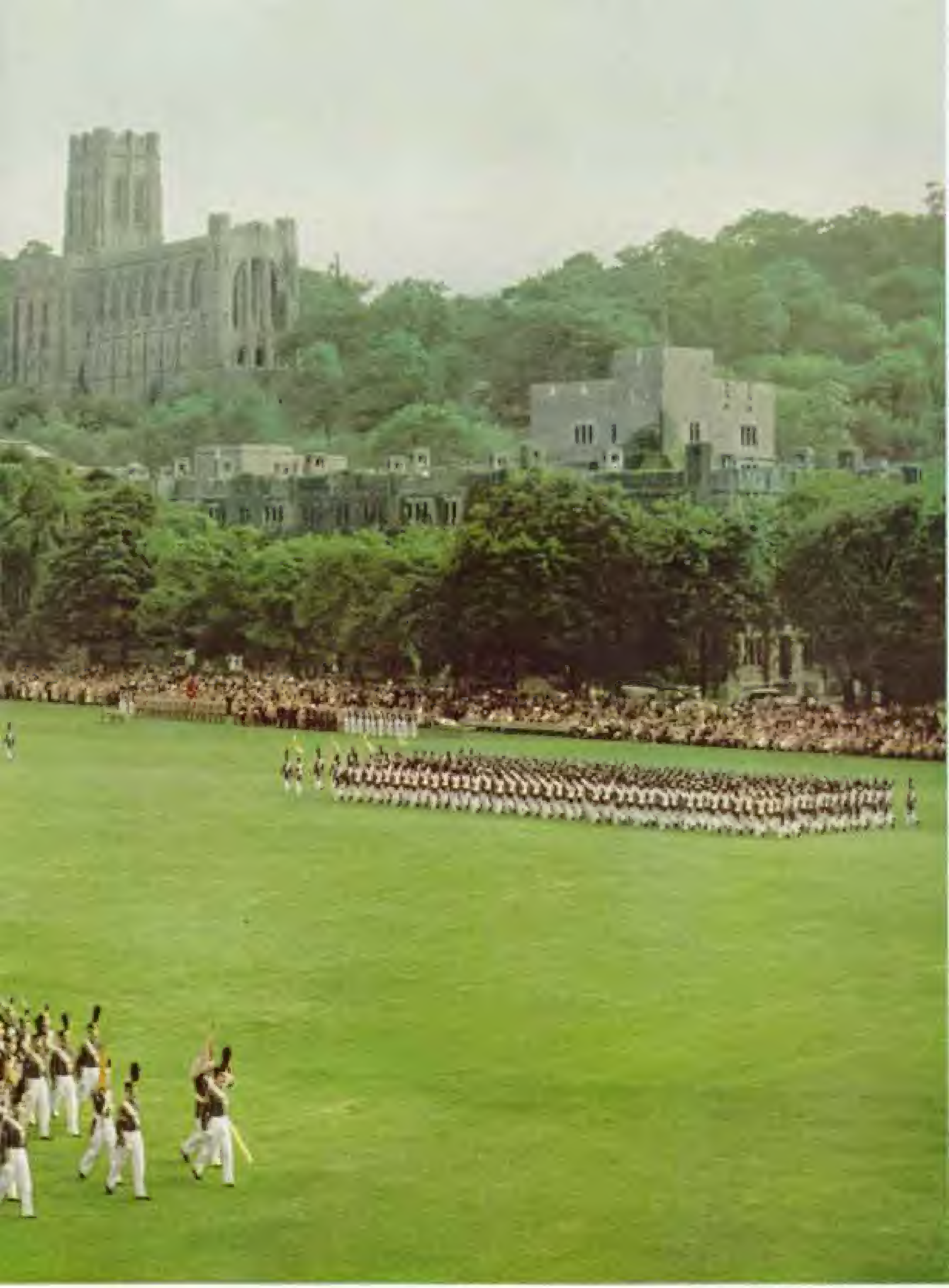
"Praise Saturday Night, and Pass the Cake!" After a Week of Drill and Study, Plebes Relax with Their Officer-Sponsor

Especially during the difficult first year, cadets are grateful for friendly advice and extra "boodle" (light snacks). The colonel's mother smiles upon the success of her baking. Opposite: Cadets in full dress march to the Plain for a June Week parade (pages 604-5). Footwearv "drags" (dates) perch on an iron fence to watch them pass.

Kodachrome by B. Anthony Stewart and John B. Fletcher

Rhythmic Ranks of Polished Cadets Pass in a June Week Review

While the band (left) plays, six battalions march over the Plain. The 2,400-man Corps then stands retreat. A cannon roars, the national anthem echoes among surrounding hills, and the Stars and Stripes floats slowly down.



With Gothic Dignity, the Cadet Chapel Watches West Point on Parade

The gray mass of native granite towers over the Plain and barracks. All cadets attend compulsory Sunday services at this chapel or one of two smaller ones. Here, following graduation, dozens of weddings take place.

Kodachrome by Howell Walker

West Point's Line of Gray, Bayonets Gleaming, Swings Past Academy Alumni Standing at Attention

A Future Officer Learns How War Looks to GI Joe

This West Pointer, in battle kit, rushes for cover during a simulated assault. He belongs to a cadet company attempting to take a dummy village held by GI combat veterans. Smoke bombs raise a dense screen. Demolition charges, bursting grenades, machine-gun and rifle fire produce sounds of battle. The highly realistic maneuver climaxes a summer of tactical training for infantry.

In a two-month program at Camp Buckner, five miles from the Academy, third classmen (sophomores) get a practical taste of nearly every branch of the Army.

First classmen (seniors) assist officers in instruction. The basic courses form a groundwork supplemented by further training during the next three years. Experience in all departments helps cadets decide in which they would like to specialize.

Camp Buckner, pleasantly situated beside Popolopen Lake, offers swimming, fishing, boating, tennis, and other sports. Twice a week cadets may invite girls to "hops."

Kodachrome by Howell Walker

"Let's See Some More Wrinkles in That Chin, Mister!"

Under his "tarbucket" (dress hat) a plebe strains to achieve an exaggerated position of attention. An upperclassman, "bracing" him, commands, criticizes, and heckles.

A Cadet Wins a Life Membership in National Geographic Society

Cadet William L. Lemnitzer, who led the 1951 class in chemistry, receives the annual American Legion award from Rabbi David Lefkowitz, Jr., of the Legion, in the presence of Maj. Lee E. Cage, assistant professor of chemistry.

Reductions by B. Anthony Stewart and Morrell Walker

perfect order, and turned to the never-ending task of shining shoes and uniform brass. "Spit and polish" becomes second nature at West Point.

But all that glitters doesn't always show. I heard of cadets who had kept goldfish in the ceiling light fixture by day; at night they transferred them to the slop bowl lest a curious officer question eerie shadows floating around the walls and over the floor.

Others, challenging Academy regulations which rule out pets, have smuggled in hamsters and housed them in desk drawers. Their keepers fed them milk brought in plebe mouths from the mess hall.

Stiffly, a plebe entered our room, left the *New York Times* on a desk, departed stiffly. The upperclassmen seemed not to notice him. Gil looked up from the black shoe he was polishing, glanced at the headlines, and with a free elbow pushed the paper toward me. But then a bell rang, signaling another formation.

At 6:30 the battalions assembled on Jefferson Road outside the barracks. Fourth classmen had to report several minutes before the three upper classes; this routine holds generally for all formations.

"Right face . . . for-r-r-d 'arch." By companies the whole Corps marched off to Washington Hall for breakfast. As the men reached the first step of the entrance stairway, they removed their caps, broke ranks, and filed inside. Plebes jogged on the double. Upperclassmen walked quietly. All went to assigned tables and stood behind their chairs.

Breakfast for 2,400

From a balcony looking down on the three long wings of the enormous hall, the first captain (top-ranking cadet officer) announced over a loud-speaker: "Take seats."

Imagine 2,400 persons sitting down at once to a meal under one roof! What planning, what kitchen organization, what service! And the food comes in hot. This happens three times a day, every day.

Men of the same company sit together, 10 cadets, including three plebes, to each of some 240 tables. Plebes have specific duties during meals: the "coffee corporal" pours coffee or tea; the "water corporal" milk, water, fruit juices; the "gunner" sees that the waiters keep the table supplied.

While eating, these fourth classmen must observe rigid forms of behavior. Always straight-backed, they may sit on only the forward half of the chair; they must keep chins well in and eyes glued to the table; they do not speak unless addressed, never without permission (page 618).

As Gilbert's shadow, I took my place next to him at a table soon amply supplied with fruit, dry cereals, scrambled eggs, toast, butter, jam, coffee, and milk. Unbending plebes jerked through the meal with machinelike motions.

Less than thirty minutes after his order to take seats, the first captain called, "Battalions rise"; all cadets left the hall for barracks.

When I re-entered my friends' room, an hour remained before the day's first class at 7:55. Al, an athlete somewhat behind in his work, went straight to his desk and opened books. At a more comfortable academic level, Gil swung his legs over the corner of a table, leaned back in his chair, and lit a cigarette. (Smoking is allowed in barracks rooms.) Pete checked everything for inspection.

To West Point via Korea

News in the paper led to talk of Korea. Gilbert, it turned out, had served there as an Army private.

"That's how I got an appointment to West Point," he explained.

He had attended a military school in Alabama but was unable to get a congressional appointment to West Point. His father advised him to enlist in the Army and try for admission to the Academy through service channels. This worked, but not before a tour of duty in Korea; there Gilbert took the competitive examination.

"It isn't unusual," he said; "a lot of cadets enter the Academy that way. About 32 percent of my class had military experience before coming to West Point."

"All very interesting," said Pete, "but we have 'juice lab' coming up in a few minutes."

With Gil and Pete I walked to the electricity laboratory. They worked as a team to set up an apparatus of intricate wires, switches, buttons, coils, lights, and what not. Baffled from the beginning, I never did figure out what they were doing. On a mimeographed page handed me by an instructor I read the object of the test: "To determine experimentally the characteristics of a vacuum tube the design data on which is that listed in the Preliminary Sheet." Is that clear?

After two hours in this laboratory, Gil and Pete had a half-hour break before the next class at 10:55. Back at their barracks, they pounced on the morning mail delivered by a plebe. Pete lost himself in a letter from his girl; almost automatically, Gil resumed polishing of shoes and brass; Al studied.

Shortly before 10:30 we walked up the hill to the filtration plant of the West Point reservoir. In connection with the study of mechanics of fluids, the class today toured this installation. Usually, the cadets receive

National Geographic Photographers B. Anthony Stewart and Donald McBain

"Every Cadet Recites Every Day in Every Subject"—a West Point Axiom Almost as Old as the Academy

To make such individual attention possible, classes are divided into sections of about fifteen men. Studies consume most of a cadet's time and provide "a balanced and liberal education in the arts and sciences." Here a cadet "sounds off" in a discussion of the history of military art.

Gloved Fists Punch and Parry in a West Point Gym Class. A Photographer's Flash at 1/5000 Second Freezes Action

National Geographic Photographers B. Anthony Stewart and Donald McBain

instruction in this course at one of the academic buildings.

Later I looked into the mechanics laboratories. On a big blackboard someone had chalked up, "Old soldiers never die; but 2d Johns do. The fluid P's don't even fade away." "Fluid P's" are professors of fluid mechanics; "2d Johns," of course, are second lieutenants.

At 12:15 the Corps formed on Jefferson Road for the march to dinner, and the Hell Cats played the companies into Washington Hall. Shadowing Gilbert as usual, I sat down to a table loaded with corned beef and cabbage, boiled potatoes, salad, buns and butter, lemonade; orange sherbet came later.

A senior cadet beside me said to one of the plebes, "Let's have the days, Mister." The fourth classman reeled off the current date, varsity athletic events and special programs for the week, coming Saturday night and Sunday shows, number of days until next Navy game, vacation, and graduation.

Plebes must always have correct, ready answers for other questions: How many lights in Cullum Hall? How many gallons in Lusk Reservoir? How many names on Battle Monument? What is the definition of leather?

To the last question one replies briskly and precisely as follows: "If the fresh skin of an animal, cleaned and divested of all hair, fat, and other extraneous matter, be immersed in a dilute solution of tannic acid, a chemical combination ensues; the gelatinous tissue of the skin is converted into a nonputrescible substance, impervious to and insoluble in water; this, sir, is leather."

Every Cadet Recites Every Day

My companions used spare time before the first afternoon class to review a chapter of Far Eastern history. No student can go unprepared to class, hoping not to be called upon. West Point has an old axiom: "Every cadet recites every day in every subject." To ensure individual attention, classes are divided into sections of about fifteen (page 610).

Entering the West Academic Building a little before 1 o'clock, Gilbert introduced me to Lt. Col. Jerry Sage, assistant professor of social sciences.

With the students I sat at one of a number of small tables forming three sides of a rectangle in front of the professor's desk. The atmosphere was one of informality; the cadets appeared at ease, yet alert.

Colonel Sage led off with questions about America's attitude toward the Japanese in Manchuria, China, and Korea during the decade preceding World War II. Hands around the room shot up as men volunteered answers.

"What about the Portsmouth and Washington conferences?" he asked, looking at me.

I felt as small as my memory. Happily, a cadet near me ended the embarrassing pause.

As the present Superintendent, Maj. Gen. Frederick A. Irving (page 599), has said, "It appears more and more evident that, in order to function most efficiently, an officer of the armed services must understand international and national politics as well as military subjects."

So West Point now prepares students to be statesmen as well as soldiers, diplomats as well as professional officers. Yet, even with this newest curricular shift, the Academy builds always on the cornerstone of a system almost

613 National Geographic Photographer Bowell Walker

West Point's Quadrangle Rings to the Tread of Future Army Leaders

Reveille blasts cadets out of barracks (three sides, foreground) for 6 a.m. roll call in the paved Central Area. An academic building occupies the far end. This view from the chapel tower includes Washington Hall (left foreground), Doubleday Field, and the Hudson.

as old as the school: teaching leadership through excellence of character and knowledge.

Basically, the real West Point got started with Maj. Sylvanus Thayer, Superintendent from 1817 to 1833. Rightly called "Father of the Military Academy," Thayer personally snapped West Point out of its early doldrums and turned it into an advanced technical college. It was the country's first, and for years its only, engineering school.

Sylvanus Thayer, grasping the country's need for engineers, made courses in civil engineering the core of the curriculum. Through the graduates of his and later days, West Point did "more to build up the system of in-

614 National Geographic Photographer Howell Walker

End of School Year Has Its Moving Moments

Seasoned cadets shift quarters in June to make room for 642 members of a new class arriving in July. The fancy tie carried by the man at right strikes a strange sartorial note among military uniforms, but it will come in handy during summer vacation.

ternal improvement [railroads, canals, bridges, harbors, lighthouses, for example] in the United States than all other colleges combined," said Francis Wayland, president of Brown University from 1827 to 1855.

All Cadets Take Same Course

Gradual liberalization of the curriculum, with less emphasis on engineering, began after the Civil War. Time has tried the trend and found it sound. More than ever, West Point today aims to provide a broad foundation of general culture in academic and military fields.

The difference between West Point's and a civilian college's curriculum is that all cadets take the same course with virtually no electives. The Academy requires study of one foreign language, with a choice of Spanish, French, Portuguese, German, or Russian; otherwise, subjects are strictly prescribed (page 619).

Specialization has no place at the Academy; that comes after graduation, when a man enters one particular branch of the service. Just which branch depends on his standing in class and his personal preference.

Cadets receive their entire education at Government expense. They receive in addition an annual salary of $936 plus an allowance for food. From the total they pay for books, clothing, board, and all personal items except lodging and medical attention.

In an average day a cadet can call only about two and a half hours his own. Normally, he works a 72-hour week. This includes study time, recitations, military formations, care of barracks and equipment.

Gil, Pete, and Al had a free hour between 2 and 3 o'clock. Instead of writing letters, reading, studying, or visiting friends, they talked with me. Oddly, no one shined shoes or brass. They explained the organization of the Corps.

"We have a brigade of two regiments," Gilbert began. "Each regiment has three battalions; each battalion, four companies. In the first regiment, companies are lettered A-1 through M-1; in the second, A-2 through M-2. [There are no "J" companies.] So, you see, there are 24 companies altogether, with about a hundred men to a company."

"What about you and athletics?" I asked.

"Al's a varsity track man," said Gilbert; "Pete and I are playing soccer on our company team. We have a match this afternoon to decide the championship of the First Regiment; C-1, that's our company, meets B-1."

"If we win," Pete added, "we get a crack at the Second Regiment's top team for Corps championship."

"What's your event?" I asked Al.

"I run the quarter-mile, but not so well

Summer Training in Field Tactics Bridges a Gap in the Academic Year

This cadet team races against time to assemble a 216-foot bridge on Popolopen Lake. Starting with 18 pontoon sections stacked on the beach, the men completed the job in 6 minutes and 35 seconds. Another group bettered this record in 5 minutes and 13 seconds. The lake lies among the highlands of West Point's reservation. Near by stands Camp Buckner, summer quarters for third classmen (page 607).

since I hurt my knee in football. Anyway, I'm training with the hope of running against Navy this Saturday."

In the tradition established by former Superintendent Gen. Douglas MacArthur, every cadet is expected to be an athlete. MacArthur's view of physical fitness appears on a wall of the well-equipped gymnasium: "Upon the fields of friendly strife are sown the seeds that, upon other fields, and on other days, will bear the fruits of victory."

Al left for track practice, and I accompanied Gil and Pete to the soccer field. Sitting on the side lines, I watched a spirited, hard-fought, fast, close game. C-1 beat B-1 for best-in-regiment. No one exhibited extraordinary skill; all showed sportsmanship and teamwork. Winners and losers appeared to get a real kick out of the contest.

"Watch Your Step, Mister!"

After their shower, my friends joined me in their barracks. Gilbert suggested we walk over to the "boodler's," a soda fountain for upperclass cadets in Grant Hall. When we returned, we found two plebes straining at attention in the room, their caps on the floor outside the door.

"What are you doing here?" snapped Pete.

"Sir," said one of them, "we were told to report to you our deficiencies at drill."

"Namely . . . ?" Pete asked.

"Dirty glove, sir."

"Out of step, sir."

"After all these months at the Academy, you certainly should know better," said Pete. "If you don't, you're mighty poor soldiers and pretty sad investments for Uncle Sam."

"Sir, the laundry . . ." but the explanation died there.

"Haven't you ever tried washing your own gloves?" Pete obviously had.

The plebes stood stiffly against the wall, looking straight ahead. The upperclassmen seemed to ignore them for the next five minutes. Finally Pete dismissed them. They turned sharply and left the room, stooping to pick up their caps from the hall floor.

For more serious offenses cadets receive demerits; punishment is marched off in Central Area. One victim of this system figured that his accumulated walking mileage would take him from West Point to Columbus, Ohio, and back.

The Corps marched to supper at 6:15. As soon as we sat down, a plebe at our table spoke up: "Sir, may I ask a question?"

"Shoot," said the senior cadet.

"Since our company won the regimental championship in soccer, sir, may the fourth classmen sit at ease during this meal?"

Request granted, wrinkles came out of chins as the three plebes relaxed and looked more human. I think I enjoyed their freedom as much as they. It was a good supper: ham and pineapple, mashed potatoes, lima beans, bread and butter, coffee and milk, salad, blueberry pie.

Charles Canham, the senior at my left, mentioned that he had served with the Army before entering West Point; the life after leaving the Academy would not be entirely new to him. Marriage would, though; he told me he planned to wed upon graduation.

I accompanied Gilbert back to barracks. On his desk we found an envelope addressed to me. Canham had sent an invitation to his wedding in the Cadet Chapel.

Cadets spend evening hours preparing for the next day's classes. Lights go out at 10:15. Men studying for examinations may have permission to stay up until 11 o'clock. Others have been known to stay up anyway, blanketing windows and chinking door cracks.

Ingenious cadets will always find ways of coping with West Point's prohibitions. Before radios were allowed in rooms, a true music lover hollowed out the wall behind his mirror and installed a set. He hooked it up so that, when the door opened, the program automatically switched off.

In the days when every room had a fireplace, every hearth just happened to have at least one loose brick. A man had to hide illicit "boodle" (food or drink) somewhere. One story tells of General Sherman's return to the Academy after the Civil War. He strode to the quarters he occupied as a cadet. Drawing his sword, he pried up a brick and revealed a cache. His smile seemed to say, "Same old place."

Relief from Daily Grind

But cadets do enjoy legal relief from parading, studying, shining shoes and brass. They invite girls to weekly dances called "hops" (page 623), or stroll with them in the wooded seclusion of Flirtation Walk by the riverside; go to week-end moving pictures and Sunday chapel services; belong to the choir, orchestra, glee, chess, radio, camera, and other clubs; and compile such publications as yearbook, magazine, and a comprehensive handbook for the entering class.

During football season the entire Corps

Dress Whites and Gay Finery Bloom at a Garden Party

At the end of West Point's academic year, the Superintendent holds a reception on the grounds around his quarters. Guests include alumni and graduating cadets with their families and friends. They stroll through flower gardens past a giant copper beech (left) to lawn tables serving refreshments.

She Admires a Birthday Medallion

West Point's sesquicentennial shield bears the helmet of Pallas Athene, goddess of wisdom and learning, over a Greek sword, sign of the military profession. The emblem symbolizes the Academy's aims. The cadet flag in background shows its reverse side; the eagle's head and helmet face the staff on both sides.

Plebes Sit Stiffly at Table

Torso rigid, not touching chair backs, plebes (freshmen) speak only with permission, or if addressed by superiors. Eyes stay fixed on plates. Ten cadets fill each of some 240 tables in Washington Hall. The mural depicts 20 great battles and 20 great generals. The chef tours tables to see whether food pleases.

Kodachromes by B. Anthony Stewart and John E. Fletcher

▲ Some West Pointers Learn Russian

A cadet elects to study one of five foreign languages: French, German, Spanish, Portuguese, or Russian. Otherwise, all classes follow the same course for four years. On the blackboard a curving arrow points to Stalingrad, where Reds trounced Germans (swastikas) in World War II. A loud-speaker blares "Attention!"

▼ Army Meets Navy in Friendly Exchange

A midshipman from the United States Naval Academy lives for several days with roommates while on assignment to West Point. As hosts study, the midshipman enjoys a nautical book. An exchange system lets second classmen (juniors) of each institution see how their counterparts live at the other Academy.

Beyond Battle Monument, on Trophy Point, Flows the Hudson River

Names of 2,230 northern officers and men killed in the Civil War appear around the halls and on the base of the shaft topped by bronze "Fame." West Point's military band plays at outdoor Sunday service (right).

Kodachrome by R. Anthony Stewart

"May Our Worship of Thee Be Natural"—The Cadet Prayer

Cadets and visitors bow heads under a leafy canopy. Normally, the Corps worships in the Academy chapel (page 605). Second, third, and fourth classmen attend this outdoor ceremony the Sunday before graduation.

The Day Comes for White-capped Graduates

During four busy years these cadets have lived and labored for this June day. They graduate with a bachelor of science degree and commission as second lieutenant in the Regular Army or Air Force.

Academic standing determines the order in which first classmen file across the platform to receive diplomas from Maj. Gen. Frederick A. Irving, Superintendent of West Point (center).

Last man, the class "goat," gets a booming ovation from the Corps and guests crowding the huge Field House. At the end of the ceremony the new "second Johns" hurl white caps aloft and abandon them to small boys or friends, who keep them as mementos.

Visiting dignitaries at the left side of the rostrum include Gen. George C. Marshall, then Secretary of Defense, the principal speaker on this occasion last June; Secretary of the Army Frank Pace, Jr., and Gen. Hoyt S. Vandenberg, Air Force Chief of Staff. Officers of West Point's Academic Board sit on the right side of the platform.

Kodachrome by B. Anthony Stewart

At West Point, Dance Is "Hop"; Girl Is "Drag"; June Is Grand

First classmen in dress whites whirl partners around the ballroom of Cullum Memorial Hall. All cadets except plebes have dances every Saturday night during the academic year. Only during spring leave and at Christmas may fourth classmen (freshmen), who must remain at West Point over the holidays, hold hops.

Some of the seniors wear dance programs tucked under left shoulder straps. Usually the party lasts from 9 p.m. to midnight. A sash on the man at left designates a member of this class's hop committee.

Completed in 1899 and dedicated to deceased officers and graduates of the Academy, the hall is the gift of Maj. Gen. George W. Cullum, class of 1833 and Superintendent from 1864 to 1866. Bronze cannon, trophies of the Revolutionary, Mexican, and Civil Wars, adorn the walls, along with tablets, plaques, and portraits of West Point's distinguished sons. That exactly 340 lights stud the ceiling is one of the numerous facts a plebe must memorize.

Kodachrome by B. Anthony Stewart

Kodachrome by B. Anthony Stewart

Flashing an Old Tradition, Swords Arch Above a New Lieutenant and His Bride

travels to New York City or Philadelphia to cheer their Army team in several major games. At Christmas all but plebes go home for vacation. Throughout the year varsity athletes travel to other colleges for matches in various sports.

From February through April, cadet-midshipman exchange visits let groups of second classmen spend several days at Annapolis, while members of the Naval Academy's corresponding class have their turn at West Point. At both institutions the guests share barracks rooms with hosts, march in formation, attend classes and meals together, and generally live the life of their counterparts (page 619).

"Since unification of the services," said an Annapolis man, "it's more important than ever that the Army and Navy become acquainted. We'll have to get along with each other for the rest of our lives, so we might as well start right now."

Times Change, Traditions Stay

One afternoon I visited the editorial office of the *Howitzer*, the fat annual of the Corps. This permanent record of each graduating class's four years at West Point is published by a senior staff assisted by underclassmen.

"Hardest thing of all," said the cadet editor in chief, "is trying to find opportunities to work on the book. Whatever time we do snatch means just that much taken from studying. Our marks suffer, but we get the satisfaction of having turned out something we consider worth while."

I heard an underling in this office ask permission of a top editor to watch a few innings of the varsity baseball game with Fordham University. The editor's answer was, in effect, "Which is more important to you—that ball game or this yearbook?"

The staff of the *Howitzer* has a pretty good idea of what's going on and what has gone on around West Point. I asked one of the senior members what changes had taken place during the past 10 years.

"This place doesn't change; it gets modified," he said. "Tradition is too strong for any drastic changes. Sure, they may have let up on the hazing, but generally things stay much the same. After all, tradition is everything here; I guess that's what makes West Point distinctive."

To the statue of one hard-riding officer some cadets pay more than passing respect. It is a memorial to Civil War Gen. John Sedgwick, a life-size figure cast from cannon captured by his corps. He still wears his own spurs, and they still spin. Tradition says that a student behind in his lessons will pass coming exams if he sneaks out in the dark of night and twiddles the general's spurs.

Even if West Point doesn't change much, times do. Traditionally, a cadet used to look to graduation for three special privileges denied him during four years at the Academy: a mustache, a horse, a wife. These days the first classmen, who wouldn't know what to do with a horse, may garage their own automobiles in the obsolete riding hall; and where cavalry once galloped, cadets of the armored-vehicle era put mileage on their new cars.

Academy Started with 12 Cadets

When the United States Military Academy opened at West Point in 1802, it had a total enrollment of 12 cadets. Now, in 1952, the Academy is celebrating its sesquicentennial with a Corps numbering 200 times that many.

America's oldest permanent Army post has expanded its once humble plant to several hundred buildings on a 15,000-acre reservation. Its more than 18,000 graduates have served the country in war and peace with courage, intelligence, and loyalty; many have distinguished themselves as generals, engineers, statesmen, and diplomats.

By their achievements these leaders of men best express the character of West Point. In our every war since the Revolution, West Pointers have helped lead the Nation to victory.

But the Academy is no Martian laboratory for supermen. Those who train here represent a cross section of able young American manhood. West Point teaches all alike that leaders are not born but developed.

Glorious June Week the Culmination

One of the greatest traditions is June Week, glorious days filled with excitement and sentiment; parades, promotion, and prizes; girls, graduation, and brides (pages 602, 606, and 624). This culmination of the entire cadet year marks the winning of a goal and beginning of a new task for every man in the Corps.

The final and most colorful parade climaxes long months of precision drilling. To the stirring tune of *Stars and Stripes Forever*, the battalions march onto the Plain in solid blocks (pages 604-5).

Hundreds of starched white trouser legs move with mechanical exactness; arms swing in perfect rhythm; brass sparkles on the sea of gray coats and on plumed full-dress helmets; swords flash among gleaming bayonets.

No spectator would guess that among those faultless ranks out on the Plain a constant babble of low voices relieves the monotony of having to represent perfection.

The moments immediately following this parade mean more to the plebes than any in the whole year. With warm handshakes they receive congratulations from upperclassmen

626 National Geographic Photographer R. Anthony Stewart

No More Bracing or Chin-wrinkling—Plebes Relax with "Recognition"

Immediately after June Week's final parade, bareheaded upperclassmen shake hands with plebes and congratulate them on surviving their toughest year at West Point. This recognition brings new privileges and adds responsibilities, but now the men can live more like humans, not automatons.

in recognition of what it takes to survive plebe life. No more bracing, no wrinkling of chins, no marching to classes. From now on they will inherit the privileges and responsibilities of upperclassmen.

Next morning comes the hour seniors have struggled toward, lived and trained for during four long years. At the simple but impressive graduation ceremony the Corps and numerous guests fill the huge Field House. The graduating class sits together in a white-capped body before a flag-draped rostrum loaded with official dignitaries (page 622).

When the speaking ends, the first classmen, in order of academic standing, file over the platform past the Superintendent, who personally hands out each diploma. The scroll represents a bachelor of science degree and a commission as second lieutenant in the Regular Army or Air Force.

Last man to receive his diploma—the "goat" of the class—gets a tremendous ovation. Then the exchange of cheers between graduates and the rest of the Corps shakes the building.

The first captain calls "Class dismissed," and the Nation's newest second lieutenants throw their obsolete white caps toward the high ceiling in a final traditional gesture.

Whether their assignments take these officers to Georgia or Germany, California or Korea, they will go prepared because West Point made them so. They have learned, not left behind, a motto that everywhere and always calls for "Duty, Honor, Country."

So they go; but others like them move up to take their places in the "long gray line" as West Point marches on.

For other accounts of life at the service academies, see, in the National Geographic Magazine: "Midshipmen's Cruise," by Midshipmen William J. Aston and Alexander G. B. Grosvenor, USN, June, 1948; "Annapolis, Cradle of the Navy," by Lt. Arthur A. Ageton, June, 1936; and "West Point and the Gray-Clad Corps," by Lt. Col. Herman Beukema, June, 1950.

Cyprus, Idyllic Island in a Troubled Sea

Britain's Eastern Mediterranean Base Has Known the Tramp of Many Armies, but Its Countryside Is Changeless

By Jean and Franc Shor

With Illustrations from Photographs by the Authors

ROYAL AIR FORCE jet fighters roared low over gnarled olive groves near ancient Nicosia, capital of the sun-drenched island of Cyprus.

In quiet contrast, farmers and their womenfolk sickle-harvested golden fields. Stolid oxen dragged wooden sledges around threshing floors of hand-hewn stone. Men in homespun winnowed the grain by tossing it against the sky.

Jean and I pulled our British sports car off the highway to photograph a lanky shepherd tending a flock of fat-tailed sheep. With goatskin pouch and cloak of many colors, he seemed a character straight out of the Old Testament.

Then the whistling roar of a jet plane shattered the illusion and scattered his sheep. His burro kicked, brayed strident protest, and took off across the fields.

"It's nothing," said the shepherd after he had reassembled the wild-eyed animals. "Always Cyprus has been a base for other men's armies. My grandfather sold sheep to feed British sailors, and his father sold meat to the Turks. Now my flock feeds English parachutists.

"Soldiers pass on the highway or fly overhead, but they don't change the way we live."

Strategic Cyprus Key to Near East

Jet planes are only the latest war gear in the long and troubled history of Cyprus. Since the dawn of time its strategic location, only 45 miles south of Turkey and 65 miles west of Syria, has made it a coveted prize of warring nations (map, page 631).*

Egyptian warriors first conquered Cyprus about 1500 B.C., and nearly a dozen empires ruled it before the island became an important British dependency 74 years ago. Today it is Britain's key to control of the Near and Middle East.

During last year's disturbances in Iran, British planes and troops stood poised on Cyprus, ready for action if British lives were threatened (page 657). When violence flared in Egypt over the Suez Canal, the crack 16th Independent Parachute Brigade flew from Cyprus to the trouble spot.†

Jean and I reached Cyprus by ship from Beirut. From the captain we learned that the island is many things to many people.

"We have honeymooners from Cairo heading for a secluded hotel 6,000 feet up in the mountains," he said.

"An American oil man and his wife, stationed in Damascus, are looking forward to a vacation of swimming and sailing at Kyrenia.

"A Greek archeologist plans to study excavations at ancient Curium.

"The Roman artist you see there in the beret is going to copy 12th-century Byzantine frescoes.

"A professor from Beirut's American University is on his way to study medieval castles and Gothic churches on Cyprus.

"There's a retired British Army officer with us who is moving to the island because living costs are lower in Cyprus. And the American exporter you met is planning to set up an office in Nicosia."

Cities Booming, Country Unchanged

Cyprus, we found, has felt the touch of progress. In booming cities, glass-bricked modern homes rise in the shadows of ruined medieval palaces. Gleaming shops offer the latest British and American products. Smooth highways crisscross the island.

But outside the cities, off the main roads, live people like the shepherd near Nicosia who cling to the old ways.

About 65,000 of the half-million people of Cyprus are farmers. From their lands come citrus fruits, wine, vegetables, grain, seeds, and carobs, a bean used as fodder. Farm products account for more than a quarter of the island's exports, which total some $30,000,000 a year.

Except for about 80,000 islanders of Turkish descent, and other small minorities, the people of Cyprus are Greek in heritage, language, and religion. Their traditions survive from classic times; a Greek of the Golden Age would feel at home in the mountain villages and small farms of Cyprus in 1952.

A Greek festival took us first to Famagusta, busy seaport on the island's eastern coast.

* See "American Fighters Visit Bible Lands," by Maynard Owen Williams, National Geographic Magazine, March, 1946.

† See, in the National Geographic Magazine, "Journey into Troubled Iran," by George W. Long, October, 1951, and "The Spotlight Swings to Suez," by W. Robert Moore, January, 1952.

628 George Pickow, Three Lions, Inc.

A Cyprus Farmer Tosses His Wheat to the Wind. Kernels Fall, Chaff Blows Away

One 14th-century traveler called this the richest city in the world. Legends tell of a merchant prince who kept five hundred hunting dogs, with a servant for every two dogs, and of a magnificent banquet at which guests were invited to help themselves from golden bowls heaped with precious stones.

Today in Othello's Home Town

Famagusta's days of riches ended when Genoese troops captured the city in 1372. Under Venetian occupation many of its magnificent Gothic buildings were destroyed, and a wall, fifty feet high in places, was thrown around the city.

Today Famagusta is a magnificent example of a fortified medieval city. Its fortifications include a tower where Cristoforo Moro, the Venetian lieutenant governor, had his home. He is thought by some scholars to have been the model for Shakespeare's Othello.

When we passed through the massive walls, Famagusta's annual Flower Festival was in full swing. By tradition, this ceremony is held on May 1, but Famagustans, afraid that Communists might turn their celebration into a political demonstration, now hold it later in the month.

Hundreds of schoolgirls in Grecian robes paraded with flower-covered floats. Before an audience of thousands, the girls presented ancient Greek dances (page 637).

The dances were meant to be serious; chance ended them on a note of hilarity.

On a stage in mid-field a pageant portrayed the slaying of a young god by jealous wood nymphs. As he died, the robed girls sank to the floor, covering their heads in grief. There they remained for several minutes.

In the front row of the open stands sat the five-year-old brother of one of the dancers. When his sister remained motionless

639 © Emil Bruguet, Prs

Nicosia, Circled by Medieval Walls, Is the Capital of Modern Cyprus

Located in the island's broad central plain, Nicosia is an archeologists' paradise. Excavations in the area have uncovered ruins of civilizations dating back to the early Bronze Age, about 3000 B.C. The present city has been the capital since about A.D. 1200. Today's Nicosia is a hodgepodge of old and modern, East and West. New glass-fronted shops compete with time-honored covered bazaars. Visitors can watch European-style night-club shows or whirling dervishes. Here in the old quarter bicycles equipped with baskets crowd a busy street; a solitary automobile stands near a mosque. On a crumbling wall an advertisement extols a canned milk "for children's health."

Tails of Cyprus Sheep Bulge with Fat

Fat-tailed sheep are raised throughout the Near East, but not only for wool, meat, and milk. Their tails, which weigh up to 35 pounds, yield another valuable commodity—a fat prized as a delicacy and used in making pastes.

In times of drought, when forage is scarce, fat stored in the tails serves the sheep as a reserve supply of nourishment in lieu of food.

Cypriotes told the authors that some sheep grow tails so heavy they must be mounted on little carts and towed by the animals.

This shepherd, near Nicosia, proudly posed with his flock, then held the tail of his biggest ram for a close-up.

A National Geographic Map

From Her Cyprus Stronghold, Britain Watches Over the Near and Middle East

From airfields on the island, RAF jets can reach Cairo or Suez in minutes, the Balkans or the Soviet border in an hour. Moscow is 1,400 miles away—about as far as from Denver, Colorado, to Washington, D. C. Cyprus, chiefly Greek in custom and language, has been a British dependency since 1878.

so long, he began to worry. Finally he left his seat and ran as fast as his short legs could carry him to his sister's side.

For a moment he stood looking down at her, then walked slowly around her motionless form. In a desperate effort to rouse her, he poked her sharply in the ribs. The surprised girl leaped to her feet with a scream, and the crowd dissolved in laughter.

We spent the night with George P. Georghiou, a noted artist. His career illustrates the island's easy-going way of life.

A lawyer and man of property, Georghiou was a leading figure in Famagusta's business life. One day he failed to appear at his office. A week went by, and clients and friends, worried, visited his home. They discovered him busily painting at an easel. He found the practice of law dull, he told them, and had decided to become an artist.

Winning success, Georghiou has had one-man shows at Oxford University and in Paris. Museums and private collectors have bought many of his paintings. With him we toured the city.

Perhaps the most beautiful relic of Famagusta's glorious past is the Cathedral of St. Nicholas, now a mosque for the city's Turkish minority (page 634).

Modern Famagusta, like all Cyprus, is a

striking blend of past and present. Late-model automobiles squeeze through narrow, winding streets, blasting their horns at donkey riders, horse-drawn carts, and crowds of pantalooned Cypriotes, brightly dressed Turkish women, and black-robed Greek Orthodox priests.

Coppersmiths ply their ancient trade in open-fronted shops next to modern establishments offering the latest in English woolens, cashmeres, and American novelties.

On the city's water front, brightly painted caïques lie at anchor alongside smart motor launches (page 635). Ruins of Gothic churches cast shadows on modern houses. In offices and homes a customer or visitor is invited to sit down while the host sends for cups of thick, sweet Turkish coffee. In they come on a brass tray carried by a barefoot boy from a streetside stand.

DDT Wipes out Scourge of Malaria

Not long ago malaria was the scourge of Famagusta. Soon after the war, island health officials launched a campaign against the anopheles mosquito. Teams of workers armed with DDT guns covered Cyprus from end to end. About a year ago the island was officially declared free of the dread disease for the first time in history.

Returning to Nicosia, we soon found that East and West meet in Cyprus, sometimes violently. The first day there our taxi, weaving through narrow, crowded streets, rounded a corner and sideswiped a bicycle. The cyclist careened into a baggy-panted farmer, who fell against a plodding donkey loaded with melons. The frightened beast leaped onto a sidewalk, and the basket on his back smashed a shop window, scattering the melons amid a display of plastic dishware.

Driver, cyclist, pedestrian, and donkey herder waved their arms and shouted in furious argument.

"There," said Jean, "you have 2,000 years of progress compressed into one accident."

After settling the uproar as best we could, we looked up Mr. G. F. Jarratt, director of the Cyprus Tourist Development Office. Expecting us, he had arranged a visit to the 17th-century Mosque of the Dancing Dervishes.

As we entered a large chamber at the end of a long, domed corridor lined with tombs, the head dervish, seated in the center of the floor, was chanting a nasal refrain. Around him squatted half a dozen dancers. Perched in a gallery, flutists and drummers played a plaintive, throbbing melody.

Suddenly, at a signal from their leader, the dancers rose, threw off colored cloaks, and stood clad in white jackets and breeches. Slowly they approached the leader, bowed, crossed their hands, and began whirling. Around and around they spun, holding their arms straight out and circling the chamber as they twirled.

Faster and faster went the wild, whirling dance. It lasted nearly forty minutes.

Suddenly, without any signal visible to us, the silent, expressionless dervishes dropped to the floor and lay motionless. Attendants threw the cloaks over the prostrate forms.

The dancers arose, apparently not even out of breath from their fantastic performance, slowly filed past their leader, kissed his hand, and left the room. But as we left, Jean and I were dizzy, just from watching.

The next day Jarratt introduced us to his assistant, a young Cypriote named Renos Wideson, who would be our guide and interpreter.

On our first evening together, Renos took us out for a Cypriote meal of skewered lamb, *kebab*. We drove through alleylike streets, past half a dozen kebab stands empty of customers, to a tiny shop built of corrugated iron and old boards. There a throng was gathered in front of an open charcoal grill.

"Your Mr. Emerson was right when he said that if you build a better mousetrap than your neighbor, the world will beat a path to your door," Renos said with a smile. "There must be a hundred kebab shops in Nicosia, but this man makes the best, and everyone comes here."

Kebab Sandwich Makes a Meal

When our turn came, the proprietor drew half a dozen skewers of lamb from the grill for each of us. He took a large circular piece of flat Cyprus bread and cut it in half. Then he split one half, dropped roast lamb from the skewers into the cleft, and sprinkled it liberally with onion and chopped parsley. Over the meat he squeezed the juice from an enormous Cyprus lemon. He handed it to Jean and made two more for Renos and me.

Jean's eyes widened as she bit into her sandwich.

"This is the place for me," she said with her mouth full.

I tasted my sandwich and agreed. For the rest of our stay in Nicosia our modern hotel never saw us at dinnertime. A 15-cent kebab sandwich was all either of us could eat, and we never tired of their delicious flavor.

With Renos we drove into the mountainous interior to visit two small Byzantine churches at Asinou and Lagoudhera.

Our hearts were in our mouths much of the time, for the roads of Cyprus are narrow, and when two cars pass each must get its outside wheels off the pavement. Drivers stay on the hard surface as long as possible. They

"Welcome to Cyprus!" A Yialousa Girl Says It with Fruit and Water

Visitors spear and eat a piece of the preserved fruit, swirl the fork in the tumbler, and sip the water. Hospitable Cypriotes press this refreshment upon all guests in their gracious homes.

↑ Gothic Cathedral of St. Nicholas Became a Mosque When Turks Captured Famagusta in 1571

Moslems still worship in the 14th-century structure, which they call the Mosque of St. Sophia. Here Cyprus's crusader kings received crowns, for the island was long an outpost of crusading Christianity in the Near East; its last queen ceded her kingdom to a doge of Venice in 1489. Venetians lost Cyprus to the warlike Turks. Below: Small craft lie in the lee of Famagusta's medieval walls. Flags fly on Empire Day for Britain, trustee of Cyprus.

Schoolgirls Blossom Out in Classic Greek Styles for a Flower Festival

Blossoms deck houses and shops during Famagusta's spring celebration. Hundreds of girls in the flowing robes of ancient Greece parade through the streets; they dance as Greek women of Cyprus danced more than 2,000 years ago.

A young woman of Pitil weaves the cloth that has made her mountain village famous. Scornful of patterns, she works from memory. She had to learn a score of intricate figures by heart before her mother allowed her to work the family loom. Her small designs, covering bedspreads and dresser scarves, bear descriptive names such as butterfly, small octopus, black eyes, fish bone, lentil comb, and lottery.

Gold lace and shimmering silk adorn a Famagustan beauty at the door of an old church. Once such finery was common; now only special occasions bring it out.

This Farmer Happily Prolonged His Siesta to Oblige the Authors. "Loafer!" Shouted His Wife, Toiling in the Sun

"Always glad to help a stranger," the man smiled, settling back against the gnarled olive tree. He and his spouse, aided by their children, work breeze-swept acres beside the blue Mediterranean. All their gear, including clothes, jars, boots, and tools, is homemade

Mystic Blue Spots "Protect" Oxcarts

To ward off ill luck, some farmers in north Cyprus daub their carts. Scholars think blue had special meaning in a long-ago local religion.

This man and wife harvest wheat without power equipment. They belong to the island's Turkish minority, about 18 percent of the population.

More than 15 percent of Cypriotes earn their bread from the land; most are independent farmers.

These shy Turkish moppets hid from the camera until they saw their parents pose unharmed.

Reproduction by Dean and Frank Muir

Puzzle: Find the Mule! Long Ears Stick Out Above the Boy

This six-legged convoy hauls a leafy load trimmed from orchard and olive grove.

Fuel is scarce in Cyprus, and brushwood is prized. Dried, the leaves and sticks serve as kindling. Heavier branches cook meals.

Mountains belong to a limestone chain rising more than 3,000 feet along the north coast.

▼ Two youngsters, straw-hatted against the summer sun, start a shopping tour in Limassol. For posing, they exacted pink lemonades.

Right: A fezzed Turkish patriarch does the marketing, man's chore in conventional families of Famagusta. While bargaining he chats with old cronies and catches up on gossip.

Homemade Silk Helps Fill Cypriote Girls' Hope Chests

Cyprus has long had a sizable home silk industry. Farmers raise the worms to provide a cash crop. Their wives and daughters boil the cocoons, unwind them, reel the raw silk, and toss the dead silkworms to pigs.

A Cypriote girl tries to include in her hope chest enough cloth to last her a lifetime and make clothes for her future family. As a result, she spends a good many of her early years spinning, weaving, and embroidering.

Silk production is limited by the fact that Cyprus can raise only one crop of mulberry leaves a year to feed the worms. The Government assists the industry by issuing silkworm eggs, improving the breed, and sending instructors into homes.

These Vialousa women weave a fine material called *itare*, combining silk thread with cotton filaments.

Kodachrome by Jean and Bruce Shor

Women of Kornos, Shaping Jars, Spurn the Potter's Wheel

This remote hamlet lives by its pottery; Kornos exports jars for wine, water, and olive oil all over the eastern Mediterranean. Women mold the vessels from red clay; practiced eyes and hands achieve almost perfect symmetry.

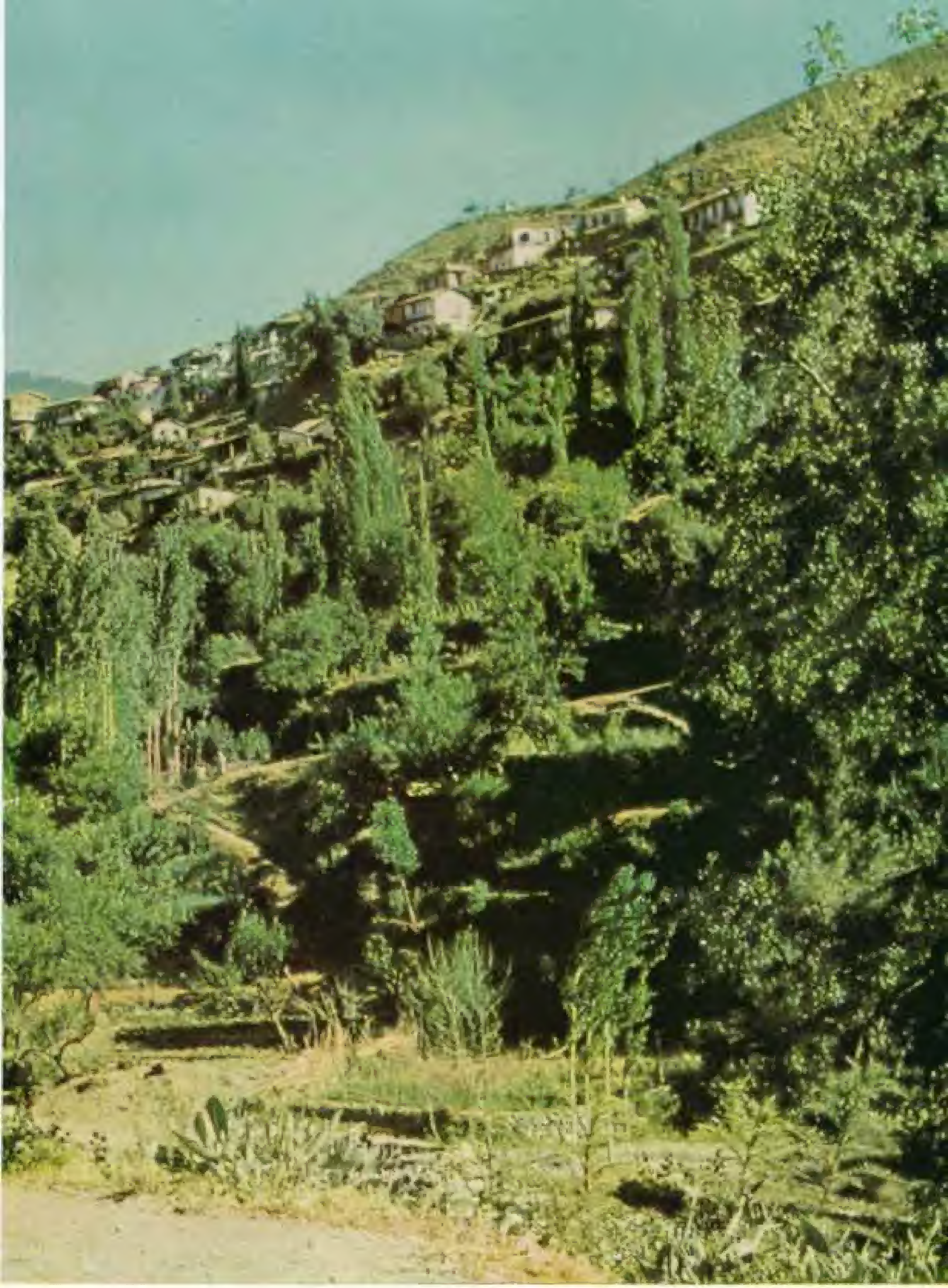
Husbands and sons do their share; they cart the jars to market and collect the cash (right).

Cyprus has long been famous for its wine. Medieval travelers wrote of the Cypriote vintages which "as they grow old . . . turn from black to white." Thousands of families still depend on their vineyards for a living.

  Kodachromes by Jean and Franc Shor

Like Its Terraced Vineyards, the Village of Kalopanayiotis Goes Up in Stairsteps

Law requires that milk goats be tethered lest they graze the country bare, as their kind has done on many Mediterranean islands. Sun-drenched foothills stretch out from near-by Mount Olympus, 6,403-foot pinnacle of Cyprus.



645 Kodachrome by Jean and Franc Miele

Vacationists Find Relief from Summer's Heat in This Air-conditioned Retreat

Cool nights, health-giving mineral springs, and frescoed medieval churches attract visitors during the May-to-September season. Time stands still in the old-fashioned town. Its year-round population is 1,700.

Kodachrome by Jean and Franc Shor

Boats and Water Lure Boys the Whole World Over. These Youngsters Practically Live in Limassol Harbor

Prickly Pears and Grape Leaves Provide Delicacies, but Wheat Remains the Staff of Life

Toughened hands hold spiny fruit of the cactus (left). The mustachioed wheat farmer wields a homemade winnowing fork tipped with metal. Vine leaves, wrapped around steamed meat and rice, flavor Cypriote cookery; the gesturing Turk offers a lunch for three small coins.

Kodachromes by Jean and Franc Shor

Kodachrome by Jean and Franc Miele

Sunshine Floods the Crumbling Passages of Centuries-old St. Hilarion Castle

Medieval Venetians dismantled the stronghold; earthquake and time piled up destruction. Still imposing, the ruin crowns a mountaintop. It is named for a hermit who lived on the site. The visitor is an American.

drive straight down the middle of the road, charging directly at each other, until the last split second. Yet we never saw an accident.

The tiny Church of the Blessed Virgin Mary at Asinou was built about 1100. Its early frescoes, still bright and colorful, are among the finest of their kind in the world.

From Asinou to Lagoudhera we bounced over winding country roads, pausing for an occasional flock of fat-tailed sheep (page 630) and stopping for lunch at a little village.

Capers Bring Islanders Profit

The town had no restaurant, but a hospitable woman offered to feed us in her one-room home. Quickly she produced a lunch of eggs, goat cheese fried crisp brown in olive oil, and a salad of pickled caper leaves.

The Cypriotes, Renos told us, export their capers, which bring a luxury price in world markets, and save the leaves for home consumption. They have much the same delicious flavor as the capers themselves.

At Lagoudhera we visited the Church of Panayia Tou Arakou. The paintings here, dating from the 12th and 13th centuries, rival those of Asinou and are in equally good condition (page 659).

An aged Cypriote ushered us through the chapellike church, beaming with pride. A few years ago he had been a prosperous farmer. Then the Virgin Mary appeared to him in a dream and told him to devote his life to the care of the church.

Obediently the man sold his farm, gave the proceeds to the church, and went to live near it. He keeps a few goats in the courtyard and tends a little garden; near-by villagers supply his few wants. He keeps the unused church spotlessly clean, tends the oil lamps which hang before the portraits of Christ and the Virgin, and leads a secluded life, faithful to his trust.

Coasting down out of the mountains at Xeros, on the north shore, we watched a puffing donkey engine push freight cars loaded with copper ore to the end of a long pier. Lighters ferried the ore to freighters bound for western Europe and America.

"The ore comes from the Mavrovouni Mine," Renos told us. "Copper has been taken from the area for more than 5,000 years."

Our very word "copper" comes from Cyprus, by way of the ancient Romans. They called the metal *Cyprium aes*, or Cyprian brass, because they found their best copper here. From the Latin term, later contracted to *cuprum*, came the English word "copper."

For a few days we lingered in Kyrenia, seaport on the island's northern coast (pages 650-651). Our headquarters was a modern hotel where three excellent meals a day and a room overlooking the sea cost the two of us only seven dollars.

Medieval Kyrenia was a fortified town, but its walls have long since crumbled into dust and only two stone towers still stand. The massive Castle of Kyrenia remains, however, and its thick walls and high towers give ample evidence why the Turks were never able to capture it by assault (pages 660-661).

The British 16th Independent Parachute Brigade occupied the castle when we visited it. The incongruity of this modern military unit occupying a structure which dates from the days of armored knights, crossbows, and catapults was striking.

The paratroopers continued the medieval tradition of changing the guard, a ceremony in which the key to the castle is passed from watch to watch.

With troops standing smartly at attention, the officer of the guard being relieved marched stiffly forward, saluted, and handed the key to the new officer of the watch. Then, to the roll of drums, they marched back to place.

Jean wanted a close-up of the actual passing of the key, and we asked the colonel if the men would repeat the ceremony, holding the key in plain view. There was a whispered consultation, a long moment of embarrassed silence, and then the colonel explained.

"There *is* no key," he said. "No one has had a key to this castle for 400 years. The guards simply go through the motions."

High above the town of Kyrenia, commanding the seaport coast for miles, stand the ruins of 13th-century St. Hilarion Castle. From the town the castle atop its rocky peak looks like an illustration from a fairy tale.

At dawn we drove up a twisting mountain road to a spot near the foot of the castle, then climbed for an hour up long flights of stone steps to reach the ravaged interior (opposite page).

Chivalry Through Picture Windows

Venetians dismantled the castle in 1489, fearful that it might fall to the Turks, but the ruins give a clear picture of its former greatness. Inside the thick stone walls were quarters for knights and nobles, stables, storehouses, cisterns, and chapels. The fortifications enclosed the whole mountain peak.

Far below spread a level field once used by knights for jousting. Through huge picture windows the ladies of the court watched tournaments without leaving their apartments.

A short drive took us from St. Hilarion to seaside Bellapais Abbey. This 13th-century Gothic building has been rocked by earthquakes, battered by invading armies, and sacked by Turks, but its weathered brown walls still hold beauty and charm. Its refec-

650

Man-made Sea Walls Enclose Kyrenia's Tiny Harbor

Kyrenia, on the northern coast of Cyprus, was a refuge for feudal rulers during times of invasion. Not only was the castle considered impregnable, but the harbor provided a supply route when an enemy cut off land approaches. Remains of an ancient lighthouse still stand in the inlet.

In modern times Kyrenia Castle has served as a prison, a storehouse, and a garrison for British soldiers (pages 660-661). British troops continue the medieval ceremony of passing the key from watch to watch when changing the castle guard. But Mr. and Mrs. Shor found that the key is as unreal as a ghost (page 649).

tory represents the finest flowering of the Gothic style, with deep windows that afford breath-taking views of the sea and the distant Turkish coast.

Today only a caretaker, devoted to his garden, dwells within the crumbling walls.

On the northwest shore one day we passed a cluster of bright new houses.

"That's the town that owes its existence to goats," Renos said. "The Government recently passed a law banning the animals from certain national forests. They eat the ground

631 © Aerofilms, Limited

bare, and the water runs off so fast floods sometimes result.

"The residents of a village in one of the forests protested that their flocks were their only source of income. So the Government built a new village here, moved them down, and now everyone's happy."

From Kyrenia we drove to the mountain resorts of Troodos and Platres. The Monastery of Saint Mamas, in the village of Morphou, called for a stop. This saint, Renos told us, is a favorite of the islanders.

The holy man, so the story goes, lived in a secluded wood in the northern part of the island. Since he seldom ventured from his cave, never used the public roads, and took no part in island activities, he felt he should not be required to pay taxes. The duke who ruled Cyprus, however, felt differently and sent soldiers to arrest him.

As they led the saint to Nicosia for trial a lion leaped into the road and attacked a lamb. Saint Mamas gestured, and the lion halted. Gathering the lamb in his arms, the saint climbed onto the lion's back and rode the animal to Nicosia.

Up the steps of the duke's palace he rode, and into the throne room. There the amazed ruler decreed that never again should he be molested by tax collectors.

"If we can find a lion in Washington, D. C.," said Jean, "you might try that on the Collector of Internal Revenue."

Beyond Morphou we left the coast road and climbed steep mountain roads to Troodos. In Nicosia summer temperatures of more than 100° are common, and islanders and visitors alike seek refuge on the cool, pine-covered slopes of the mile-high mountains.

Carefully tended forests shelter many resort hotels, and visitors come from all over the Near East each year for relief from the intense Mediterranean heat (pages 644-5).

Mystery of the Disappearing Shoes

Again we were pleasantly surprised by the low cost of Cyprus luxury—our room and board in a fine hotel totaled only six dollars a day.

The proprietor told us of his difficulties in training near-by villagers for modern hotel service.

"We operate as a continental hotel," he said, "and guests put their shoes outside the door at night for the 'boots' to shine. Last season on three successive nights a pair disappeared. We searched everywhere but couldn't find them.

"The fourth day I saw a new chambermaid walking home after work, a pair of shoes in her hand. I asked her where she got them.

"'I found them,' she replied. 'One of the guests put them outside his door to be thrown away. And do you know, this is the fourth pair I've found in as many days!'"

Skirting the island's western shore, we stopped in the modern town of Ktima, near the site of ancient Paphos.

A tiny cove near by, sheltered by high cliffs, is the legendary birthplace of Aphrodite. It is easy to imagine why the Greeks believed that here the goddess of love and beauty rose from the sea. The water is an incredible blue; white rocks tower from the cerulean depths, and the surf, as it washes the shore, is covered with bubbling, creamy foam.

We parked the car and gazed in silence.

637 George Rodger, Magnum Photos, Inc.

Heads Snap Right in Salute as "Cyprus's Own" Swings Smartly Past the Governor

Sir Andrew Wright acknowledges the military honor in a review of the Cyprus Regiment. An all-volunteer unit organized in 1940, this regiment fought with distinction from North Africa to victory. Earlier, Cyprus sent to France the very first colonial troops to serve with Britain's Army there during the war's pre-Dunkirk phase.

half expecting to see the goddess herself come drifting in on a sea shell.

A few miles farther on, the ancient city of Curium, long deserted and covered with the waste of centuries, is being excavated by the Museum of the University of Pennsylvania. Atop cliffs towering above the lapping waves, archeologists have uncovered a theater and baths dating from early Greek and Roman times.

Intricate mosaics cover the floors of the baths. One of them, only recently uncovered, contains an inscription which, the Museum says, "is perhaps the earliest monumental record of Christianity in the Greek world."

Near ancient Paphos itself lie the remains of an enormous Temple of Aphrodite. Not far away stands a more recent monument, a broken marble pillar. To it, according to island legend, Saint Paul was tied and lashed for daring to preach Christianity on Cyprus.

A Village That Lives by Its Looms

After spending the night in Paphos, we left early for a drive into the hills to the village of Phiti, famous for its weaving. Vineyards clothe the hills of western Cyprus: we drove through miles of neatly tended terraced vines.

In Phiti we eased the car through narrow lanes and stopped in front of a weathered wooden door in a high mud wall. In a flower-covered courtyard an aged Greek matriarch, dressed in shawl and flowing skirt, welcomed us with glasses of native wine. Not until we had rested and finished our drink were we shown into her house, where her daughter was hard at work at a loom which filled much of the small living room.

To our astonishment, the girl worked without a pattern (page 637). Half a dozen intricate designs were taking shape in the dresser scarf she was making, and each was formed from memory.

Village girls start weaving early. They practice each of the patterns until they know the hundreds of necessary motions by heart. Not until they are proficient in more than a score of patterns are they allowed to work at the family loom.

Roxandra, our hostess, insisted that we share her family's noon meal. Served in the sunlit courtyard, it was a feast of fried cheese, caper leaves, smoked pork, sausages soaked in wine, coarse bread, and cool bottles of wine from the family cellar. After lunch, over small glasses of native brandy, our hostess spoke sadly of the decline of her village.

"Only a few years ago," she said, "we had

more than five hundred people here. Our men tended the vineyards and sold grapes to the big wineries in Limassol. The women kept the gardens and flocks, and our weaving helped us live well.

"After the war wine prices dropped, and crops were bad. The people of our village had a hard time. Many of our young men had served in the British Army and traveled to other countries. Not satisfied with the simple life of Phiti, they began to emigrate.

"Now nearly two hundred of the men have gone abroad. Many have taken their wives and families. They are in South Africa, Australia, and England, working as farmers, waiters, and cooks. The village is very lonely, and it's especially hard on the girls."

Emigration an Island Problem

The plight of Phiti, Renos told us as we continued our circuit of the island, is typical of many Cyprus villages. Numbers of the younger men are emigrating. We asked Renos if he planned to leave his homeland.

"Never," he said. "I've been abroad and seen other countries. I'd rather live here than any place else in the world."

Cyprus may change, but of one thing we are sure: the islanders' hospitality is in no danger of dying out. As we stopped in one village after another, we were constantly besieged by friendly people eager to take us into their homes for tea, sweetmeats, meals, or wine.

Cyprus wines have been famous for centuries. The Crusaders brought European methods of wine making to the native vineyards, and their famous Commanderia, a sweet and heavy dessert wine, is still produced. Cypriotes prefer their wine well aged, and many island families offer vintages from bottles dated 1870 and older.

Today the wine industry is a million-dollar business. Large quantities are exported, and thousands of islanders depend upon their vineyards for a living.

The Cypriotes themselves are fond of wine, but in moderation. A small glass or two at meals and an occasional toast with a friend satisfy the local appetite.

On the southern coast between Limassol and Larnaca we passed an oil derrick. Friends had told us that major oil companies had surveyed the island thoroughly and decided the chances of a strike were too slim to warrant drilling. We stopped to investigate, and Renos had a long chat with the drilling crew.

"Local people are digging the well," he reported. "A water diviner who lives near here has always believed Cyprus must have oil somewhere. Some time ago he took the hazel wand he uses to search for water and visited Romania. There he studied how his divining rod acted when it was over oil fields.

"He returned here, and insists he got the same reaction at this very spot. Local bankers are financing him. The well is down nearly 3,000 feet, and geologists say early indications are very good."

We wished the drillers luck and continued on to Larnaca. This busy seaport is one of the oldest cities on Cyprus. In ancient times it was called Chittim; legend says it was founded by Kittim, the great-grandson of Noah. Here, according to Cypriote tradition, Lazarus was buried after his second death.

The saint's body was removed to Constantinople (Istanbul) after its discovery in the 9th century, but the ancient Church of St. Lazarus still stands near the center of the modern city. A magnificent marble sarcophagus is pointed out as that of Lazarus himself.

Old Christian churches are everywhere in the city, but perhaps its most interesting antiquity is the Moslem Tomb of Umm Haram (Hala Sultan Tekke), which stands beside Salt Lake. Umm Haram was a relative of Mohammed. She died in a fall from a mule and was buried on the spot where she met with her accident. Jean and I paid a visit to the beautiful mosque which has been erected there.

Unbelievers are not usually welcomed in mosques, so we were surprised when the bearded mullah in charge invited us inside. First, however, he brought a white scarf to cover Jean's bare head, and, since I was wearing shorts, a skirt to conceal my legs.

Inside, walls were bare and whitewashed, the floor covered with color-rich Oriental rugs. Reverently the mullah led us to the back of the mosque, where two huge pillars of stone reached nearly to the roof. Bridging them across the top was a massive block of stone, heavily draped in bright silks.

Draperies Serve a Purpose

The top stone, the mullah explained, was not resting on the two pillars; it was miraculously suspended in the air above them. He told us that the two pillars were erected by the faithful immediately after Umm Haram's death, on the very spot where she fell. The next night, he added, the top piece appeared, miraculously transported from Mecca, and hung in the air over the sacred spot.

"I am sorry the draperies spoil your view of the miracle," he said, "but those who come to pray might be frightened by the sight of the block hanging there with nothing to support it, and it has been necessary for us to conceal it."

From Larnaca we headed inland to the mountain hamlet of Lefkara, famous for cen-

turies for the magnificent lacework its womenfolk produce. Its cluster of dwellings clings to the steep side of a mountain overlooking the sea. From the winding road that approaches it the first view of blue-walled houses, all with red tile roofs, is breath taking.

Lefkara's streets are paved with cobblestones and so narrow that our little car nearly touched the houses on each side. As we passed sunny courtyards we saw groups of girls and women, ranging in age from eight to eighty, busily plying needles. In outdoor coffee shops sat their menfolk, exchanging local gossip and sipping Turkish coffee.

Men of Lefkara were famous travelers, Renos told us. Once they journeyed all over the world, selling their wives' handiwork. Now a local guild handles the sales, and the men have little to do. The women, however, keep as busy as ever.

Kings and emperors have eaten banquets set on tablecloths made in this little village. Tradition says that Leonardo da Vinci, visiting the island in the 15th century, took home a piece of Lefkara lace and presented it to Milan Cathedral for use as an altar cloth.

We spent the night in a tiny hotel with a single guest room. After supper a townsman called, introduced himself as the secretary of the lace-vendors' guild, and asked if he could help us.

"I'd like a picture of the best lacemaker in the village," I said. "I imagine she'll be one of the older women. I'd also like to photograph the prettiest girl in Lefkara, and an attractive child working on lace. Could you arrange it?"

"Come to my house at 9 in the morning," he said. "They will be there."

We kept the appointment and took the pictures. When we were through I thanked him for making the arrangements.

All in the Family

"It must have been a bother," I said, "to round these people up and bring them to your house."

"Not at all," he said. "The best lacemaker in Lefkara is my mother, the prettiest girl in town is my wife, and the most attractive child in the village is my daughter!"

Before returning to Nicosia we drove to the sand-covered ruins of Salamis. A thousand years before Christ, a prosperous city stood here, its seaport one of the busiest in the ancient world, its market place famous for the size and beauty of its buildings and monuments.

For hundreds of years the city was the capital of Cyprus, but earthquake, war, and revolts left it a mass of ruins. Much of its stone went to build the modern city of Famagusta. Only broken marble columns, half covered by shifting sands, mark the site of its former glory.

In Nicosia we made arrangements for our last excursion on the island. Twenty-four years ago, in 1928, Dr. Maynard Owen Williams wrote a story of Cyprus for the National Geographic Magazine.* In it he told of Hélène, a beautiful 12-year-old Greek girl who lived on the Karpas Peninsula in the island's northeast corner.

Sentimental Journey

"Let's find Hélène," Jean suggested, "and compare her life today with that which Dr. Williams described. She'll be a woman now, of course, but we can see how her home and way of life differ from those of her mother, about whom he wrote."

During our own visit, we had been continually astonished at how little change there had been in the people's habits and customs as described by Dr. Williams. The cities were more modern, it was true, but in the country and villages we had found his descriptions as fresh and accurate as if they had been written yesterday.

We hoped to make the drive to Rizokarpaso in a morning, but there are too many attractions in Cyprus for fast travel. In the village of Yialousa we found a family unwinding silk from silkworm cocoons, and stopped to watch them at work. They showed us how the cocoons were boiled, then stripped of their delicate filaments (page 642).

Locating Hélène might be an almost hopeless task we thought, but we underestimated the local fame her picture in the National Geographic Magazine had brought her. In the market place of Rizokarpaso, Renos explained our mission to a group of men sitting in front of a coffee house.

Hélène? She who had been pictured in the American magazine? Of course! *Everyone* knew Hélène. Directions followed, and in a few minutes we stopped in front of a low stone house near the edge of the village.

A tall, handsome woman of middle age came to the gate. Renos explained our mission. For a moment she looked startled, then giggled like a girl, her face covered by a sudden blush.

In a torrent of Greek she welcomed us, led us inside her spotless one-room house, and offered us chairs. Hurrying to a cupboard, she drew out a worn copy of the National Geographic Magazine bound in heavy wrapping paper and opened it to the picture taken 24 years ago. She was Hélène!

Seven children, hard work in field and home, and time had worked their changes (page 664). But Hélène's face was still warm and strong

* "Unspoiled Cyprus," July, 1928.

653

Fragrant and Golden, a Week's Supply of Bread Comes out of a Back-yard Oven

This housewife is Hélène, pictured as a girl in the NATIONAL GEOGRAPHIC MAGAZINE 24 years ago (opposite and page 664). With her small daughter's help she took nearly sixty round and twisted loaves out of the oven,

and intelligent, and her delight when Renos told her why we had come seemed to take ten years from her age.

Tenderly Hélene fingered her copy of the old magazine. She looked at the picture of herself, young, slim, dressed in a colorful Cypriote costume, and surrounded by brilliant poppies. Then she looked down at herself, and at her tiny room, with resignation.

Quickly her animation returned as she told us of the local fame the article had brought her, and she laughed as she compared herself with the picture. She told us we were lucky to have come the day we did. Six days a week she works in the fields with her husband. Today she had stayed home to bake a week's supply of bread.

The mention of baking brought a startled look to her face, and she dashed out the back door. We followed, and found her peering anxiously into the little door of a beehive-shaped oven.

Looking in, we saw the six-foot circle of the oven floor covered with golden-brown loaves of bread. There were two dozen large plain loaves and thirty or more twisted, coiled, and braided shapes (page 655).

Hélene looked relieved to find her baking safe, drew a sesame-covered loaf from the oven, and took it inside for us to share.

Her oldest son, 18, had emigrated to Australia, she said. The other two boys and her four daughters live at home. The oldest is 14, the youngest a little more than a year.

"They are being raised as I was," she said, "to hard work and a simple life. In our village, life has not changed. This was my mother's house, her furniture. These loaves are baked as she baked them, and we till the same fields in the same way. Life is just as it was when Dr. Williams visited us."

Picture Brought Marriage Proposal

"That story he wrote nearly got me in trouble," she laughed. "Five years after it was published, a year after I was married, a letter came from a young man in America. He said he had fallen in love with my picture, and if I were free he would come and marry me."

Did she still have the letter?

"Ah, no. My husband was furious. He tore it up in little pieces and burned them!"

When it was time for us to leave, Jean gave Hélene the silk scarves we had brought her, and candy for the children. She thanked us and gravely wrapped two loaves of bread, still warm, in a homespun napkin and presented them to us. As we walked to the car she plucked two carnations from her garden and handed one to each of us.

"We have our answer," said Jean as we drove away. "Life here hasn't changed a bit. And if the Hélenes of Cyprus are wise, it won't."

In Yialousa we found the silkworkers' home, a whitewashed stone cottage set on a hillside. We were greeted by the family's 22-year-old daughter, who invited us into the cozy single room and offered us the traditional Cypriote refreshment of preserved fruit and a glass of water (page 633).

Our hostess was not in the least embarrassed by the fact that there were not enough forks to go around. She waited until those served first were finished, then washed the forks and offered them to the others.

Brides Furnish Linens for a Lifetime

She showed us heavy bolts of hand-woven silks and a huge chest at one end of the room, her own hope chest. A Cypriote bride, she told us, tries to bring her husband enough cloth to last out their years together—all the sheets, household linens, and materials for her own and her family's clothing. The material was beautiful; the embroidery and other handwork exquisite.

As we chatted we gazed through the open doorway at a rural scene of rare beauty, mountains, olive trees, golden fields of grain, flocks of sheep, and the blue sea in the background. We were thinking what a wonderful life was hers when suddenly she told us that she planned to emigrate to England and seek work as a chambermaid.

"There is nothing here for me," she said. "I am 22 and will have a reasonable dowry, but there is no one here for me to marry. Both my brothers have emigrated, so there is no one with whom I can attend public affairs. Most of the young men have gone abroad. A girl must marry, and now there is no hope of that here. So I must go abroad."

Hélene's son gone to Australia; now this girl going to London. . . . Much of the story of Cyprus had been told in those two examples.

It is a story of people struggling to keep their own peaceful way of life but subjected to forces greater than they can resist. Yet, in village and farm, they have kept the simple virtues—frugality, hard work, honesty, and hospitality—which make the island such an idyllic place.

Whenever I think of Cyprus I like to remember an incident that happened when we visited Roxandra, the woman of Phiti. I tried to pay her for our lunch, but she refused.

"You should be careful," I joked. "The National Geographic Society has 2,000,000 members, and if I write that you give lunches free, they may all come and visit you."

She smiled, and threw her arms wide.

"But they would be welcome!" she said.

A British Paratrooper: He Camps Behind Walls Where Fighters of Old Donned Armor

Cyprus, Britain's Mediterranean bastion, guards the explosive Middle East. The stalwart sergeant stood ready in Kyrenia Castle (page 660) after trouble broke out in Iran. Riots in Egypt later whisked him to Suez.

Minaret and Belfry Link East and West, Moslem and Christian

Christianity numbered Cyprus among its first converts. Saints Paul and Barnabas brought the faith here in the year 45. Barnabas was a native of Salamis, a Cypriote city now in ruins.

This Byzantine church, named for Barnabas and Hilarion (page 648), stands in the village of Peristerona. The structure combines architectural features of three of the island's religions—Greek Orthodox, Moslem, and Roman Catholic. The airy Gothic belfry (right) was built after the five domes went up more than four centuries ago; the minaret (left) was added in Turkish days when many churches became mosques. Some of the icons were painted as early as 1549.

A painting of Christ fills the dome of a monastic church in Lagoudhera. This 12th-century example of Byzantine art remains exceptionally well-preserved. Medallions of angels and the Disciples surround the Saviour.

To take the picture, the photographer lay on his back on a cold stone floor the better part of a morning.

A Crusader's Castle Overhangs Kyrenia Harbor

This stronghold, built around 1200, was never taken by Turkish assault, though besieged many times. Cypriote kings fled here whenever the island was invaded. Now vacationists putter with small craft, swim, and fish under the castle's beetling wall.

Pennants Flutter for Boat Races Outside Kyrenia's Sea Wall

Cypriotes come from all over the island to watch the town's Sunday water sports. Vacationists from the eastern Mediterranean taste the thrill of small-boat sailing. On an unusually clear day Turkey's distant coast is visible from this rocky grandstand.

▲ British Paratroops Occupied the Castle During the Iranian Oil Crisis

Richard the Lionheart seized Cyprus during the Third Crusade to save his fiancée, Berengaria, from threatened capture. Wed to Richard, she became Queen of England. In 1878 the island again passed into British hands; now it is a Crown Colony.

▼ Scottish Pipes Skirl on a Rampart Built for Knights in Mail

Stones for Kyrenia's modern quay and sea wall came from quarries worked since ancient times. This spectacular coast, with its olive and orange groves sloping down to the sea, reminds travelers of certain settings on the Italian Riviera.

Spring Flowers Daub Karpas Peninsula, the Long Bony Finger Cyprus Points at Asia Minor

This plodding donkey was frightened out of his asinine wits by the authors' car; he had to be coaxed back to the trail. The woman wanted to see the picture as soon as it was taken. Told that this was impossible, she rode off in a huff.

Feast-day Finery Garbs the Shepherd and Girl in Color

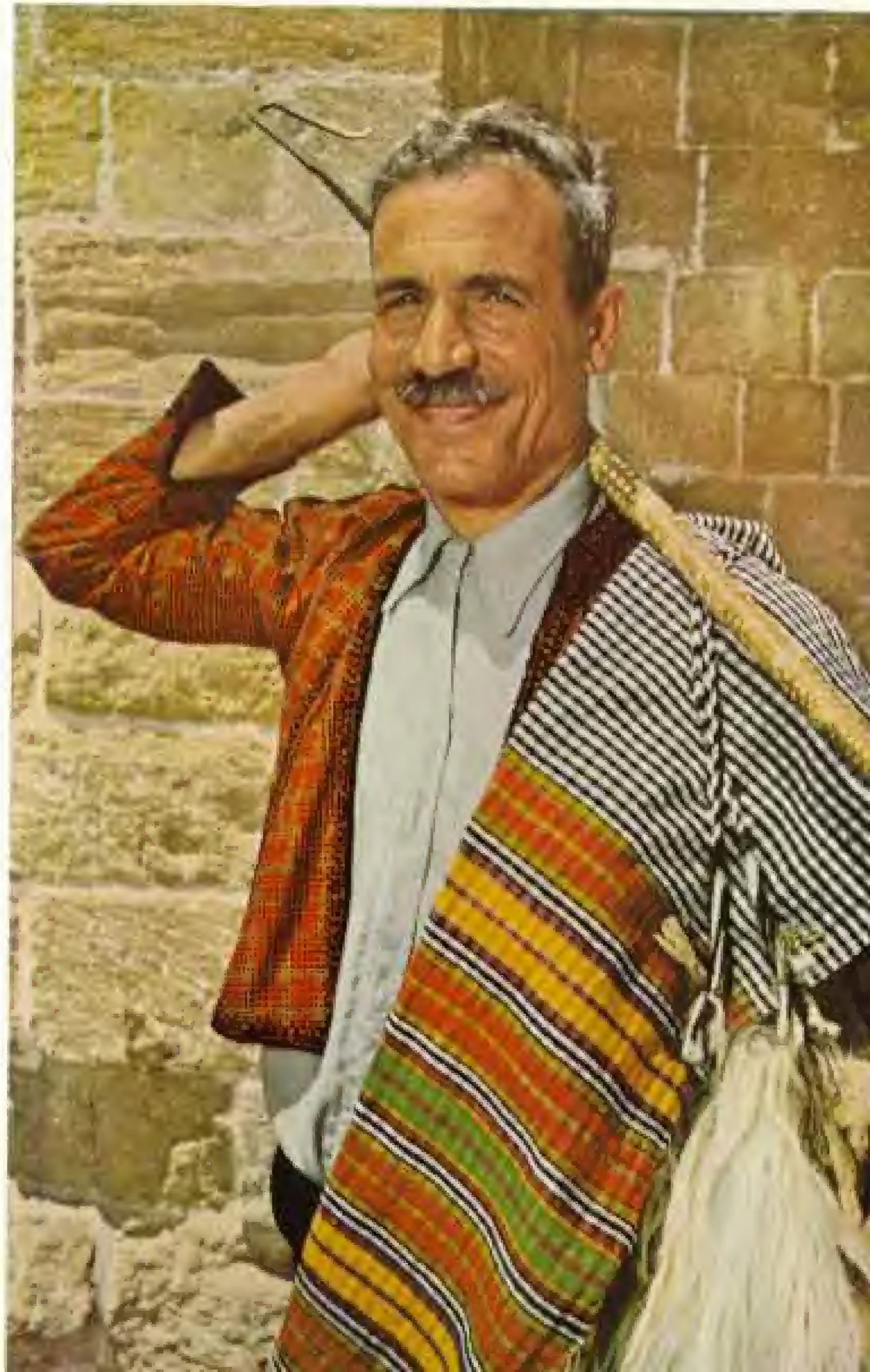
Change has come to the cities of Cyprus. Burgeoning, they build glass-bricked modern homes in the shadows of medieval palaces and churches. Streamlined shops offer British and American goods. Jet fighters high in the sky roar in mock combat.

Outside the cities, off the main roads, people cling to age-old ways. Farmers work their land much as men have done since cultivation began; pastoral scenes suggest Old Testament days (page 639).

← This country girl, dressed in a costume her grandmother might have worn, exhibits the flat reed basket which Karpas peninsula women have made and used for centuries. Bright cloths woven among the strands outline the patterns.

→ The shepherd clings to ancestral shoulder cloth and bright jacket. Nowadays these folk garments appear only on wedding and feast days. A long-haired goatskin bag holds the man's lunch. His hand-whittled crook is tipped with iron.

Kodachromes by Jean and Franc Shor



Autochrome by Jean and Franc Shor

Hélène (Left) Has Grown into the Matron Pictured Here 24 Years Later

Maynard Owen Williams, a National Geographic staff photographer, made this Autochrome of Hélène as a 12-year-old for the July, 1928, Magazine. Jean and Franc Shor sought her out in Kiz-kalpass, her home. They found that Hélène had won local fame, and even a marriage proposal from America, as a result of the photograph.

Mother of seven children, she toils endlessly in home and field. Even as she sat for her new picture, she sorted the cocoons in her basket. "I just can't stand not to be doing something," she said.

Nature's Tank, the Turtle

This Leisurely Armored Reptile Takes Everything in Its Slow Stride but the Automobile

By Doris M. Cochran

Associate Curator, Division of Reptiles and Amphibians, U. S. National Museum

ON a warm day in late spring, you are strolling along a narrow stream. Near the bank is a half-submerged log on which are scattered half a dozen dark, rounded knobs.

As you approach, these knobs detach themselves, slide into the water, and swim away. You have just disturbed a group of fresh-water turtles basking in the sun.

Or you are weeding the tomato bed after a summer rain—and suddenly a lump of dirt at your feet rises and waddles off.

The muddy coating all but hides the yellow-and-black shell of a box turtle. You see his bright eye cocked at you before he disappears under the deeper foliage of your lettuce patch.

Again, you are cutting early roses when you notice a slight commotion in the loose soil near the roots. As you watch, a tiny clawed hand appears, and then another, waging a life-and-death struggle against the small pebbles and loam.

Finally a baby turtle lifts himself free of the encumbering earth, pauses a moment to blink at his first bright look at the day, then instinctively seeks cover under the nearest leaf or bit of bark.

In the Turtle's Grass-roots World

Except for such casual contacts as these, the one who wears his house on his back is not too well known to many of us. Let us, therefore, enter in imagination the world of the grass roots and observe a box turtle (page 676) for an entire day.

The morning has been cool, for it is early June, but as the sun rises higher the heat increases. Under a loose covering of oak leaves where she burrowed the night before, a female box turtle feels in her muscles the growing warmth of the climbing sun. Soon she is able to shoulder through the leaves to a sunlit spot.

Cold acts as a paralyzing agent on turtles and all other reptiles. Body heat of these "cold-blooded" creatures varies with that of their surroundings, instead of being regulated to stay at a fixed high temperature, as in mammals and birds. If you find a turtle early in the morning when the air is cool, you will notice that its skin is cold to the touch, its movements slow and lethargic.

After warming up a while in the sun, Madame Turtle begins to think about lunch. She spies a few mushrooms and takes several nips.

A turtle has no teeth, so cannot chew. But the edges of the jaws are sharp and covered with heavy, horny tissue. The lower jaw fits closely inside the upper one. Their closing shears off a bite of food, which is then swallowed whole.

As our turtle pushes on through the leaves, she uncovers some earthworms and devours them greedily.

At a spring she takes a drink, for turtles are thirsty creatures. She wades right in, and, when partly submerged, stretches out her neck and slightly opens her mouth, letting the water pour in. The throat may be seen to expand and contract as the muscles carry the liquid into her stomach.

After drinking a few spoonfuls, the turtle heaves herself out of the water; she suddenly has something else on her mind. In some hazy cell of her slow-moving reptilian brain there may lurk a blurred memory of her somewhat less than tempestuous love affair of the past summer.

A handsome yellow male turtle with bright red eyes had met her feeding on a grassy hillside when the mating instinct was at its peak. At first he had merely followed her as she moved through the grass; then he had begun to make little bites at her neck and legs to stop her, putting his forefeet on her back.

After mating, the two had wandered apart. From the scene of her brief romance, she had resumed her hunt for food.

Spring Ends a Deathlike Sleep

All winter she had hibernated in the ground under a tree, having buried herself several inches deep in the soft leaf mold, well below the frost line. Respiration had almost ceased during her long sleep; her metabolism slowed nearly to a standstill, and for six months, while snow and ice covered the earth above her, she neither ate nor moved, and seemed as if dead.

The warm rains of April penetrated to her sleeping place, and one day when the sun had lain with particular warmth on her coverlet of leaves, she hoisted herself out of her trench.

During the winter hibernation, the eggs which she carried had barely continued to grow, but as she fed ravenously in these first

"On Your Mark, Get Set, Crawl!" Box Turtles Prepare to Race Off—in Any Direction

Owners from the Boys' Club of Washington, D. C., aware that pushing their entrants might make them retract, urge them onward by blowing. While hardly sprinters, shellbacks make gentle, interesting pets. They can be trained to run mazes, discriminate between black and white, and show up on time for dinner.

warm days of spring, they reached their full growth within her body. Now she suddenly feels the urge to rid herself of this burden.

After anxious searching, she finally selects an area between the long roots of an ash tree where she can easily dig and where the sun falls during part of each day.

Crouching and using only her hind feet, the turtle begins to push the soil away. She digs first with one foot and then with the other, turning the cup-shaped sole of the foot outward to push dirt from the hole.

It is a long task, demanding great patience, and dusk is falling before the hole is as deep as the turtle's hind legs can reach—about two inches.

Fertile Turtle Lays Her Eggs

Finally the expulsion of the eggs begins. One by one they are dropped into the cavity, at intervals of several minutes. After each egg falls, one of the hind feet feels for it and pushes it forward in the hole to leave room for those to follow.

When all have been laid—seven, because this is a large, well-grown female who produces nearly the maximum number—she reverses the action of the hind legs and fills the hole, packing the dirt securely over the eggs.

All this has been done by touch alone, for the turtle has not looked at her eggs or nest. Now, however, she rises as if to inspect her work. She tramples over the nest several times to obliterate its outlines. Then she walks away, her maternal duties ended.

The eggs are at the mercy of any marauder. Skunks, dogs, bears, and raccoons are especially adept at digging up and eating them.

If the mother lays her eggs late in the summer and does not dig deep enough, the ice of winter may kill the developing embryos. But since this particular clutch of eggs was laid in the spring, the young turtles are due to hatch before the cold weather arrives.

The period of incubation for turtle eggs depends upon the temperature. Usually eggs laid in early June hatch by mid-September if the weather remains warm. But a late spring or an early fall may not give the eggs sufficiently prolonged heat for complete development; then they may remain in the ground all winter, the young emerging in the warm days of the following spring.

A box turtle's egg is elliptical, white, about one and a quarter inches long by three-quarters of an inch in diameter, with a tough, leath-

cry shell which can be dented but not torn easily when recently laid. As incubation proceeds, the egg rapidly absorbs water. The shell is distended and finally ruptured by this rapid water absorption, aided by the young turtle's kicking legs.

Growing stronger with its birth struggles, the turtle uses the sharp claws on its forefeet to widen the hole in its prison wall.

A Beady-eyed Baby Meets the World

Now comes the greatest struggle of all. The tiny, newly hatched creature, weighing only a fraction of an ounce, must force its way upward through several inches of close-packed soil and drifting leaves.

Let us assume that the struggle is successful. A fine beady-eyed baby turtle as large around as a 25-cent piece emerges.

The youngster pushes his way manfully over straws and sticks to a quiet hiding place under a piece of bark, where he can accustom himself to this big new world of his. There he stays for several days, until the egg yolk stored as food in his little body is exhausted and the soft suture on his lower shell, through which the yolk once nourished him, is hardened (page 670).

The first food of this young box turtle and his brothers and sisters probably will be small earthworms. As the youngsters grow, they may sample a fallen blackberry, a slug, a piece of green clover, a toadstool, or even a dead field mouse, for box turtles are practically omnivorous.

Instinct tells the young turtles that in turn they would make a good meal for almost any carnivorous animal. Accordingly, they hide all during their early life; seldom can they be found without very careful searching in the underbrush.

By the end of five years, the turtle has a shell length of about five inches and is mature. By this time he has become relatively fearless because of the strong fortress provided by his shell.

The box turtle's lower shell is hinged across the center and has powerful closing muscles fore and aft. When its owner is attacked by some hungry animal, he can draw his head, arms, and legs completely inside, close the lower part tightly against the upper shell, and withstand siege until the attacker tires.

During strawberry time, the turtle gorges on fresh fruit and often becomes so fat that he cannot completely close his shell, no matter how much you may tickle him. If a wolf had him, instead of a friendly human, he might pay for his greediness with his life.

The shell of the box turtle and certain other Temperate Zone species serves also as a record of growth, at least in early years.

When box turtles are hatched, each has 13 squarish plates arranged in three rows on the upper shell, or carapace, bordered by 25 smaller marginal ones. Growth takes place around the edges of these plates.

The cessation of growth caused by winter's hibernation is marked around every plate by an encircling depression. Counting the deepest "rings," or channels of growth, from the center to the margin of any scale, gives the turtle's age.

Occasionally in summers of severe drought, turtles are forced to estivate—bury themselves in the mud at the bottom of a pond or ditch until the welcome rains come again. If the drought lasts long, the turtle fasts, growth stops, and a ring is formed on the scales of the shell.

The summer ring is seldom as deep as the winter one, however, since the drought-forced resting period is usually much shorter than the all-winter hibernation.

Growth takes place also on the margins of the lower shell, or plastron, but since these markings become worn by the turtle's travels, the rings seldom are complete there.

Turtles continue to grow after reaching maturity, although at a slower rate.

As a result of crawling under things, a very old turtle is often worn as smooth above as below; so its age can only be guessed. Eighty years is believed to be a ripe old age for a box turtle, although some authorities think they may exceed the century mark!

Lunch at the Cafeteria

Box turtles have a well-established itinerary over the few acres they select for their home. This has been ingeniously demonstrated by attaching a spool of thread to the turtle's back with a little harness, fastening the free end of the thread, and following the trail as it unwinds.

Captive box turtles soon learn a feeding routine. I once kept pet turtles in an enclosed court in the United States National Museum at Washington, D. C., feeding them fruit, tomatoes, and bread every noon. Although the natural plant growth of the grassy enclosure provided adequate food, it was not long before they were waiting for me at lunchtime near the flat stone where I spread their tidbits.

If I happened to be a few minutes early, I could see my turtles coming to the picnic through the grass from all directions. One can imagine their philosophic resignation on Sundays when the office was closed and no lunch appeared!

Box turtles are accustomed to climbing over rocky or uneven ground, and so have learned to avoid tumbles. If you place one on a table top, it will walk to the edge but will not go

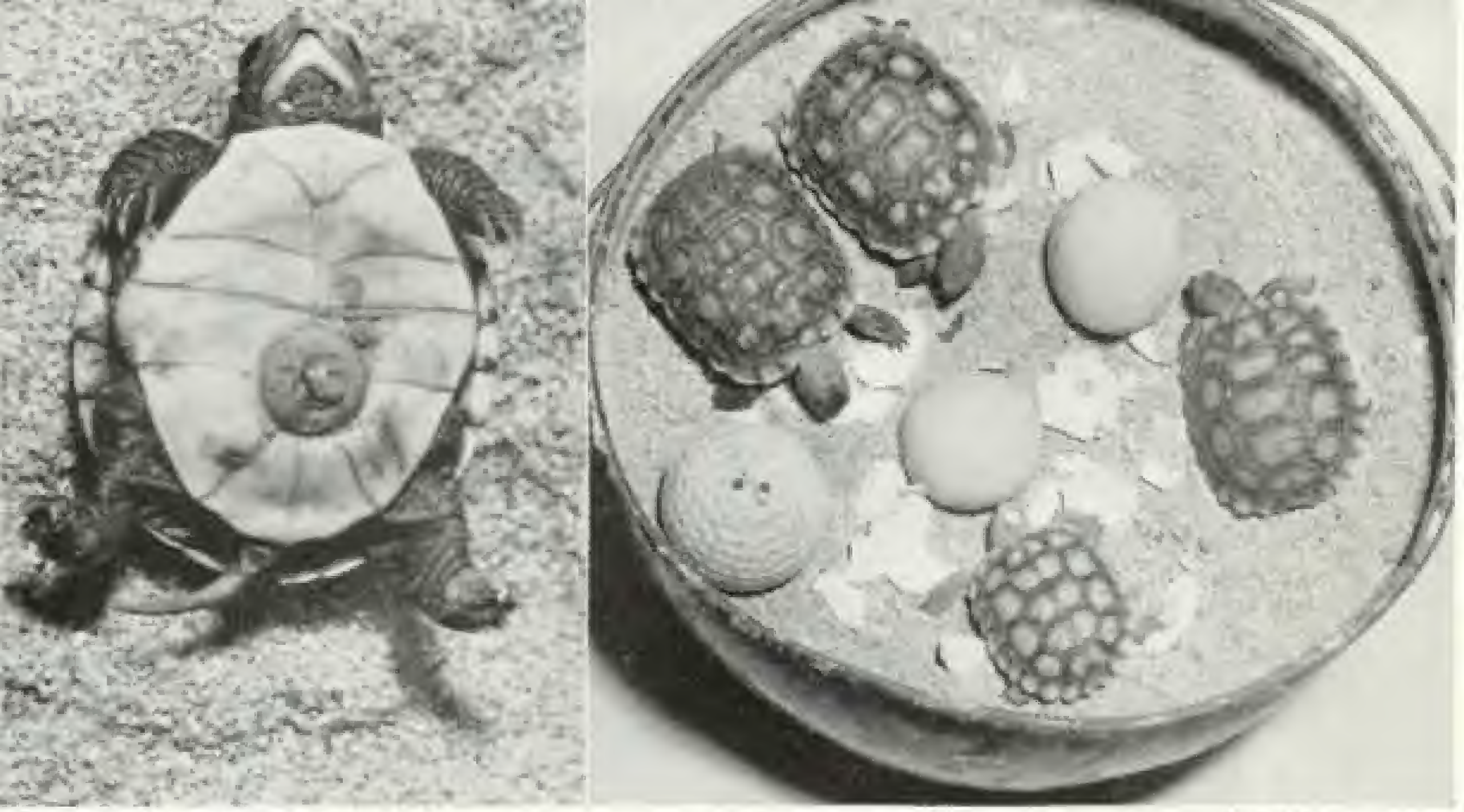
National Geographic Photographer W. Robert Moore

Diamondback Terrapins Fatten in Pens for Nine Years. Stew Made from Their Meat May Sell at $3.50 an Eight-ounce Bowl

Once a common food, terrapin now is reserved for well-heeled owners of cultured palates. At Crisfield, Maryland, expecting lunch, hundreds of turtles swim toward the net, only to be dipped up and sold at $2 to $4 apiece. Lower left: Diamondbacks at Beaufort, North Carolina, waddle ashore for a handout (page 672).

National Geographic Photographer J. Baylor Roberts

National Geographic Photographer W. Robert Moore



Three Lions — ×10 — Turtle Field Photo

Baby Turtles Face the World Complete with Rations for Several Days

The ventral sac on the lower shell (left) nourished the box turtle in the egg but will harden as the youngster forages (page 667). Mother turtles lose interest in offspring after laying eggs. Galápagos tortoises in the pan hatched in 86 to 157 days from eggs slightly smaller than a golf ball (page 653).

over. A water turtle, on the other hand, will launch itself from the edge without hesitation, being used to sliding off a mud bank into the soft buoyancy of water.

Although turtles have no external ears, they "hear" by feeling even the slightest vibrations through ground or water. Their sight is so good that it is hard to approach one without being seen. They have some sense of smell and taste, but further experiment is needed to gauge the precise extent.

A question frequently asked is whether "turtle," "tortoise," and "terrapin" mean the same thing. The answer is that it depends upon where you are.

In the United States it is correct to call any turtle a turtle, but we often refer to the edible fresh-water kinds sold in markets as "terrapin," while the land turtle with stump-shaped hind legs may be called a "tortoise." British usage differs somewhat.

Scientists have given each one of the more than 300 living kinds of turtles its own scientific name. The common box turtle, for example, is *Terrapene carolina*.

Pet stores stock the young of many of our commoner pond turtles and sell them for aquariums. A healthy turtle will soon accept food from its owner's fingers. A varied diet, including small pieces of raw meat and fish, earthworms, insects, water plants, vegetables, and fruits, should be provided.

Holding a morsel in its jaws, the turtle uses the claws of its front feet to tear off a piece small enough to swallow. Most aquatic turtles prefer to feed under water.

The turtle's home may be a deep pan, a tub, or a glass-sided aquarium. The main requirement is two or three inches of water with a sandy island or a smooth sloping rock onto which the turtle may climb.

Turtles Need Their Cod-liver Oil

A daily drop of cod-liver oil in the food, or dropped directly into the mouth, helps to prevent the vitamin deficiency which often afflicts a captive turtle in winter. Its symptoms are swelling eyelids, softening of the shell, and lack of interest in food. Bathing the eyes daily with boric acid reduces swelling.

In combating this deficiency disease, it is helpful to keep the turtle on dry soil most of the time, with a few short swims during the day, and to provide sunbaths, being careful to offer shelter in case he gets too much sun.

Some pet dealers smear the shell of the baby turtle with bright enamel and often paint it with flowers! This means deformity or death to the turtle unless the paint is removed, since the shell cannot grow. The paint should be chipped off or softened and rubbed away with nail-polish remover.

Of the box turtles, the Florida type (*Terrapene bauri*) has a higher and narrower shell than the common variety (pages 676 and 677). Its black shell has a handsome starlike pattern of yellow lines radiating from the center of each scale. It is found wild in peninsular Florida and seems to prefer being near the water.

Blanding's turtle (*Emys blandingii*) is grouped with the box turtles because of its

671 Carl H. Ribaut

A Sheep Dog Would Think Twice Before Barking at This Box Turtle's Ancestors

Archelon, a three-ton marine turtle of the Cretaceous period, swam seas that covered Kansas. More recently (about a million years ago), *Colossochelys atlas*, a turtle three feet tall, roamed the Siwalik Range of northern India. Box turtles are common throughout the eastern and central United States.

similarly hinged lower shell. Its upper jaw is deeply notched and its shell is flattened, whereas the box turtles have hooked beaks and highly arched, domelike shells.

The Blanding's lives in ponds and marshes in the north-central States, east to Ontario, Ohio, and northwestern Pennsylvania. Although timid when first taken, it readily adjusts to captivity. It is one of the least aggressive of turtles and seldom bites, even when teased.

One of our handsomest species is Troost's turtle *(Pseudemys troostii)* from the upper Cumberland and Tennessee Rivers. The side of the head and neck bears a bright-red streak flanked by black and yellow lines (page 675).

The young Troost's shell is greenish; the adult's is much darker—deep brown, almost without shell pattern in the male, light brownish-gray with a yellowish bar in the center of each scale in the female. The red mark on the neck remains throughout life.

Nose-tickling Courtship

When they are about seven inches long, Troost's turtles are mature enough to breed. Their courtship is most interesting. The male swims in front of the female and vibrates the long nails on his forelimbs against her nose or chin for a second or two. He repeats this stroking action at short intervals.

Although the female appears disdainful of these antics, they eventually break down her resistance and mating takes place.

Since water turtles shed the outer layer of the shell as they grow, there is no definite way of telling the age of wild-caught adults.

The best clue to telling the sexes apart is the fact that male water turtles have a longer tail and, in most species, proportionately longer fingernails than the female.

The Florida turtle *(Pseudemys floridana)* is a larger and less colorful edition of the Troost's. It reaches a total length of 11 inches and has black and yellow lines on the neck. It abounds in lakes, rivers, large swamps, and streams from North Carolina and Florida to Mississippi.

Bears, raccoons, and many other animals, including man himself, dig in the sandy banks where these turtles lay their eggs. King snakes, too, devour them.

The red-bellied turtle *(Pseudemys rubriventris)* is still larger than the Florida species; a shell length of 18 inches has been reported. Instead of being yellow, as in Troost's and Florida turtles, the lower shell of this species has a reddish hue; hence its common name (page 675).

Today the red-bellied ranges along the Atlantic Coastal Plain from northern North Carolina to central New Jersey. A century ago it was found also in southeastern New York and along the Delaware River to Trenton, but its use for food caused its extermination in that part of its original range. Remains found in shell heaps near many pre-Columbian village sites show that this and other large turtles long were used as food by Indians.

Another pet-store favorite is the yellow-bellied turtle *(Pseudemys scripta)*, native from

Virginia to northern Florida and southeastern Alabama (page 675).

Although somewhat like the young Troost's turtle, this handsome fellow has a wide yellow patch behind the eye and lacks the red color on the neck, which is striped with yellow and black. The adult has a shell nearly eleven inches long and may weigh eight and a half pounds.

The omnivorous appetite of the yellow-bellied makes it easy to keep as a pet. It seems to be a scavenger, for it is one of the few turtles which have increased in number in spite of pollution of rivers by sewage.

The most widely distributed turtles in the United States are the painted turtles of the genus *Chrysemys;* one or another of the four recognized varieties is known in practically every State east of the Rocky Mountains.

The western painted turtle *(Chrysemys bellii bellii)* is the largest member of its group; on record is one with a carapace nearly ten inches long. The margins of its lustrous blue-black shell are handsomely marked with red and yellow concentric rings.

The western painted is known to have lived more than ten years in captivity. Usually it will accept food from one's hands, but prefers to swallow it under water.

For the eastern painted turtle *(Chrysemys picta picta)* seven inches seems to be the maximum shell length (opposite page). It inhabits the Atlantic Coastal Plain from Long Island, New York, to Jacksonville, Florida, and can endure the brackish tidal water in marshes near the ocean.

The central painted turtle *(Chrysemys bellii marginata)* also makes a long-lived pet (page 675). It readily accepts meal worms, earthworms, raw fish, and meat, as well as tender vegetables, if placed in the water beside it.

Smallest of the four is the southern painted turtle *(Chrysemys picta dorsalis)*.

The Diamondback a Delicacy

Diamondback turtles (genus *Malaclemys*) dwell along our coasts from Massachusetts to Texas and are economically important, as well as being among our handsomest species. The upper shell is deeply etched by growth rings and has a central keel running down the back. The shell resembles fine carving.

Because the adult's flesh is a highly esteemed delicacy, turtle hatcheries were established early in this century near Chesapeake Bay, and later at Beaufort, North Carolina (pages 668 and 669). Turtles of breeding size are kept in pens until eggs are laid—seven to 23 in a clutch, averaging around twelve per female. Eggs are then transferred to hatching boxes until the young emerge.

Newly hatched young are just over an inch long and light olive to dark brown in color, with black concentric lines within the scales. Often their wide upper "lip"—the margin of the upper jaw—is paler than the rest of the head, giving them a clownish look.

Winter-fed young in captivity grow during the time when they would normally hibernate and accordingly are bigger and more vigorous than those that sleep the winter away.

Females are ready to breed when they reach a length of five and a half inches, usually at the age of five, but often much later.

The maximum size of the Carolina variety is slightly over seven inches. Since the males seldom exceed five inches, they are of little commercial importance.

The northern diamondback *(Malaclemys centrata concentrica)* inhabits the Atlantic coast from Cape Cod to Cape Hatteras (opposite page). There it intergrades with the closely related southern form.

Lazy Turtles Sun in Layers

The common map turtle *(Graptemys geographica)* is known all the way from the St. Lawrence River and the southern shores of the Great Lakes down the Mississippi Valley to Missouri, Kentucky, and Arkansas (opposite page). Shell markings like map contour lines account for its name. It is exceedingly wary, and takes quickly to the deepest part of the stream if alarmed.

On sunny days hordes of these turtles may be seen sunning themselves on rock ledges, mud banks, or logs. Sometimes they pile up two or three deep, the lowest layer apparently not objecting to being crawled over.

A map turtle at rest is one of the laziest sights imaginable. Its hind feet stick out straight backward, and the forefeet are equally relaxed in front, one of them sometimes pillowing the heavy head.

In addition to a sharp cutting edge, the jaws of map turtles are provided with wide crushing surfaces, so that adults can get at the soft parts of large mollusks such as clams. Crayfish and aquatic insects are also devoured.

The Mississippi map turtle *(Graptemys pseudogeographica)* is another of the clown-faced turtles. Here, however, the decoration is a sinuous yellow half-circle on the side of the head behind the eye, plus numerous wavy light markings on jaw and neck (page 675).

The central scales of the upper shell are curiously keeled and pointed posteriorly, while the marginal shields suggest the fluted carvings of some oriental master. Ten inches seems to be the maximum length attained by adult females. Weight runs up to four pounds.

In northern Illinois this turtle's favorite places for hibernation are muskrat houses.

Painting by Walter A. Weber

Eastern Painted Turtles, Ready to Dive Out of Danger, Use a Log as Their Solarium

Map Turtle climbs the bank and **Northern Diamondback** peers from the river. Turtles never scuffle over a place in the sun, but often pile up three or four deep. Northern Diamondback ranges from Cape Cod to Cape Hatteras, **Eastern Painted** from Long Island to Florida, the Map from Great Lakes to Missouri.

Because Their Blood Absorbs Oxygen Very Slowly, Turtles Can Stay Submerged for Hours on a Lungful of Air

Spotted and **Musk Turtles** drop down to grab a morsel from the chub snatched by the **Mud Turtle.** Frequenting sluggish streams and ditches of the eastern United States, these turtles prey also on worms, insects, mollusks, crayfish, and tadpoles. Hard, sharp-edged jaws shear off food, which is swallowed whole.

Turtles Listen Without External Ears; Sensitive Skins Catch Vibrations from Water or Ground. All Five Are Common in Pet Shops

Young **Yellow-bellied** (left) and **Central Painted Turtles** share lily pads. Baby **Red-bellied, Troost's,** and **Mississippi Map Turtles** perch on rocks.

Painting by Walter A. Weber

A Wood Turtle (Center) and a Blanding's Arrive Uninvited to Share a Box Turtle's Strawberry Dinner

When hibernating, these eastern and midwestern reptiles spend the winter without food. If ground is moist enough to keep skins comfortable, they can fast a year or more.

Deserts Hold Water for Those Who Know Where to Look. Florida Box Turtles (Left) Get Theirs from Prickly Pears.

Gopher Tortoise (right) hunts for fruit and succulent plants by day and retreats at night into a sandy burrow fifteen to twenty feet long.

Painting by Walter A. Weber

WALTER A. WEBER

Painting by Walter A. Weber

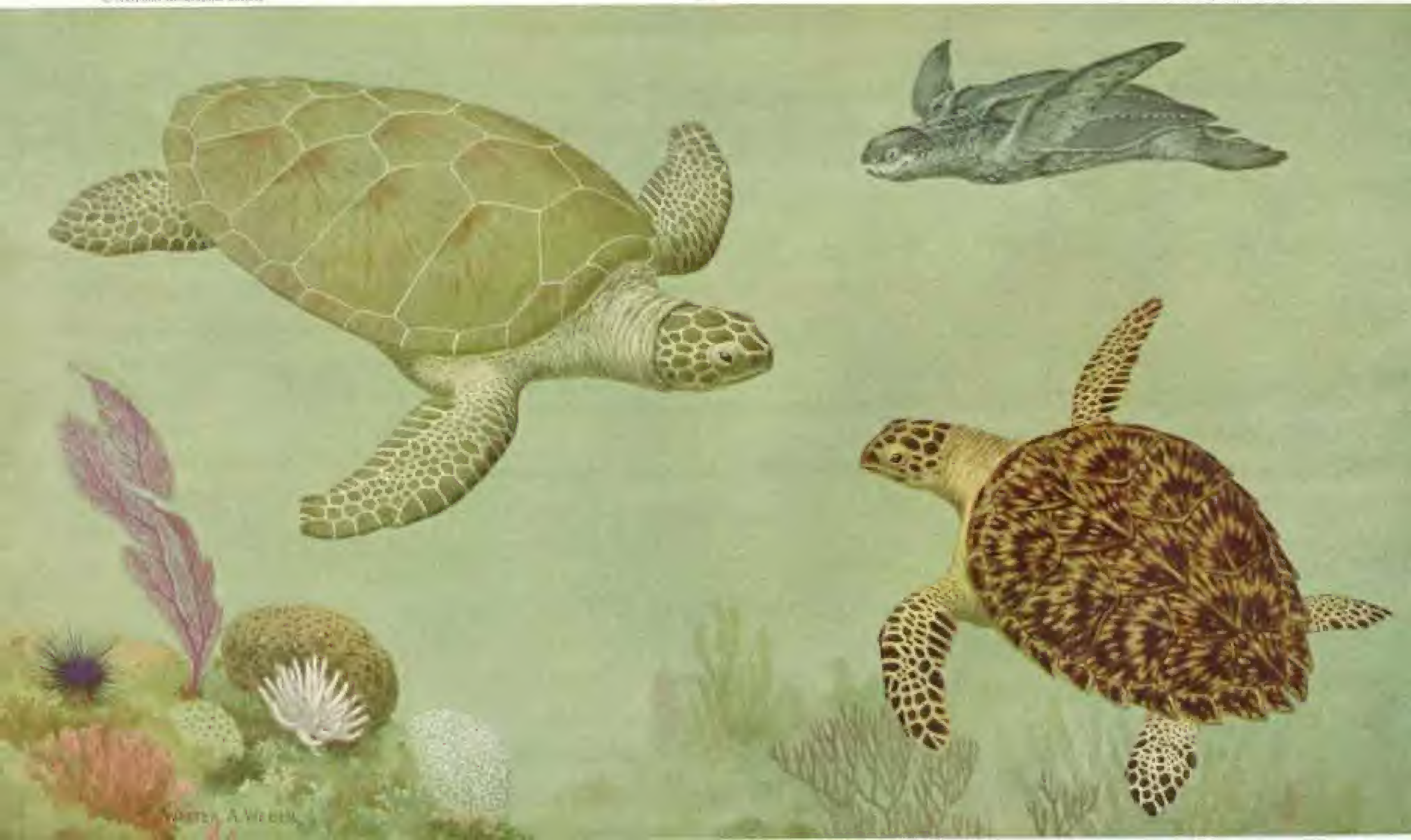
Alligator Snapper's Pale Tongue, Moving Like an Earthworm on a Hook, Presumably Lures Fish Within Snatching Distance

Ferocious **Spiny Soft-shell** (left) and **Common Snapper** can slice off a man's finger or seize a duck by the feet and drag it to the bottom. Never straying far from fresh-water ponds, they make sharp inroads on fish population. Snappers will lunge at almost anything that moves, including turtles of other species.

Marine Turtles Keep a Wary Eye for Sharks. They Need Size to Survive in Their Predatory World

Largest of these tropical reptiles is the 1,500-pound **Leatherback** (upper right). Prized for its flesh is the **Green** (left); for its shell, the **Hawksbill.**

Painting by Walter A. Weber



  Painting by Walter A. Weber

Sensible Desert Tortoises Venture Out in Midday Sun Only on Mild Days

Reptiles, unable to regulate their blood heat, cannot endure high temperatures tolerated by mammals. These fellows usually forage in early mornings, late afternoons, and after showers. With head retracted and heavy scales overlapping its partially withdrawn arms and legs, **Desert Tortoise** is virtually invulnerable to all animals but man.

Its food habits undergo a great change during growth. Newly hatched young are mostly carnivorous, feeding on small snails, insect larvae, and worms. The adult is chiefly herbivorous, dining on the roots, stems, and leaves of aquatic plants, with an occasional crayfish or other nonvegetarian delicacy.

Among the commonest of turtles found east of the Mississippi is the musk turtle (*Sternotherus odoratus*), which ranges as far north as southeastern Canada (page 674). Dwelling in muddy ditches, streams, and lakes, the musk turtle crawls over the mud, hunting worms, insects, mollusks, crayfish, minnows, and tadpoles. It is scarcely over five inches long and weighs barely half a pound.

The lower shell is small compared with that of most water turtles, leaving much more of the bases of arms and legs exposed. Perhaps this turtle's bad temper and readiness to bite compensate for its lack of bony protection. Its life expectancy as a pet is good, one having lived 23 years in captivity.

Nesting habits of the musk are more irregular than those of most other turtles. Sometimes the eggs are laid on the bare ground and left uncovered; often they are deposited under a log or on top of a stump. A single female lays two to seven eggs, but many more are often found close together, for these turtles tend to be gregarious at nesting time.

The baby musk turtle looks like a mechanical toy as it kicks with its tiny feet, trying to escape from your fingers. Its shell, high and ridged, is minutely and delicately formed, though never brightly colored. As growth progresses, the shell flattens and widens, losing its miniature beauty.

His Name Is Mud

The common mud turtle (*Kinosternon subrubrum*) is related to the musk, but is usually less aggressive. Where their ranges overlap, they are frequently found together in the same pond (page 674).

The mud turtle is found from Connecticut along the coastal plain to Florida and inland; close relatives live in Alabama, all the Gulf States, and north to Missouri.

Mud turtle hatchlings are brown, attractively spotted with yellow on the neck and along the sides of the shell. As pets they readily accept earthworms and finely chopped meat. Very alert, they swim about the aquarium as if propelled by a wound-up spring. They live a long time in captivity —38 years in one instance.

A full-grown mud turtle measures only a trifle over four inches in length. The lower shell, or plastron, is much wider than that of the musk turtle and protects the soft parts of the body much better.

Both mud and musk turtles have hinged plastrons, which enable them to close the shell partially, somewhat in the manner of the box turtle (page 667).

Food preferences of the mud turtle in the wild state have scarcely been investigated, while its reproductive habits are known from only a few scattered observations. Its musky odor prevents its use as food by human beings.

The spotted turtle (*Clemmys guttata*), very common in the eastern United States and readily found in sluggish streams, bogs, and ditches, likewise needs study, especially as to its hibernating habits in different regions (page 674). Thus far the earliest record for its appearance is March 2, in southeastern New York State, and it apparently remains active until November.

It is surprising to note how many descriptions of some of our commonest reptiles conclude with the words, "Nothing is known about its habits." Turtle study could well become a project for amateur biology students of all ages.

Voice of the Turtle

The wood turtle (*Clemmys insculpta*) roams woods, fields, and swamps from Maine to West Virginia (page 676). Though it eats almost anything, it prefers berries, fallen fruit, tender plants, and mushrooms. It makes an intelligent pet and is surprisingly agile; it can climb out of a shallow box with ease.

Although the voices of most turtles are at most a slight squeak or sigh, the wood turtle makes a whistling call audible thirty or forty feet away.

The part of our country lying west of the Rocky Mountains is much less rich in turtle species than the central and eastern parts. The Pacific pond turtle (*Clemmys marmorata*), found from southern California to Oregon, is the only fresh-water turtle native to our west coast. In spite of extensive trapping for its delicious meat, this species remains fairly abundant.

The desert tortoise (*Gopherus agassizii*) lives in the desert regions of southeastern California and in parts of Nevada, Utah, Arizona, and northern Mexico. Its thick shell and the heavy overlapping scales on the outer side of its arms and legs make it almost impervious to attack (opposite page).

The upper shell of a large male is about thirteen inches long, nearly hemispherical in shape, and sculptured attractively with growth channels paralleling the outlines of each scale.

Like the box turtle, the desert tortoise displays a great deal of "sense" in captivity. He soon learns to get his food in a certain

ARJ National Geographic Photographer Harold Walker

Green Turtle, Caught off Australia, Promises a Feast

In Arnhem Land captor grins at the prospect of steaks. Aiming from a dugout, the hunter hurls himself and roped harpoon at the target. As the reptile dives with barb in neck or shell, the harpooner clambers back into his boat. The turtle tows the canoe until exhausted, then is hauled aboard.

place, if it is put there each day. One I kept in my office had a definite itinerary, followed nearly every day during warm weather.

A Busy Day at the Office

In the early morning he was usually found in a corner between the file case and the wall. About 10 o'clock he took a stroll and ended up under a kneehole desk.

Lunchtime found my office tortoise waiting at a piece of oilcloth on which I served his cantaloupe and lettuce. About 3 o'clock he again patrolled my two office rooms from end to end a few times, and by closing time he had gone early to bed in his corner next to the filing case.

He enjoyed having his neck scratched, and when I filled a large bowl of water and put him in it to drink, he guzzled happily for half an hour at a time.

As winter approached, he became more sluggish and appeared to want to hibernate. He was put into a wooden tub partly filled with sandy soil and soon burrowed into it.

I kept this tub in the coolest corner of my office, and there the desert tortoise slept until spring. Then he emerged from his sandy blanket, a little dusty, but as lively as ever, and quite ready to eat his breakfast.

A close relative of the desert tortoise is the gopher tortoise (*Gopherus polyphemus*), found from southwestern South Carolina to central Florida and westward to Texas (page 677).

A shell length of 12 inches and a weight of 10 pounds are considered the maximum for this turtle. It burrows into sandy soil, often for fifteen or twenty feet, returning each night to its own tunnel after having spent the day foraging for fruit and succulent plants.

Razor-jawed Soft-shells and Snappers

Of all North American fresh-water turtles, the soft-shelled and the snapping turtles are the only truly ferocious ones.

The soft-shells (genus *Amyda*) have flattened, scaleless shells, the margins of which are leathery and soft, hence the popular name. They seldom go far from water voluntarily, except when the female pulls herself out on a sandbank, perhaps in midstream, to deposit her eggs.

The soft-shell's snout ends in a piglike nose with valvular nostrils which close when it submerges. It can stay under water for several hours, being specially adapted to obtain oxygen from water through the lining of the pharynx.

With its razor-sharp jaws, the soft-shell wreaks havoc among fish. It also catches frogs, crayfish, snails, and mussels, and bites courageously at human beings who may attempt to capture it.

The large northern soft-shell (*Amyda ferox*) may have a shell more than 18 inches long and weigh over 34 pounds.

The spiny soft-shell (*Amyda spinifera*) is smaller, with a shell length not exceeding 14 inches (page 678). It is very agile both in swimming and in climbing steep banks to its nesting site above the water line; there it lays from 12 to 25 eggs, usually in June or July.

The common snapping turtle (*Chelydra serpentina*) and its big relative, the alligator snapper (*Macroclelys temminckii*), are even more destructive (page 678). Adept at catch-

Like Oaks from Acorns, Galápagos Giants from Little Tortoises Grow

The year-old tortoise, weighing 5½ ounces, may in time rival his mount's 350 pounds. On the arid Galápagos Islands these turtles store scant rainfall in neck sacs. Tapping the four-legged canteens and then eating their flesh has saved shipwrecked or marooned mariners from death.

ing anything that swims, they have been known to bite off part of a fish struggling on a fisherman's hook.

In captivity, even young snappers strike savagely at proffered food, and woe to the person who fails to withdraw his fingers quickly! Young snappers cannot be kept in the same quarters with young turtles of other species, for they will attack and kill even those larger than themselves. For the same reason, they should be kept out of ponds containing goldfish and other aquatic pets.

The common snapper often grows to a length of 13 inches measured along the upper shell, with a weight of 16 to 30 pounds. A large captive specimen being fattened for the soup pot reached a weight of 86 pounds.

A Walking Meat Cleaver

Except for purely marine species which sometimes visit our coasts, the alligator snapper is the largest turtle found in the United States. It occurs in the Gulf States and along the Mississippi watershed and, in spite of its large size, is quite secretive in its habits.

An average alligator snapper has a shell measuring 24 inches long and weighs about 100 pounds, but weights up to 219 pounds have been reported. Its skull measures more than nine inches in length.

One look at the meat-cleaver jaws will convince even the most fearless person that this is a creature best left alone.

Though larger, the sea turtles are much less ferocious than the alligator snapper. The leathery turtle, or leatherback (*Dermochelys coriacea*), attains the largest size of any turtle now living, with a shell length of eight feet and a weight of nearly 1,500 pounds (page 679).

Sea turtles live and breed in tropical waters, although occasionally one will stray far to the north until numbed by the colder temperatures.

Since the hazards of existence are much greater for sea babies than for land babies, the female sea turtle lays 90 to 130 eggs in a clutch, as often as four times a year, instead of the half dozen to a score or so, once a year, of the land and fresh-water mothers.

Because turtle eggs contain a high-grade oil, used in watches and other precision instruments, and also are relished as food, natives living near tropical shores hunt sea-turtle eggs by probing in the sand with a sharpened stick.

651 International News Photos by Bob Sullivan

Siamese Sue Proves that Two Heads Are Not Always Better than One

This twin-headed river turtle in the Fish and Wildlife Service Aquarium, Washington, D. C., shows why such freaks, though not uncommon, rarely escape their natural enemies for long: each head controls the two legs on its side. Often the right head sounds "Retreat!" while the left orders an advance. Result: the turtle gets nowhere. Although Siamese Sue has a single blood stream, shell, and lower intestine, most other parts are dual. The heads often fight over food and seldom agree on a common objective.

The green turtle (*Chelonia mydas*) is hunted for its savory flesh (pages 679 and 682). One method is to dive into beds of sea grass in shallow water where the turtle feeds, seize it around the neck, and swim with it to the surface. There it is hauled on board a boat and turned on its back to complete its journey to market and the soup bowl.*

The hawksbill (*Eretmochelys imbricata*) furnishes the valuable tortoise shell, prized for fine combs, boxes, and inlays for furniture ever since the Middle Ages (page 679). This shell is easily carved, yet durable, and is delightfully colored with streaks of golden yellow and rich brown.

Modern Pace Too Fast for Turtles

Turtles are reptiles of ancient and honorable lineage. Their fossil ancestors are found in rocks at least 175,000,000 years old.

One of the largest fossil land turtles on record was dug out of rocks in northern India. It measured seven feet in length and three feet in height.

Fossils show that, during the Age of Reptiles, turtles flourished over the whole world except on the circumpolar icecaps; cold was apparently their only enemy. Their descendants are found today on every continent and in almost every region not subjected to perpetual winter.

The turtle has a considerable niche in mythology and folklore. Many Asian people believed that the earth itself rested on the back of a turtle.

Ceremonial rattles made of dried turtle shells filled with pebbles figure in the rain dances of the Indians of our arid Southwest.

Inoffensive and valuable for food, shells, and oil, turtles deserve their popularity.

Turtles on the whole are nice people, but, like many other nice people, they cannot quite keep pace with our swift modern life, especially on the highways. The broad, clear space in the center of a good road exerts an irresistible attraction for turtles who wish to bask in the unobstructed rays of the sun.

The next time you see one of these harmless but old-fashioned fellows attempting to cross the road in front of your car, slow up, if you please, and spare his life.

* See, in the National Geographic Magazine: "Capturing Giant Turtles in the Caribbean," by David D. Duncan, August, 1943; and "Certain Citizens of the Warm Sea," by Louis L. Mowbray, January, 1922.

Thumbs Up Round the North Sea's Rim

Northern Europe Shows Its Human Side to Two Girl Hitchhikers Touring Youth Hostels from Sweden to France

By Frances James

With Illustrations from Photographs by Erica Koch

AT MIDNIGHT, just 22 hours out of Esbjerg, Denmark, the refrigerated fish truck reached the German-Dutch frontier. Its two drivers, stopping to change a leaky tire, grinned at seven youthful hitchhikers emerging from an incredibly tiny and bulging roadside tent.

But the hitchers in turn had cause to grin when they beheld, crawling stiffly from a narrow shelf behind the driver's seat, the astonishing spectacle of—Erica and me!

My whole body was numb from the day and night of relentless highballing across Germany, and Erica felt about the same.

But, looking back, we agree that the 550-mile "hitch" from Esbjerg to Brussels (Bruxelles), sandwiched between two Danes and our rucksacks, an overheated engine, and 15 tons of iced shellfish in truck and trailer, was something we wouldn't have missed. It was a typical part of our thumbs-up adventure—a determined plan to make a Grand (if inexpensive) Tour by going wherever the Fates should send us, by whatever pumpkin coach those Fates provided.

Two Thousand Miles in a Month

As it turned out, we covered two thousand miles through a golden autumn month round the North Sea's rim (map, page 688). The Fates—personified by strong, helpful males—were kind to two young ladies with enormous rucksacks. And everywhere we went a vast community of fellow hitchers made us welcome—young people seeing Europe on their wits, a thumbs-up generation.

It all began at tea one lazy London Sunday with a discussion of holiday plans. Erica and I were lamenting that pound-sterling restrictions and high transport costs put a sharp brake on continental travel.

The next thing we knew we had taken up a friend's provocative dare: "Why not go down to the Prospect of Whitby and find a skipper who'll let you work your way?"

So there we were, on an East End Saturday night, in the Prospect, famous old water-front pub, smiling our best at potential skippers who might want a pair of lady deckhands.

The breeze was cool on the balcony overhanging the river and brought an occasional heavenly whiff of cinnamon from a near-by warehouse.

It was pleasant but unrewarding. Neither that night nor any of the succeeding nights did we find the *right* captain.

Very well, if the captains wouldn't come to us, we would go to them. On a hot morning we took the bus which dives beneath the Thames through Rotherhithe Tunnel, to wander through the watery acres of Surrey Docks.

Perhaps in other ports a lady can go right up to a ship and talk to the captain; in London—thanks to extensive pilfering of cargoes in the 18th century—one must first get past a bobby at the gate. We didn't.

However, our bobby was nice.

"Some of the Scandinavian lines do carry stewardesses," he smiled. "Go talk to their agents."

Hitchhiking by Freighter

To make a long, long story short, we ultimately found a Swedish Lloyd agent as willing as we to take a dare. One of his smaller freighters needed a captain's boy on the single trip from London to Göteborg, Sweden. He took us instead. That agent will be mentioned in our wills!

Picture to yourself two young women packing rucksacks for a month of foot-loose travel on 48 hours' notice. In imagination, the straps already bit into our shoulders, and we scanned each item with critical eye. Would a jar of face cream be worth its weight when flagging cars? You bring toothpaste and I'll take talcum.

We planned, once we reached the Continent, to stay in youth hostels—called *vandrarhem* in Swedish, *auberges de la jeunesse* in French, *ungdomsherberg* in Danish and Norwegian, *gastejo por la junularo* in Esperanto—different languages, but the same warm hospitality and inexpensive good fellowship everywhere.

With approximately 850,000 members, the voluntary, nonprofit-making Youth Hostels Association movement has spread to some two dozen nations in 43 years. Its fundamental aim is to help teach, especially to young people, knowledge and love of the countryside.

Encouraging adventure, the nearly 2,400 recognized hostels provide the simplest sleeping accommodation and cooking facilities for "all who travel by their own efforts." Member associations recognize each other's cards, so that young people of every nationality, race,

680

Stockholm Grew Up on Three Islands; Now It's "the City Between the Bridges"

Nucleus of the modern metropolis, the medieval town was naturally moated by Lake Mälaren (foreground) and an arm of the Baltic Sea (distant water). Towers and walls, long since pulled down, guarded the city in the old days, when booms protected ships in harbor and locked gates and lifted drawbridges secured the area by night. Beyond the small twin buildings at left appears the 17th-century Riddarhuset, or House of Nobles, where coats of arms of Sweden's noble families are displayed. A lacy steeple tops Riddarholm Church (right), burial place of Swedish kings.

color, religion, and purse are welcome wherever they go.

Our Sweden-bound ship was the *Anglia* (page 689).

"A large share of British exports is going to the States these days," said the first officer, explaining why she rode so high above her load waterline.

Luckily, in the resulting roll and pitch we weren't asked to work too hard. We seemed, indeed, to alternate between cabin boy and cabin class. Fate in the form of the chief steward treated us like a pair of long-lost daughters.

Polishing plates and setting tables came easy, anyway, and though caring for the handful of passengers who prefer travel on these well-appointed little freighters would have fallen to us, none were aboard this trip.

The early Swedish dinner hour left us free to watch much of the 70-mile-long Port of London unfold as we slipped out to the Nore Light in the Thames estuary. We passed an occasional Thames river barge, its red-brown sails silhouetted in the sunset. Now vanishing, this very old type of sailing cargo lighter is unique to these waters.

At Gravesend, where the brave bells of a

647 National Geographic Photographer Volkmar Wentzel

Town Hall Tower Holds Aloft a Star

Small boats, warehouses, and trucks bring the historic setting up to date. Stockholm is Sweden's capital and royal residence. With 753,500 population, it is the kingdom's largest city and its second port, after Göteborg. Famous for its modern apartment buildings, Stockholm is a blend of old and new.

water-front mission played "Fight the Good Fight" to 19th-century emigrant ships putting England behind them, vessels outward bound today take on a pilot to guide them past the sand shoals of the Thames estuary. The fast launch sheered alongside us, and the pilot leaped to the *Anglia's* ladder with perfect timing. Do they ever miss, I wonder?

After one taste of the *Anglia's* version of Swedish food, I haunted the galley. But although he let me help peel potatoes, few were the recipes I wheedled out of the professionally jealous cook.

The captain, however, was happy to talk. Anchovies on shirred eggs—ah! And smoked salmon flecked with black pepper! He confessed he had to follow a Spartan diet ashore to offset the effects of Svenska Lloyd's table on his figure.

It was dark the second day as we entered tideless Göta Älv, signaling "good luck" to the *Anglia's* sister ship putting out to sea. As we came on in, Erica and I caught a rapid preview of Göteborg's great shipyards to port.*

On a ridge to starboard lay the city, its meandering arm of cliff-top neon signs reminding me of the Palisades along the New Jersey shore of the Hudson.

From the bridge the captain shouted down to us the bearings of a fish restaurant he could highly recommend. He and our shipmates were considerate to the last.

Swedish Window to the West

Göteborg lay cupped in the hills on one side of the Göta Älv, and a forest of shipyard cranes tries unsuccessfully to hide the slopes of the far shore.

The city's tall modern apartment houses looked down from the perimeter ridges on broad canals running between Dutch-gabled houses in the town center. Old Göteborg was laid out by Dutchmen imported by the Swedish king Gustavus Adolphus when he founded the settlement in 1619 with an eye on trade westward to America.

From Göta Älv, then a wild estuary emptying into the Kattegat, sailed the *Kalmar Nyckel* in 1637 to establish a Swedish colony on the banks of the Delaware River. The wonder of Swedish cooking was to remind me of my sixth-grade history's incredulous description of that colony's governor, Johan Printz: It is said—my book could hardly believe it—that he weighed four hundred pounds, ate four meals a day, and had three drinks with each meal.

We walked at random down green avenues bejeweled by the only rain on our trip. And what did we come to but the statue of Swedish-born John Ericsson, designer of the ironclad *Monitor*, the "cheesebox on a raft" of Civil War fame!

Göteborg is indeed Sweden's window to the west, linked to the Atlantic community with so many English and Scottish connections as to be appropriately called "little London."

City of oceanic enterprise, Göteborg is particularly associated with mapping of the ocean floor. The 18th-century scientist and philosopher Emanuel Swedenborg, one of the first oceanographers, began his research here; in 1947-48 private citizens of the port made possible a 44,000-nautical mile circumnavigation

* See "Baltic Cruise of the *Caribbee*," by Carleton Mitchell, National Geographic Magazine, November, 1950

Drawn by Robert W. Nesbitt

From Land of Pine to Land of Vine, Foot-loose Hostelers Roamed Northwest Europe

A black line and arrows mark the route followed by author and photographer on their carefree, low-cost tour. From London they sailed to Göteborg, Sweden. After exploring Stockholm and southern Sweden, they traversed all the lands that rim the North Sea on east and south. In some cities, like Hamburg and Dunkirk, the wanderers found scars of recent war still raw, though everywhere restoration proceeds. Elsewhere, as in tiny Sønderho, on Fanø Island, they rediscovered ways of life little changed for generations.

of the globe by the schooner *Albatross*, fitted with many new tools for deep-sea study.

We were still too fresh and clean to "hitch" —hitching not being an old Swedish custom, anyway. On the Stockholm express we eyed the blond couple across from us without a word. Then someone said something in English, and we laughed aloud at our mutually mistaken identity. Back from Wisconsin to see the Old Country, they gave us our first lesson in basic Swedish.

Stockholm's Floating Hostel

Habitués of luxury hotels would—and do—gasp with admiration at the sight of Stockholm's youth hostel. Lying like a great white bird off Skeppsholmen (Ship Island), in the middle of the harbor, Sweden's last big full-rigged sailing ship, the *Af Chapman*, has been converted into a fitting memorial to the kingdom's great seamen.

Vice Admiral Fredric Henric af Chapman, of English ancestry, designed the Swedish Navy's ships throughout the latter half of the 18th century, publishing a series of texts on naval architecture that have had world-wide influence on that exacting art.

Built in England as the *Dunboyne* in 1888, the *Af Chapman* sailed under the merchant flags of Britain, Norway, and, eventually, Sweden for 55 years. Then for two decades more she served the Swedish Navy as a training ship and marine barracks.

Since no one wanted to see the lovely vessel sent to the shipbreakers, she was purchased by the city of Stockholm in 1945, turned over to the Svenska Turistföreningen (the Swedish affiliate of the International Youth Hostel Federation), and opened as a 130-bed hostel in May, 1949.

Government grants helped pay the heavy costs of conversion, for the *Af Chapman* has individual reading lamps over each bunk, central heating, and elegant hot showers! (Page 690.)

For more than 60 years, now, the Svenska Turistföreningen (which, incidentally, is partly financed by profits from government-

639 © Erica Koch Studio

Vagabonding Author and Photographer Start with a London-to-Sweden Ship "Hitch"

Rucksacks on backs, Frances James (left) and Erica Koch head for the Swedish freighter *Anglia*, on which they worked their way to Goteborg, Sweden, to begin a month-long 3,000-mile hitchhiking jaunt through six countries. The two stayed in youth hostels and inexpensive hotels. They "thumbed" some lifts, and also rode trains and buses; their longest ride was in a refrigerated fish truck (pages 685 and 698).

operated football pools) has been promoting walking and cycling tours to bring Swedes, young and old, into intimate contact with their woodlands. Its handbook today ranks just behind the Bible and the almanac as Sweden's most read volume.

The porthole of our cabin framed the rococo spire of an old church on the island opposite, embryo of today's Stockholm. Waking early, I could hear its clock chime the hour while the gulls swooped and called across the intervening water (page 686).

Breakfast and supper for *Af Chapman* hostelers were utilitarian; but at noon the upper deck blossomed forth into a *konditori* (pastry shop), one of the most attractive in Stockholm (page 691). Coffee and *smörgås* (open-faced sandwiches), and the best home-made cakes I've ever eaten, were served cafeteria-style to all comers by pretty blondes in sailor outfits.

All my life I've taken notes on food; in Sweden I drew pictures! My notebook is filled with sketches of the *Af Chapman's* smörgås, artful little salads on large, thick slices of sweet bread. Each trayful was as carefully arranged as the blue-ribbon winner at a flower show, with paper ornaments added.

Hearing of my passion for cooking, Ruth Johanesson, the *Af Chapman's* friendly, viva-

Hardship in Youth Hostels? Blondes' Smiles Prove It's "the Bunk!"

Stockholm's floating hostel, the full-rigged ship *Af Chapman*, provides budget-restricted wanderers with central heating, hot showers, and bunks with reading lights. Hostels supply blankets, but guests must bring or rent sheets in the form of sleeping bags. Nearly 2,400 youth hostels in some two dozen countries offer simple facilities to "all who travel by their own efforts."

691 © Kirja. Talla Brodin

Af Chapman's Sunny Decks Offer *Smörgås*, Coffee, Cakes—and Cool, Clean Air

Moored at Skeppsholmen (Ship Island), Stockholm's 150-bed youth hostel at midday becomes a restaurant featuring *smörgås*, fancy open-faced sandwiches (page 689). The *Af Chapman* was named for Vice Admiral Fredric Henric af Chapman, 18th-century Swedish naval architect. Built in 1888 in England as the *Dunboyne*, the *Af Chapman* sailed under the merchant flags of Britain, Norway, and Sweden. After further service as a Swedish training ship and marine barracks, she was bought in 1945 by the city of Stockholm (page 688).

cious warden, or directress, took an evening off to give a special lesson in Swedish cookery. A kindred soul, indeed! She had recently returned from Addis Ababa where she had introduced Swedish jam-filled pancakes with great success to the 700 little Ethiopian boys in a school where she served as matron.

I spent a blissful evening up to my elbows in flour and came away with a fistful of cookie recipes (page 693). If anyone wants to know how to make *nötkakor* (nut cakes) as enjoyed by His Imperial Majesty the Emperor Haile Selassie, just let me know!

Thanks to the Swedish Institute, we got in all the sight-seeing we wanted. This uniquely knowledgeable organization is delighted to arrange itineraries for foreign visitors.

One day we went to Skansen, the city's famed open-air museum. Sweden, exemplar of everything modern, is also extremely rich in peasant art. At Skansen one can trace the development of Swedish homes from the simplest peasant huts to impressive manor houses. Surviving buildings, brought here from all parts of Sweden, have been re-erected on an eminence overlooking the harbor.

Log cabins were used in Sweden before discovery of America, and parts of Skansen look

692 © Erica. Tellu Studio

"There's Where I Live!" Gave Two Points to This Picture

A friendly Copenhagener invited the hostelers to share her ultramodern apartment. On a wall map in her bedroom the hostess's daughter compares home locations with photographer Erica Koch, born in Germany but living in England.

rather like the reconstructed English pioneer settlement at Salem, Massachusetts.

But some of Skansen's wooden churches show an altogether different style—onion-domed bell towers, the idea for which was brought from Russia by Charles XII's troops returning from years of fighting in that land.

We also climbed the tower of Stockholm's Town Hall (page 687). Enchanting though it is, the things that most tickled my fancy were the little figures in the wide metal railing of the platform at the top humorously depicting the landmarks to which they pointed.

September Is Wild Mushroom Month

On Sunday morning so many basket-laden bicycles swished by that we followed out of sheer curiosity—to learn that gathering wild mushrooms for winter use is standard September activity here.

Once in the peaceful and alluring Swedish woodland, seen at about its best round Drottningholm Palace, we took off our shoes and stockings to walk barefoot through the cool moss and slippery pine needles. Dancing white birches added just the right touch to a backdrop of firs; Titania might have held court in any glade.

The Swedes themselves are second to no one in appreciating their forests. Fondly they care for and use them, regularly replanting and clearing out the underbrush.

The Government normally draws an annual net profit of six to seven million dollars from timber sales from State forests. It is experimenting successfully with fast-growing hybrid species of poplars to increase their contribution to the Swedish standard of living. Wood pulp is a major Swedish export.

During World War II, trees were converted into substitutes for nearly everything that Sweden had previously imported, except coffee and tea. Wood-gas generators and distilled alcohol replaced coal and gasoline as fuel; treated wood pulp and waste liquor supplied cattle feed and high-protein yeast; wallboard, glue, plastics, and clothing were conjured out of Swedish trees. One could even buy paper sheets and pillowcases.

Five nights we spent on the *Af Chapman*, generous for a youth hostel stay. Then we headed south for Denmark. Crossing the Öre Sund on the ferry from Malmö to Copenhagen (København) took an hour and a half. What an eternal distance it must have seemed to those Danes who made Elizalike escapes across the ice during the Nazi occupation!

We had just fallen asleep at the Copenhagen hostel when our beds were surrounded by a dozen chattering Finnish girls in peasant dress. It was like waking up in the middle of a rainbow. We couldn't understand each other; but then and there Old World and New staged a fashion show.

The full skirts of their costumes were of vertically striped wool, predominantly turquoise, with yellow and white. The hand-em-

broidered blouses were gorgeous affairs, and we admired the snug little black bodices.

But the grass is always greener on the other side. After we had exclaimed at each costume, one of the girls pulled out her greatest treasure: a pair of American-style pedal pushers in dark-blue corduroy.

Next morning the efficient Danish Tourist Association knew just which sights of Copenhagen two young ladies would like to see. *That* is the main shopping center, said the clerk, underscoring Stroget thoroughfare on our map. *There* is Georg Jensen's. *There* is the Royal Copenhagen porcelain shop. He—and we—regretted that Tivoli, the summertime amusement park, had just closed.*

On the Rådhusplads, or Town Hall Square, Erica photographed children feeding the pigeons; then we struck out for the water front and found ourselves on Gammelstrand, where the fish market was in full swing (page 695).

961 © Erica, Tolfa Studio

Bakers of Two Nations Smile When Their Cookies "Pan Out" Well

American-born Mrs. James, an enthusiastic cook, collected culinary tips all along her route. On the Stockholm floating hostel she learned pastry secrets from Ruth Johansson, the *Af Chapman's* vivacious warden (page 689).

The Copenhagen fishwives, each straight out of Hans Christian Andersen, wear bonnets made of starched cotton or folded newspaper. They sit along the canal, rain or shine, skinning live eels to order. Judging by the liveliness of the eels, one can be sure of getting fish very fresh in Copenhagen.

Near the fish market, on an island formed by canals on three sides and the harbor on the fourth, is Christiansborg Palace, which government offices share with the Royal Riding School. We watched a dozen perfectly groomed horses circling the sawdust floor.

Copenhagen means "Merchants Harbor," but, if anyone asked me, I'd rechristen it "City of Friendship." If we hadn't had London commitments, we'd probably be there yet.

Danes in London had told us about the extraordinary national talent for making friends with strangers; but we didn't really believe them. Yet before we knew quite how it happened, we had moved from the hostel to the plant-filled, ultramodern apartment of a Copenhagen friend of a London friend (opposite page).

We felt like prodigal daughters indeed when our hostess took a day off from work to prepare a gastronomic grand finale to our Copenhagen visit.

Whipped Cream on Soup and Pancakes

Ollebrød, a soup made of crumbled black bread cooked in sweet beer and served with as much whipped cream as the consumer wishes, and chopped beef with onions were the featured dishes, topped off with huge wedges of jam-filled pancake a foot across, embellished with more whipped cream.

I learned a lot of basic Danish copying out recipes from our hostess's cookbook, though no one took my interest in food seriously.

* See "2,000 Miles Through Europe's Oldest Kingdom," by Isabel Wylie Hutchison, National Geographic Magazine, February, 1949.

694 © Erica Pella Hardie

"Pint-size" Means Small, Unless It's a Continental Cup of Coffee

Jumbo mugs customary in northern Europe may hold a pint. In a Stockholm shop the author (left) admires a Royal Copeland cup; those in the foreground are of Swedish manufacture. Shelves at right hold French pottery. Orrefors and Kosta, Swedish towns, have given their names to glassware.

"You can't be a good cook," said the rotund Danes. "You're not fat enough!"

Surely the citizens of this little country can claim obedience to the spirit and letter of the law. Foreshadowing the Atlantic Charter, the Danish Constitution forbids anyone to starve!

Kitchens Without Stoves

To our surprise, we could find no stoves in Danish kitchens. Two or three gas rings stand neatly on marble-topped tables, and small portable ovens appear as needed.

We knew we had Copenhagen in the palms of our hands the day we stopped an electric train. Erica's beret blew on the track just as the train started to leave. What was a timetable compared with courtesy to foreign visitors? The engineer himself climbed down to the roadbed, retrieved and restored the beret with a broad flourish.

We left Copenhagen early one morning, hoping for a hitch across Denmark. Erica, with her conscience, wouldn't stand sensibly on the corner to flag the cars, but insisted on walking down the road to make it look as if we *meant* to hike.

Not five minutes after they had crammed us and our rucksacks into the back of a pint-sized European-made Ford, the jovial types who were our first catch pulled up at a roadhouse and indicated that they would be pleased to have us join them in a beer. It took several minutes to explain, through the language barrier, that we preferred the road.

Three young men of the hitchhiking fraternity were already on the Sjælland-Fyn ferry when we walked up the gangplank at Korsør that afternoon. The five of us—as all hostelers do—compared notes.

Two of the boys were American—University of California at Los Angeles graduates, class of '49. They had come to Europe in June as chauffeurs for wealthy compatriots, earning enough so that now they were making a Grand Tour on their own.

693 © Erling Tolla Studio

No Supermarket Serves Fresher Fish than Copenhagen's Streetside Mart

Gleaming in sea salt, fish come direct to the Gammelstrand market in boats that jam the canal (left). Fishwives in starched white bonnets skin live eels, a Copenhagen favorite, and also sell cod, sole, flounders, and herring (page 693). The granite statue of a fishwife (center background) honors the sturdy clan, most of them from the old village of Skovshoved. The sign, "Al fadkørsel forbudt," warns vehicles against passing behind the fish stalls.

© Erica Tella Roads

Sailors Hung Ship Models in Sønderho's Church as Thank Offerings for Safe Return

Sønderho lies at the south tip of Fanø, sandy island off Denmark's west coast. The town's 18th-century church, with sky-blue pews and shiny brass chandeliers, was built large and strong enough to shelter villagers when storm waves lashed the low-lying island (page 698). Fanø, formerly a rich hunting ground for amber washed ashore, also once boasted shipyards and a sailing fleet; today summer villas dot its peaceful sands. Sailors made the church's ship models during idle hours on long sea voyages.

They started off on the wrong foot with German-born Erica by recommending a popular travel guide printed in New York. She was furious before she had read ten pages.

"This book," she explained, "makes it sound as if Americans visiting Europe think they're going to the zoo!"

The third boy was a New Zealander. He grinned when we kidded him about the tremendous pack he carried; but late that night when the rest of us were driven to a Nyborg hotel, he simply pitched his tent in the park.

Two-year Thumbing Tour

Literally carrying his home on his back, he planned to wander around Europe for a couple of years before settling down on an antipodean sheep farm. To earn enough for the next year's sight-seeing, he hoped to find a winter's farming job in Denmark.

The three were fairly typical of the thousands of wandering scholars, poor in all but new-made friends and expanded horizons, now seeing Europe, and the globe, on a shoestring. Many are Americans brought to the Continent by veterans' benefits, which allow just enough pocket money for such frugal touring. Others arrive on UNESCO-sponsored scholarships; while many newly poor sterling-area residents can eke out their limited foreign currency only by hitching and hosteling.

Denmark's busiest west-coast port, Esbjerg, is too often overlooked by hurrying travelers. For Erica and me it was definitely the high point of our thumbs-up month. By the time we had been there 24 hours the whole town knew about the two girl hitchhikers from London and everyone had become our friend. The local paper even requested an interview!

As if to greet us, the fishing fleet was in. Packed so tightly round the quays of the fishing harbor that we couldn't get perspective for a picture of them all, five hundred little duck-fat and saucy-tailed fishing boats had been driven into port by a North Sea storm.

We rose at crack of dawn to watch the fish auction. Ranged symmetrically along the wet brick floor indoors was row on finny row, the

Sønderho Women Chat and Knit in a Cozy Old-World Setting

Needles and smiles flash in the 200-year-old cottage of Miss Maja Pedersen (left). Her friend, Mrs. Sigurd Pedersen, is no relation: Denmark has an acute shortage of surnames. For a small sum one may "buy" a new family name from an official Government list, or invent a new name and have it recorded. Colored bands at the bottom of skirts show Fano women's status—black for widows, dark blue for those in mourning, and dark green for all others (page 698).

little fellows flaked in boxes and the king-sized stretched out in naked glory, all being measured by a gnome with white whiskers. Tuna, he told us, were worth 800 kroner each (about $117) and herring shark even more.

Many of the fishermen spoke excellent English; and all who did so immediately offered their services as guides.

Esbjerg fishing boats, they told us, are a family affair, as in other Scandinavian ports. Or perhaps it would be better to say a clan affair. The first half of the haul always goes to keep up the boat.

General consternation reigned when we inadvertently revealed that we had not yet breakfasted. The harbor master himself conducted us to his favorite restaurant, ordering a meal so tremendous as to kill all thought of food for the rest of the day. While we ate, he phoned friends at shipping companies who might have boats going south to continental ports we still wanted to visit.

Alas! Though the harbor master recommended us highly as seamen, at that season most traffic from Esbjerg went back to England! So, Copenhagen friends having tipped us off to the outside chance of catching a ride on an Esbjerg-to-Brussels fish truck, we decided to thumb it.

Cape Cod in Fancy Dress

But first we visited Fanø, a long, slim island, 20 minutes by boat from Esbjerg. To me it suggested Cape Cod in fancy dress.

The dunes were flatter, to be sure, but the cottages were Cape Cod in weathered pink brick, thatched with thick reed. Even if we saw no whale-rib rose trellises, there was a figurehead from the *Lord Palmerston* up over the gate of a white picket fence.

The postmaster at Nordby, northernmost of the island's two villages, came out from behind his sky-blue counter to greet us.

"Ah! We are so beautiful!" he exclaimed, throwing a large arm around each of us.

It was the only English phrase he knew—but what a phrase!

Is it any wonder that to us Denmark means

a well-padded laughing man holding out his arms in welcome?

A friend of the postmaster let us rummage through her treasure chest of old costumes.

Unlike most folk dresses, the Fanø variety is unrelievedly somber (page 697). A colored band around the bottom of the black skirt indicates the wearer's status—deeper black for widows, dark blue for those in mourning, and dark green for others. Married women leave the outer button over one breast undone. We were told that the razor-sharp pleats are achieved by a yearly steaming in the village baker's oven.

With history at our fingertips we could trace the changing trade of the island's shipping through the stuff of grandmother's and great-grandmother's skirts. Some of the blouses had buttons of amber. This was one of Denmark's earliest exports and still is washed up on Fanø's beaches by storms from certain quarters.

As in New England, the household treasures were pieces of old English china brought home by sailor husbands: willowware, luster, and Spode. We gasped when a casually opened pantry door revealed pieces a connoisseur would envy.

Church Was Haven from Storms

At Sønderho, the island's other village, we saw a clothesline of fish hung out to dry. These the islanders eat right down to, and including, the last bone.

A picturesque backwater today. Sønderho once boasted seven shipyards and a fleet of 150 sail. Ship models hanging from the beams of the parish church were whittled out on long voyages and presented by sailormen as tokens of gratitude for safe return (page 696). The 18th-century church, with its sky-blue pews and glinting brass, was built large enough to house every family in the village in case of storm-driven high water.

Back in Esbjerg, Carl Hansen, who had been a wonderful guide at the fish auction, insisted we visit his netmaking shop. Ropy and tarry and full of seamen's "spare parts," it was, I think, the most photogenic place in Denmark. Erica said it made her camera feel good just to look at it.

Then hand in hand, or arm in arm, he led us around the harbor to friends' shops—to the blacksmith, forging a ship's anchor, and to the boatbuilding yards, where backbones and frames for fishing boats were growing on the stocks.

There was great secrecy about the names of the embryo vessels. Fishermen believe that revealing the chosen name before launching brings bad luck.

We made a date with Carl Hansen that night—to meet the missus. And now I must confess my photographic failure.

The "we-are-so-beautiful" Fanø postmaster had jokingly offered us a 12-inch "Souvenir of Niagara Falls" cigar; but cigar smoking is no joke to the good ladies of Esbjerg. When Mrs. Hansen hospitably extended a box of cigarillos, Erica took one to be polite. I can see her yet, inhaling casually and quivering from stem to stern on the exhale!

It was obviously an occasion. The epoch-making photograph would show Erica and the cigar with a backdrop of beaming Hansens. Erica set the camera up, fixed things so I "couldn't miss," and leaned back prettily to puff and to pose.

Of course when the film was developed, I had drawn a blank. Understandably, photographs of Erica on our trip are few.

Our pumpkin coach in fish-truck form would materialize, we were promised, sometime the next evening. But even Cinderella's good fairy would have been hard put to stage a more impressive send-off than that provided, ad lib, by Esbjerg's Ny Missionshotel.

In the dining room a gay wedding party was in progress. There was much skoaling and clinking of glasses. The wedding cake was a gorgeous confection of pyramidically coiled ropes of almond dough.

Swish! A pot of coffee and huge slices of the rich cake, decorated with small Danish flags, appeared before us—with the compliments of the smiling manager.

"Old Black Joe" in Danish

Midnight came, but no coach; then 1 o'clock. The bridal couple retired. The wedding guests rendered "Old Black Joe" in Danish—a bit off key—and went home. Erica and I remained.

Another wave of the Danish wand—manager's compliments again—and blankets and pillows appeared to curl round us on the settee.

We found later that the van had waited for a full 15 tons of mussels to be landed. But once the shellfish were aboard, we soon were rolling along through the hushed countryside. Touched by the silvery moonlight, the medieval town of Ribe, famous for its storks, might well have been the capital of Fairyland.

Numerous will-o'-the-wisps floated by—cycle lights of convivial Danes bound belatedly homeward. Our fantastic night was capped by the sight of a pair of portly gentlemen madly pursuing a moon-struck cow.

Dawn was breaking as we pulled up at the German frontier. Before we were to reach its far border we would feel as dreary as the war-broken countryside we traversed.

Our chauffeurs drove themselves hard, stopping for food only three times in 36 hours.

400 © Irene Wood

Want a Sugar Scoop, Dinner Bell, Teapot, Brazier? This Brussels Market Sells Them

"You name it, we've got it!" is the sales slogan at the Sunday-morning flea market in the Place du Jeu de Balle. Blaring loud-speakers compete with bawling hawkers. Trams clank by and church bells peal. The hard-bitten merchant at the right seems willing to trade a few browsers for a cash customer or two.

They insisted we share the bacon and eggs from the tiny refrigerator under the van.

As we rumbled south and west across Germany, the Danes told us how their long-distance fish hauling had been forcibly pressed into the Nazi system for feeding the occupied but blockaded Continent.

Luckier than many under the German gauleiters, they nevertheless explained that it wasn't very pleasant near the end of the war to be shot up by Allied liberating planes, for whom the van was a legitimate target! They looked back on it all as a strange hell they had somehow managed to survive.

When a leaky tire slowed us down, the drivers preferred to limp on to the Netherlands border rather than stop for repairs in a country they had already seen too much of.

So that is how we arrived, cramped and sleepy, at the midnight border rendezvous mentioned earlier. While a pair of helpful Netherlands MP's held spotlights for the Danes to jack up tons of truck and mussels, Erica and I stretched our cramped limbs.

Brotherhood of the Open Road

"Hi," said a smiling Danish youth who appeared from the roadside tent. "You hitching? I've been here a week myself trying to get a lift north."

He led us to the tent.

"Welcome to the club."

His six companions grinned out at us from the crowded "clubhouse." All had been waiting for days to hop a lift north across Germany.

"But it's all fixed up for tomorrow," said their leader with youthful optimism.

Looking at them made me remember tales of German wanderbirds and minstrels and the

Hamburg's Shipyards Hum Again. Up the Busy Elbe River, a Tug and Barge Tow War Wreckage Bound for the Scrap Pile

Rebuilding after virtual obliteration by Allied bombings and demolition, the city's shipyards, fitting docks, and free port bristle with cranes, masts, and smokestacks. "Stülckenwerft" identifies the Stülcken Shipyard. "Landungsbrücken" signs (foreground) mark landing stages. Some shipbuilders have two to four years of orders to fill.

Brussels' Daytime Buzz of Business Yields to Gaiety at Night

Belgium's capital vies with Paris as Europe's liveliest pleasure town. Restaurants abound in streets redolent of marzipan and fried potatoes; such food is a cherished tradition (page 702).

Here pedestrians, trams, and vehicles hustle across the Place Rogier, a main crossroad. Facing the square is the Gare du Nord (North Station), just out of sight to the right. New taxicabs await fares at the pedestrian island. Steps at the right descend to a gallery, bordered with window displays, that passes under the square. Bustling shopping streets, Boulevard Adolphe Max and Rue Neuve, enter the Place Rogier at center and left.

Architectural highlights of Brussels include the exquisite Church of Ste. Gudule and the Grand' Place, site of the ornate Gothic Hôtel de Ville (Town Hall), the elaborate Maison du Roi, and 17th-century guild houses with carved and gilded façades.

The city is headquarters of many Belgian domestic and colonial enterprises, and also manufactures lace, carpets, draperies, and furniture. Occupied in World War II by the Germans, Brussels fortunately suffered little physical damage. Home to 1,420,000 Belgians, the city is bilingual, speaking both French and Flemish.

Mrs. John R. Carpenter

Tod

© Elsa Tella Bonino

Smiling Fishermen Set the Mood for Battered Dunkirk, Rising from Its Rubble

Beret, wooden shoes, and a pocketful of twine are standard equipment of these men who haul nets off France's North Sea port. Here more than 300,000 Allied troops escaped German entrapment in 1940's historic evacuation to Britain. Abandoned ruins, toll of bomb and shell, still scar the face of Dunkirk (Dunkerque).

age-old search of youth for the simple freedom of the road.

For 15 minutes we played guessing games as to one another's nationality (people seldom mistake an American!) and discussed rigors and rewards of thumbing. Then we heard the motor start, wished them luck, and ran.

Like a youngster determined to keep awake for Santa, I fell asleep crossing the misty flats of the Netherlands in spite of a fixed resolution to see the Arnhem countryside. I not only missed the battlefield but slept right through a heavy thunderstorm.

At the Belgian frontier the refrigerators were unlocked and the mussels displayed to the customs authorities. Everything was in order and off we drove.

"Hey!" chorused the now wide-awake passengers. "You didn't give us a chance to have our passports stamped!"

"Don't be silly," the drivers answered us. "They never bother with such."

Visions of tangling with the law as we left the country again danced before us. Oh, well! A night in jail would be a fitting climax to any thumbs-up adventure.

Brussels, perhaps more than any other city in Europe, has a reputation for catering to the inner man. We came, we saw, and were conquered. Nothing, ever, anywhere has tasted so good as the shrimp-stuffed tomatoes which prefaced our first Belgian meal (page 701).*

* See "Belgium Comes Back," by Harvey Klemmer, National Geographic Magazine, May, 1945.

703 National Geographic Photographer Volkmar Wentzel

In the Full-size Original of *Neck*, Karl Batré Twice Rounded the Horn

The Bremen modelmaker puts final touches to a windjammer's rigging. Mr. Batré also built the frigate at right. In his younger years the craftsman, now 75, sailed the seven seas, rounding Cape Horn nine times. Miniature ships of many types have been launched from his cellar shop.

But of all the creature comforts offered, few appealed quite so much just then as a good night's sleep. We never did find the Brussels hostel. Perhaps it was just as well, as we—and our clothes—needed a more extensive scrubbing than could have been effected with the usual youth hostel plumbing.

Fortunately, most European hotels these days are so accustomed to hikers that they never bat an eye when you walk in looking like a pack rat and ask for a room.

Stepping Back Six Centuries in Brugge

We arrived back in the Middle Ages, via Brugge, late that afternoon. The toy automobile in which we were then riding with a pilot of Sabena, Belgian airline, threaded its way across the moat, through one of the old city gates, down a narrow street past nuns cycling furiously over the rough cobblestones, and suddenly shot out into the town square. It was like waking up in the middle of a medieval illuminated manuscript.

Brugge was a great power in the 13th and 14th centuries, comparable to Venice; but its estuary harbor silted up by 1490, finishing it off as a commercial center. The Gothic buildings remain to lure today's visitors.

The guidebook suggested two days to "do" Brugge. The Fates gave us one—a golden day, bathed in light and honey and balm. I stubbed along over the old cobblestones a full six centuries back in time, peopling the gabled houses with Jan van Eyck's "Jan Arnolfini,"

his "Man with the Pink," and the more earthy characters of the Bruegels.*

At the Brugge hostel that night we shared our bunk room with a Breton miss of twenty, traveling entirely on her own, as surprisingly many European girls do. Our circumnavigation of the North Sea paled a bit as an achievement when she passed out mosquito lotion purchased six weeks before in Norwegian Lapland!

Next day we climbed the Belfry and watched the bells as they gave a carillon concert. A quarter of the way up the 402-step climb was the Secreet Comptoor, or ancient treasure room, where the city's medieval charters were kept. Some six centuries ago the good burghers of Brugge had their own version of a combination safe: ten keys were needed to unlock the Comptoor, and each was in custody of a different citizen.

Magnifying Glasses for Art Lovers

At the Hospice de St. Jean, Hans Memling's masterpiece, the Reliquary of St. Ursula, is exhibited in the former medieval chapter room. The Flemish artists of his period were all noted for their fine detail, and attendants now hand out 8-inch magnifying glasses so that art lovers can minutely examine each facet of illumination on this chapel-shaped chest about 3 by 1 by 2½ feet in size.

We had to walk for a full mile out of Brugge. Nevertheless, we reached Nieuwpoort about 5 in the afternoon, having tramped southwest along beaches that saw much fighting in both World Wars.

Two Belgian hostelers materialized from nowhere just as we were wondering what to do next.

"You looking for a hostel?" they called, explaining that the nearest one still open was at Dunkirk (Dunkerque), 20 miles on.

"And the last bus for Dunkirk leaves in five minutes," said one, grabbing me by the wrist. The other seized Erica, and together they dragged us and our packs pell-mell to the bus, all of us boarding just as the wheels began to roll.

At the French frontier we meekly pulled out our unstamped passports, expecting a spluttering, arm-waving, hair-pulling session in the best Gallic style; but the official didn't even turn the pages. Our mental picture of sending postcards home from jail collapsed.

But the bus conductor made a half-hour ritual of guiding us to the Dunkirk hostel.

First of all, he very gallantly presented us with a candy bar. Erica, in turn, presented him with her last pack of British cigarettes.

He told us how sad it was—the driver had received word of a death in the family. We agreed it was sad indeed.

He said Dunkirk was a big place, larger than we would think. We waited. But he, the bus conductor, would know just what the young ladies should do. He would write down an address for us. He did; then took us to the car stop and put us on a tram.

Soon we were presenting ourselves as directed at the prefabricated Aide Américaine building. Through the open windows came a strange caterwauling. We looked at each other. A harassed nurse emerged and shook her head. She was sorry, but Aide Américaine was for the care of infants, not people our size, whether Américaine or not.

Hostel hunting round Dunkirk after dark was like plunging headfirst into an unknown pool. We would start down what we thought was a street and find ourselves teetering on the edge of a cellar hole where a bomb or shell had crashed through the façade of house fronts. In places the streets themselves seemed to disappear in shapeless rubble.

We were delighted to settle for a one-family, very French, hotel-café whose proprietress had a marvelous time cooking her specialties for us.

Next morning we had a good look at the battering Dunkirk had received: worse, it seemed to me, than Hamburg (page 702).

Here, overlooking Dunkirk's tragedy-torn harbor, the Fates decided to wash their hands of us. A cross-Channel ship bound for Dover was tooting at the quay; and glancing at its nostalgic name, *Twickenham Ferry*, we suddenly found we were in a terrific hurry to get back to woolly old sit-by-the-fire London.

Lost Within Sight of Home

At Dover, a couple from the ferry gave us a lift in their car.

So—we got lost, really lost, for the first time in one month and two thousand miles, well within the glow of London's lights. It seemed our "friends" had merely wanted to pump us on how their teen-age daughter should start out on her first hitchhiking expedition. About 10 p.m. they decided London wasn't on their way home at all, and plumped us down in an Essex cornfield.

We had a frantic two-hour cross-country race to reach London's underground before it closed down at midnight. I caught the last tube home; but Erica wasn't so lucky. She had to wait another hour for a suburban train. To pass the time, she says, she started telling the station guard about our trip.

"Wonderful, Miss," he said—and again a strong helpful male beamed in kindness—"that was wonderful, that was. You wait right here till I make you a cuppa tea and then you tell me all about it."

* See "Masterpieces on Tour," by Harry A. McBride, National Geographic, December, 1948.

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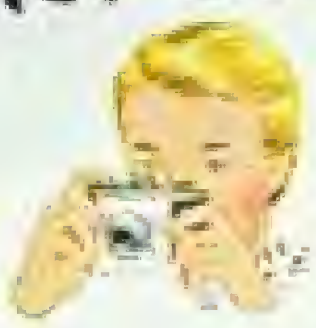

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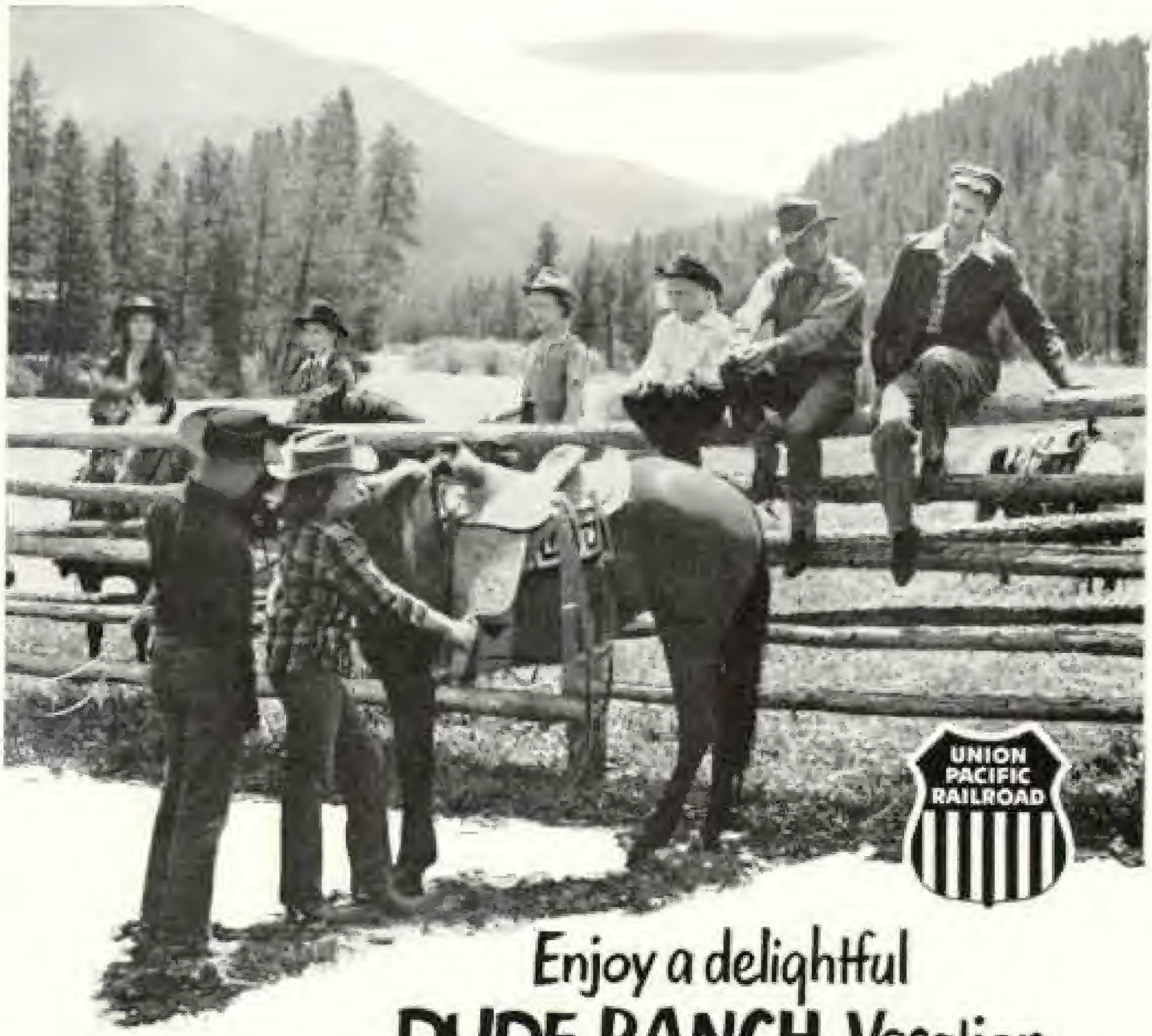

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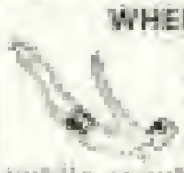

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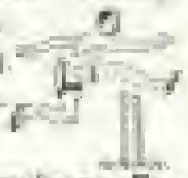

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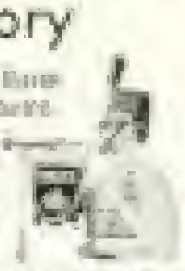

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* *The Membership Dues, Which Are for the Calendar Year, Include Subscription to the National Geographic Magazine*

To the Secretary, National Geographic Society,
Sixteenth and M Streets Northwest, Washington 6, D. C.: _____ *1952*

I nominate _____
PRINT NAME OF NOMINEE

Occupation _____
(This information is important for the record)

Address _____
PRINT ADDRESS OF NOMINEE

_____ *for membership in The Society.*

Name of nominating member _____
PLEASE PRINT

Address _____

* DUES: Annual membership in United States, $5.00, Canada, $5.50, British Isles, $5.60; elsewhere abroad, $6.00. Life Membership, $150.00 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.

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