SPECIAL SUPPLEMENT: WALL MAP OF EUROPE (page 778)

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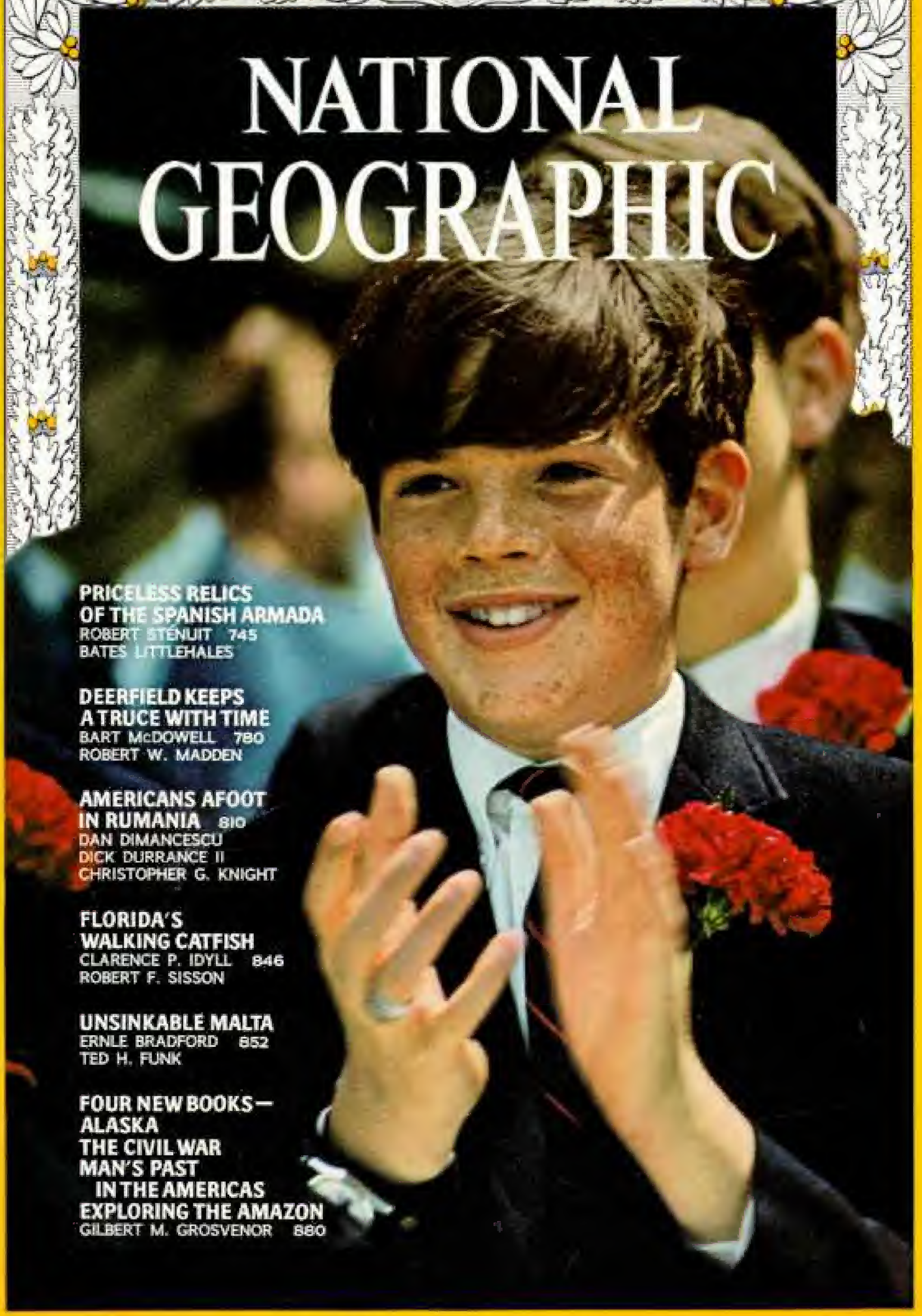
NATIONAL GEOGRAPHIC



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OFFICIAL JOURNAL OF THE NATIONAL GEOGRAPHIC SOCIETY WASHINGTON, D.C.

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COVER: Freckled 15-year-old wears the traditional red carnation for graduation from Englebrook, one of three private schools at Deerfield, Massachusetts (page 780).

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Baby-sitter for a giant chick

GRONK, A 25-POUND BABY CONDOR, streiches his wings for his foster father Jerome McGahan. The ornithologist and his wife, studying Andean condors in remote southwestern Colombia, rescued Gronk from a lofty eyrie after his parents vanished. Despite appearances, the six-month-old vulture will not master flight for several more months. An adult bird like the one at right may attain a 10-foot wingspread, second only to the 11½-foot span of the wandering albatross.

To learn more about the Andean condor, the National Science Foundation and National Geographic Society backed two years of research by the McGahans. At first the couple contemplated a study of the California condor, but then decided that intensive observation might further imperil this rare species. Its numbers already had been reduced to a mere 40 by 1964, according to a survey sponsored by the National Audubon and National Geographic Societies.

A future GEOGRAPHIC will bring you the McGahans' fascinating account. Share such research by nominating friends below.

Enter: The 360.

Its electronic flash lets you shoot a whole

You won't have to miss precious shots because you're fumbling for a bulb. You can catch a tender moment, an impromptu toast, an explosion of laughter.

You won't have to make the bride cut the cake ten times, or kiss her uncles ad nauseam.

Electronic circuits reduced from the size of a pack of cards to the size of a pencil point.

If you don't have to use flashbulbs, you can't run out of them. When the flash unit needs recharging, you can plug it into any wall socket for 10 minutes and shoot another pack. Plug it in for an hour, and it's fully

As you focus, louvers adjust automatically to insure correct light intensity.

recharged. (When it's not in use, you'll keep it plugged in, like your electric toothbrush.)

The world's most self-sufficient camera produces its own flash, measures the light for itself, develops the picture and signals electronically when it's ready.

The wedding season is coming. What a splendid time for the introduction of The 360, the remarkable new Polaroid camera with electronic flash.

What should pop at a wedding party is corks, not bulbs.

With The 360, you'll never have to use a flashbulb. When the electronic flash head is charged it signals you with a *boop... boop* and a flashing light, and you're ready to shoot 40 flash pictures. That's 5 film packs.

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wedding without stopping for a light.

Because the light is so fast, you'll take wonderfully spontaneous pictures. When you depress the shutter, the strobe releases a 1/1000th of a second burst of light. You can catch the wedding bouquet in mid-air, and champagne being poured.

You'll never have to ask your subjects to stop doing what they're doing and pose. The film is exposed only for that millisecond of light.

Suppose a waiter bumps into you, or your hand jiggles, you won't have to worry. The pictures are always razor sharp.

No flashbulbs ever. Electronic flash shoots 40 pictures, recharges on house current.

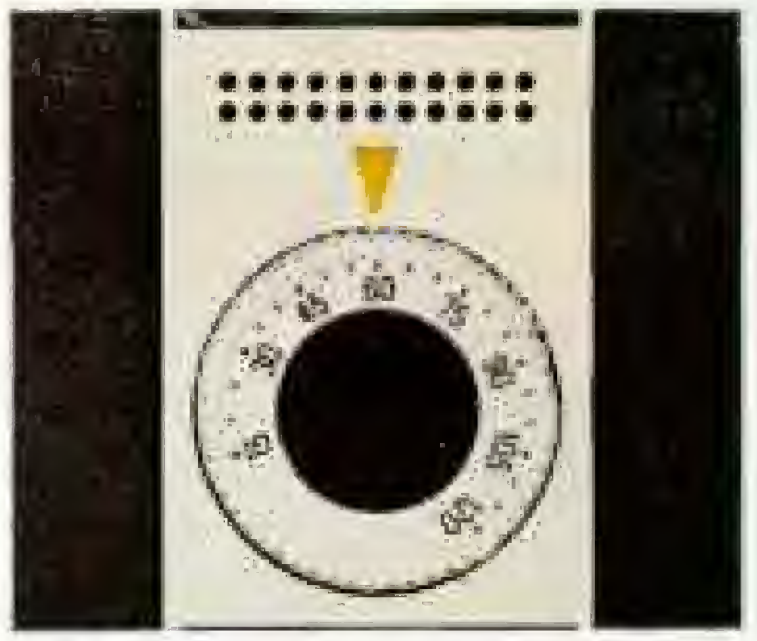
You won't have to think about exposure. All you do is aim and shoot. As you focus, louvers in the flash unit automatically adjust to deliver the exact amount of light for a perfectly exposed shot. This remarkable strobe light is particularly kind to flesh tones.

Your outdoor pictures will be perfectly exposed, too. The sophisticated electric eye and electronic shutter system will read the light and set the exposure automatically.

You won't waste any more pictures because of poor timing. When you pull the film pack out of the camera, an electronic timer is set off automatically. A tiny timer light goes on. The instant the print is perfectly developed, the light goes out and the timer goes *beeeeep*. Time after time, you'll peel off a perfectly developed picture.

One fascinating feature will give you an inkling of the ingenuity that went into this camera. In the timer, the shutter and the flash unit are circuits containing transistors, resistors and other electronic components. Each would normally fill a space as large as a deck of cards. In The 360, they have been reduced to tiny chips of plastic-covered silicone less than 1/32 of an inch square, about the width of a pencil point.

This new Polaroid Land camera has a Zeiss Ikon range-



Electronic timer sounds off the instant your print is perfectly developed.

and viewfinder. Triplet lens. Four film speed settings. Two exposure ranges for color, two for black-and-white. It can take Polaroid camera attachments for close-ups and portraits. It has a tripod socket. And instant pack-film loading.

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"I'm 14 years old and I can legally drive through this country from border to border."

The trouble with the 14-year-old is that he's half man, half boy.

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A child who'll do things in a car that can send chills down your spine.

Things that can turn him into a killer.

In fact, too many already are. Young people get into more crack-ups than any other age group.

Yet in the face of this murderous evidence some states still license 14-year-olds. And a lot that don't license them will let them drive through.

So many, in fact, that you never know where you'll run into one. Or when one will run into you.

But for once, time is on our side. Time changes boys into men. Only they'll never make it if we let them drive too soon.

What age isn't too soon? We don't know. Let the states get together and figure that out.

But we do know it isn't too soon to write your local legislator. And demand that he give kids a chance to grow up.

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One reason for its solid comfort is the solid way it's built. It doesn't flex or bend. And it doesn't sink if it's swamped. Its tough 4-layer skin is backed by a rigid structure of high-density foam, molded in under heat and pressure to form a one-piece hull.

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Unlike the traffic signs one finds in the States, traffic signs in Europe were designed for people who can't read the language of the country they're driving in.

All the signs in Europe, the British Isles, and Scandinavia are the same. And only one of them relies on words to make its point, and that is in English: STOP.

**"They all drive on the wrong side of the road."
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By 1978, cars will be less of a smog

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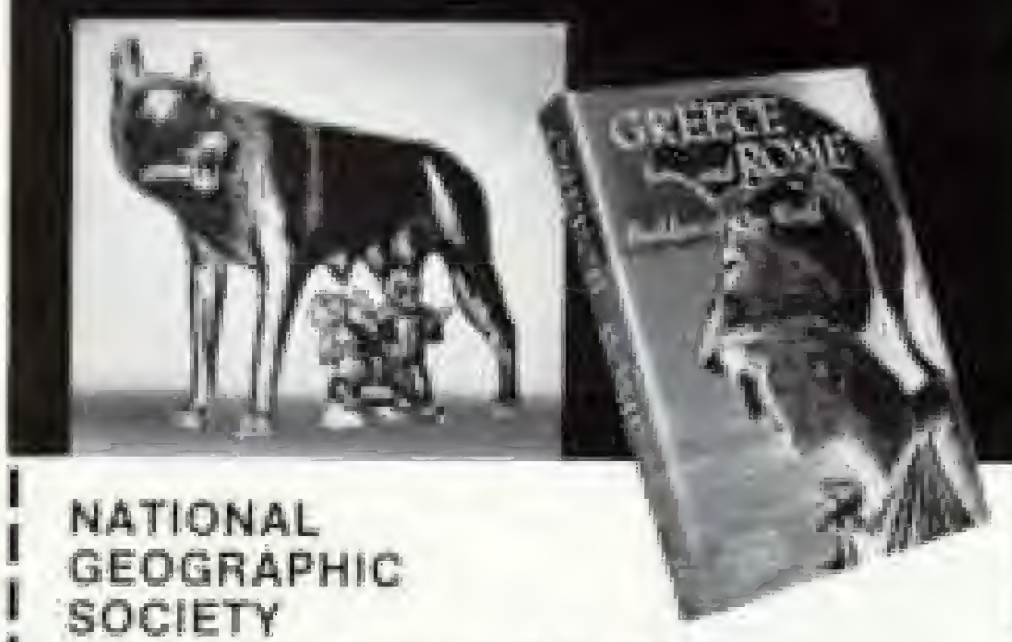

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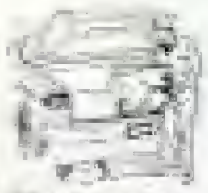

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June 1969

NATIONAL GEOGRAPHIC

IRELAND'S RUGGED COAST YIELDS

Priceless Relics of the Spanish Armada

By ROBERT STÉNUIT

Illustrations by National Geographic photographer BATES LITTLEHALES

A WILD NORTH WIND lashed the galleass as she sailed eastward across the top of Ireland. A monstrous wave had smashed her jury rudder: now she yawed and rolled in the troughs, making relentless leeway toward night-hidden cliffs to starboard.

Ahead, not thirty miles away, lay Scotland's Catholic west coast and sanctuary for the vessel's company, survivors of Spain's once-arrogant Armada. A few more miles and the *Girona* would be clear of Ireland; a few more hours would make good an escape begun nearly three months before. Oarsmen battled the wind with flailing sweeps, struggling vainly to steer the ship away from the shore.

The wind won. White water boiled off the starboard bow. A scream from the lookout brought sailors racing to drop anchor. Too late. A fang of rock rising from the sea ripped the *Girona*'s flank; she gutted herself upon it. Her back broke, her side opened, her entrails burst from her. Cannons, cannon balls, small arms, stores, coffers, and 1,300 sick men, too exhausted to struggle, sank into the convulsing surf (painting, pages 748-9).

Of the 1,300, only five reached shore alive. Among those who did not was a young nobleman whose last thoughts turned toward Spain and the eve of his departure with the fleet that sailed to conquer England. It was in that proud moment, we may suppose, that his betrothed had slipped upon his finger a lovely ring made especially to her order, a ring to symbolize her gift to him of herself.

The thought faded with the young man's life. His body, surge-driven, danced and postured like an unstrung puppet, then settled to the rising kelp forest of the sea floor. There the sea's small creatures and incessant swells dismembered and destroyed it. The ring fell

(Continued on page 750)

The Author: Veteran Belgian diver Robert Sténuit spent two days at 432 feet beneath the sea in a pioneering test he described in "The Deepest Days," NATIONAL GEOGRAPHIC, April 1965. From years of collecting data on shipwrecks and sifting many varying accounts of the Armada in Europe's libraries and archives, he pieced together his own conclusions about the fate of the warship *Girona*. Here he tells the dramatic story of finding her grave.

CHILLING DEPTHS, *littered with boulders, hamper divers gleaning treasures from the* **Girona,** *a ship of the Spanish Armada wrecked in 1588 off northern Ireland. Here the author closes a jar in which he collects coins and bits of silver and gold. Just ahead of him lies part of a silver candlestick.*

As if split upon a giant ax, the proud galleass *Girona* shatters against the rocks on the storm-wild night of October 26, 1588. "Take great heed lest you fall upon the island of Ireland, for fear of the harm that may happen unto you," wrote the Duke of Medina Sidonia, commander of the Armada, to his captains. After suffering defeat at the hands of the English (map, page 751), the remaining vessels of the 130-ship fleet headed around Scotland, then southward toward Spain. Violent storms sent many to their doom on the Irish coast. Don Alonso Martinez de Leiva, one of the Armada's most illustrious

PAINTING BY KENNETH SCOTT © N.G.S.

captains, suffered two wrecks, but survived each time to seek another ship for his homeward journey. In the harbor at Killybegs he found his third ship, *Girona*, damaged but still seaworthy. Patching her rudder and crowding 1,300 aboard, Martinez de Leiva set sail for refuge in Scotland. Off the awesome formation of the Giant's Causeway (pages 762-3), the jury-rigged rudder broke. As the ship was driven shoreward, oarsmen struggled to keep her from the rocks, but the sea's violence made the effort futile. We "ran upon a submerged rock and the galleass went to pieces," related one of five survivors.

BRUSHSTROKES BY ANNE L. STRANDER © N.G.S.

Token of love, a gold ring bears a hand holding a heart and the Spanish inscription "*No tengo más que darte*—I have nothing more to give thee." One of many recovered from the wreck, this ring probably belonged to a young nobleman whose betrothed saw him sail gallantly away to conquer England.

from the ravaged hand and rolled into a crevice. As time passed, storms in their succession piled sand and stones over the ring's resting place. Shells were strewn over it, to be slowly cemented together by time and the rust of iron fragments from the ship.

Four centuries later, poring over fading documents in the dusk of Europe's archives, I pieced together the story of the shipwreck. Soon afterward I found the wreck site itself under 30 feet of icy water. There, with four companions, I moved massive boulders, searched the crannies they concealed, sifted the sands in the crannies. In the very bottom of the deepest cleft, lying beside a golden two-escudo piece and several silver pieces of eight, we found the keepsake ring (above).

I carried it up out of the sea which had held it so long, into the world of men to which it belonged. Safe aboard our boat, the ring lay cold and wet in my black-gloved hand, glowing softly under the pale Irish sun. Curved upon it was a tiny hand, offering a heart, and these words: "*No tengo más que darte*—I have nothing more to give thee."

To me that ring is the most beautiful, the most touching treasure of the Armada. But many other pages of the dramatic story lay waiting for us to find beneath the unrevealing stones below. I dived again.

Wild Water Guards *Girona*'s Treasure

Brown kelp covered the undersea countryside like a jungle. But now, after many dives, I knew each block of stone, each narrow canyon of this submerged chaotic world. In the ceaseless swell of the Atlantic, the drowned forests swayed like palm trees in a hurricane (pages 752-3). That swell was the sea's pulse. We had learned to live by its rhythm.

To move ahead, I waited for a wave that would catapult me forward. Then, when my forward motion ceased, I seized a branch of kelp which, as the surge reversed its thrust, fluttered in the current like a flag in the wind. My scuba air hoses, pulling against the mouthpiece locked between my clenched teeth, vibrated against my ears. Then, once again, the kelp whipped forward. Letting go, I was swept onward toward my destination.

That destination was a crevice in which a silver coin was wedged. I had seen it on a previous dive but could not dislodge it. This time I carried a hammer and chisel. I found the spot, locked my legs around a rock, and began chipping away at the matrix that cemented the stones between which my coin was jammed. At last the piece came free.

I rubbed it between my gloved thumb and index finger. A profile appeared—that of a grave, bearded man—and legible letters. I held a silver piaster of Naples (page 752).

Of Naples? Yes, that made sense; the *Girona* was from Naples, a kingdom then under Spanish rule. And the face on the coin was that of the king who wove, in the depths of his Escorial Palace near Madrid, the web in which he wished to envelop the world. It was Philip II, the Prudent, Defender of the Faith, King of Aragón, of Castile, and of León, King of Portugal and of the Two Sicilies, King of all the Spains and the Indies, Duke of Milan, of Burgundy, of Brabant, Count of Flanders, King of Jerusalem: vanquished king.*

My hand, stiffening with cold, closed on the history of Europe. At last I touched that history, here where it had been made, after so many, many hours spent pursuing it in the

*Dr. Louis B. Wright told of the Armada's fate in "The World of Elizabeth I," GEOGRAPHIC, November 1968.

ILLUSTRATIONS © NATIONAL GEOGRAPHIC SOCIETY

Liquid shovel, a jet of water washes away sand and stones from the wreck site. Despite a lead weight on the nozzle, the diver has to wrap his legs around a boulder and struggle to control the writhing hose, fed from a pump at the surface.

Ireland ended the voyage for many. Weather kept the Armada from its planned course of return (map at left). Martínez de Leiva lost *La Rata Santa María Encoronada* at Blacksod Bay and *La Duquesa Santa Ana* at Loughros More Bay. *Girona's* final disaster occurred on Lacada Point.

Faint ribbon of spray, caught by the wind, flies backward from a waterfall that tumbles over a cliff near Dunluce Castle (pages 760-61). Just as a raging gale caused the wreck of the *Girona*, so high winds delayed the author and his crew in their explorations, supported in part by the National Geographic Society. Heavy weather disturbed the water even on the bottom.

Worn by centuries under the sea, this silver piaster struck in Naples bears the profile of Philip II of Spain, who sent out the Armada.

Constant turbulence made every dive to the *Girona*'s tomb an endurance contest. A heavily weighted diver at 25 feet fights his way against the underwater tempest. To reach an object spotted on the ocean floor, the men rode the pulse of the swell forward and, grasping pieces of kelp, anchored themselves to withstand the return surge. In the first weeks of the expedition—until summer calmed the seas—rough waters cut workdays to one out of three.

libraries of England, Spain, France, and the Low Countries. For me, Philip lived again, Philip who, in 1588, launched against England the most powerful fleet men had seen

Spanish Dream: To Rule England

On the 22d of July, 1588,* 130 ships with 2,431 guns left La Coruña on Spain's north coast (map, page 751). Of these, 65 were galleons and armed merchantmen: 25 were cargo vessels filled with horses, mules, and provisions. There were 32 small sailing craft, 4 galleys, and 4 galleasses, one of which was the *Girona*. Galleasses, like the much smaller galleys, were used as maneuverable, oar-propelled gunboats. Borne by this flotilla were 27,500 men, consisting of 16,000 soldiers, 8,000 sailors, 2,000 convicts and galley slaves, and 1,500 gentlemen and other volunteers.

Heading the expedition was Don Alonso Pérez de Guzmán el Bueno, Duke of Medina Sidonia, a gentleman of great nobility and—even in his own mind—minuscule competence to direct the operation at hand. Among his senior captains, however, was a noble famed throughout Spain: Don Alonso Martínez de Leiva, one of the bravest and ablest captains of the day. So splendid was his

(Continued on page 756)

*Dates used in this article are by today's Gregorian calendar, which Spain, but not England, had adopted by 1588. The English, using the Julian calendar, dated these historic events 10 days earlier.

WIELDING A CROWBAR, *a diver seeking relics of the* Girona *shifts a boulder on the sea floor. Virtually all of the treasures found had tumbled into crevices or lodged beneath rocks.*

TWICE ACTUAL SIZE

WINGED SALAMANDER, *an ornament wrought for a nobleman, wore a row of glittering rubies. Three survive.*

THREE-QUARTERS ACTUAL SIZE

GOLD CROSS *of a Knight of Malta belonged, the author believes, to the* Girona's *captain, Fabricio Spinola.*

TWICE ACTUAL SIZE

SPRIGHTLY DOLPHIN *in gilded brass probably served as part of a clock base.*

Mute witnesses to shipwreck, basalt towers known as the Chimney Tops overlook salvage operations nearly four centuries later. The expedition's rubber boat marks the main diving site east of Lacada Point, the dark, malevolent peninsula on which the *Girona* tore herself apart. Spaniard

ROCKHOUSE © NATIONAL GEOGRAPHIC SOCIETY

Rock lies hidden behind the scenic lookout at left. A red buoy at center proclaims the author's legal right to the site. This proved to be a wise procedure because, when the success of the expedition became known, invading divers descended to take a share until chased off by the Sténuit team.

reputation that some 40 of the finest families had placed their sons in his ship, *La Rata Sancta Maria Encoronada*, so that he might personally lead them to victory against the heretics of Protestant England.

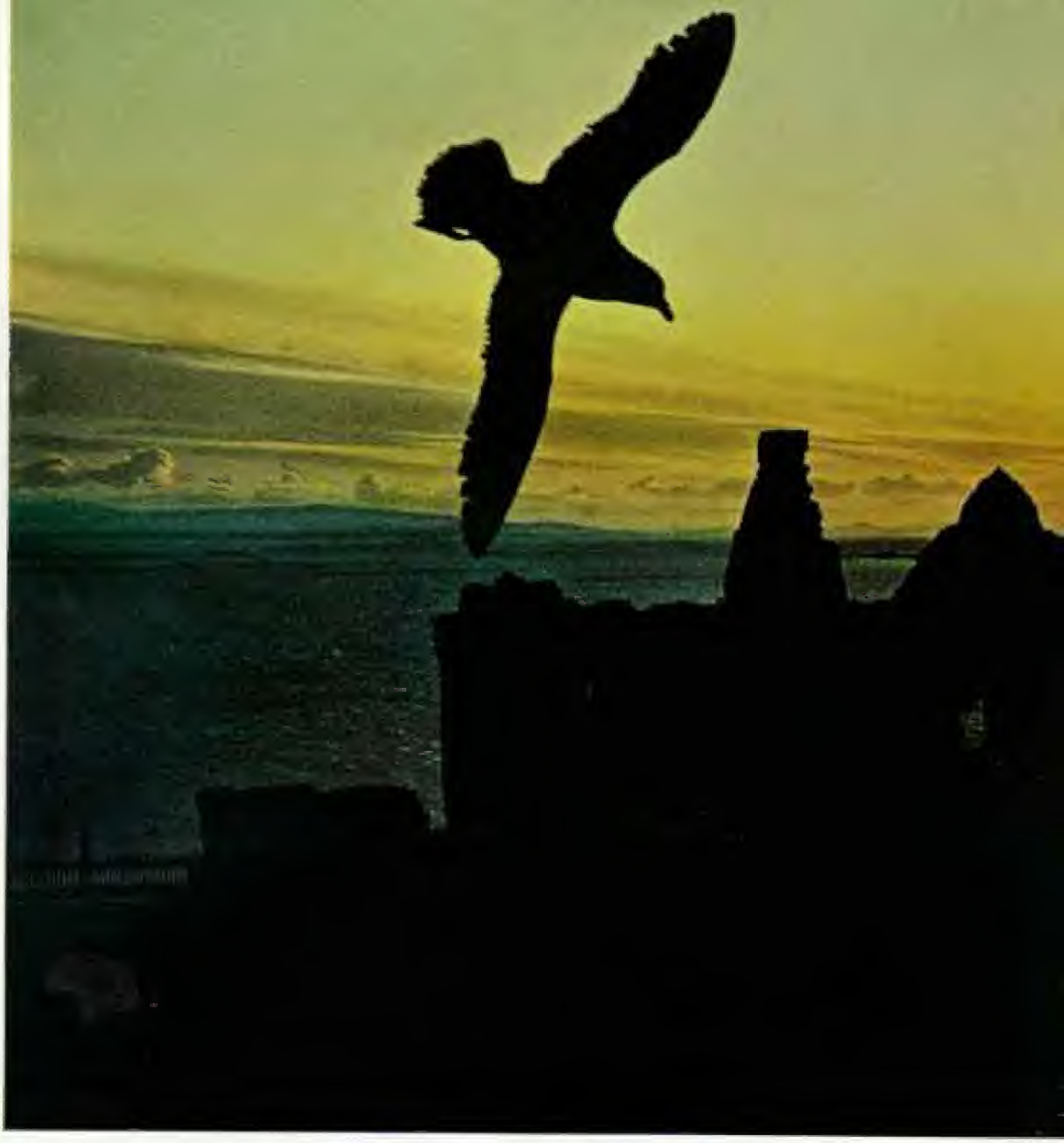
There was to be no victory. Disaster struck in the English Channel. The Spanish army in the Low Countries was not ready. England's fleet won the weather gauge and broke the order of the Armada off Calais. The wind drove Medina Sidonia toward a lee shore in Flanders, then changed and let him escape into the North Sea. He gave orders to return to Spain, going, as one officer recorded, "round England, Scotland, and Ireland, 750 leagues, through stormy seas almost unknown to us."

Scarcely half the Armada ships saw Spain again. Many sank at sea, and the tempests of that autumn drove twenty or thirty upon the Scottish and Irish shores. *La Rata*, damaged, dismasted, and undermanned, was one of them. After two terrible weeks alone in the North Atlantic, she had made her way into Blacksod Bay, on Ireland's west coast (map, page 751). Martinez de Leiva drove her up on a sheltered beach, took off his men, his treasures, and his small arms, and burned her.

By luck another Armada ship, *La Duquesa Santa Ana*, entered the bay, and he put his people and goods aboard her. Again he set sail, again he ran aground, again he got his men and his gold ashore and set up a stronghold to protect them, this time in a ruined castle near Loughros More Bay.

To overcome the stench from convicts and slaves who manned oars below decks, Spain's young grandees carried vials of perfume. Until this crystal perfume dauber turned up, the author guessed that the many silver vials he discovered had carried apothecary remedies.

An excited conference follows each surfacing. Eager to display the results of their efforts to each other, the author, right, and Francis Dumont intently examine the latest gold and silver coins. Table on the author's wetsuit indicates decompression stops necessary in surfacing from deep dives, a procedure unheeded in these 20- to 35-foot depths. Compass and depth meter are strapped to his wrist.



"**That castle wondrous,**" wrote the last Lord Chancellor of Ireland about Dunluce. The fortress lifts its shattered gables a scant four miles from the wreck site. Washed by the sea on three sides and cut by a chasm on the fourth, the bastion offered sanctuary to the *Girona*'s five survivors. The Lord of Dunluce also salvaged treasure from the wreck, according to one English record, and soon after the disaster began refurbishing the castle. Several cannon are also known to have been salvaged; a letter from the local English governor bewails his unsuccessful attempt to retrieve from the Lord of Dunluce guns from the *Girona*. This armament has since been lost.

Fifty years after the wreck of the *Girona*, a catastrophe befell Dunluce. In the midst of a tempest a portion of the castle's kitchen, "the cook, the table, the dresser, the meat and the maids, all except the tinker in the window," as one description reads, collapsed into the howling ocean below. Dinner was late that night.

Forgotten Armada gun, a cast-iron falcon, thrusts from a grassy slope near Loughros More Bay, which holds the wreckage of the *Duquesa*, Martínez de Leiva's second ship. He and his men barricaded themselves here until they heard about the *Girona* and walked to it at Killybegs Harbour. Here the author measures the bore of the *Duquesa* cannon.

Spies soon brought word of other Spanish ships at Killybegs, 11 miles away across the hills of Donegal. Martínez de Leiva hurried there with the crews and treasures of the wrecked *Rata* and *Duquesa* to find three ships, one damaged and two destroyed, and three more sick and starving crews.

With parts from the wrecks and help from the strongest men of the five crews he now commanded, he repaired the one salvageable vessel, the galleass *Girona*. He rebuilt her ruined rudder as best he could, patched her hull, put aboard 1,300 men and their most precious possessions. So loaded, his ship could not hope to reach Spain. His only chance now was to make his way to Scotland, where James VI, son of Catholic Queen Mary Stuart, would doubtless give asylum to her Spanish co-religionists.

On the night of the 26th of October, wind-driven waves smashed the *Girona*'s jury-rigged rudder. At about midnight, only a few hours from her destination, she struck a point of rock along the Giant's Causeway and was battered to pieces in the surf.

Shipwrecks Become a Lifetime Hobby

Drowned ships laden with history lie hidden under all the seas, luring both the inquisitive and the acquisitive with promises of new knowledge and rich reward. At 18, I put together my first list of great wrecks. My files now fill a room, and for years they have accorded the *Girona* a place of honor. They held exact information about how she sank, but not about where she sank.

References to the *Girona* in documents of the day were frequent, but often contradictory. Some ten days after she went down, word reached the English Lord Deputy at Dublin Castle that "the said galley which departed from the said harbour [Killybegs] with as many Spaniards as she could carry, and sailing along the coast towards the Out Isles of Scotland, whither they were then bound, struck against the rock of Bunboyes, where both ship and men perished, save only five who hardly got to shore. . . . This rock of Bunboyes is hard by Sorley Boy's house."

"Sorley Boy" was Sorley Boy McDonnell, the local lord, a once-implacable enemy of Ireland's English masters. He had good reason to be. Drake had sunk his galleys; Essex's men had murdered his wife and younger children. His "house" was Dunluce Castle, whose silent, weather-worn walls still top the plunging cliffs near Portballintrae (preceding pages). But "Bunboyes," the mouth of the River Bois, or Bush, lay two miles to the east.

In December the Lord Deputy informed London that he had heard of "three fair pieces of brass which lie within view between the rocks at Bunboys," and that Martínez de Leiva had drowned. In August he ordered that the Spanish cannon be salvaged, only to learn that a Scottish captain, accompanied by two Spaniards, had already taken them. The letter conveying this information added, "It is reported that there is great store of gold and silver there." The official who forwarded this report noted, ". . . those pieces that be under the water I presume are there still."

Later the English governor of the region, Sir John Chichester, wrote, "James McDonnell has helped himself to three chests of treasure, which were taken to Dunluce Castle." And later still: "The McDonnells . . . have planted three pieces of ordnance . . . which were had out of one of the Spanish ships. . . . I have demanded the said pieces . . . but they have utterly denied the delivery of them."

I had already discovered that in the years just after the *Girona*'s sinking,

The Giant's Causeway, geologists insist, resulted from lava cooling into prisms of basalt. But every good Irishman knows for sure that the legendary Finn MacCool built the causeway as a route to Scotland to fight a boastful rival. The *Girona* successfully avoided this jagged stretch, only to meet disaster less than a mile farther around the coast.

CAMEOS OF LAPIS LAZULI *wear frames of gold set with pearls.*

GROTESQUE FACE *frowns from a silver sculpture, its use as yet unknown.*

EKTACHROME (ABOVE) BY MARC JASINSKI; KODACHROME BY BATES LITTLEHALES © N.G.S. BOTH ACTUAL SIZE

Sorley Boy's son James had enlarged and decorated Dunluce. Now I knew where his sudden wealth had come from!

Being a devout optimist—as all underwater archeologists must be—I reasoned that Sorley Boy & Son could not have collected all of the *Girona*'s treasure. I decided to go to Ireland to see what the McDonnells had left for me. My life-long companion, Belgian photographer Marc Jasinski, agreed to come along, though he was not convinced that anything would be left.

"Others have certainly searched the area before us," he pointed out.

"No doubt," I said. "Still, all the old documents point to the rock of Bunboyes, and that is apparently where all the other searchers have looked. But consider, it was Sorley Boy's people who found the wreck. Would they have told the English where it was, when they planned to keep its guns and gold to themselves? No, not the English or anyone else. I'm convinced that Bunboyes was a convenient camouflage.

"But even if it was not, our treasure-seeking predecessors would have been defeated by an error that they all made; they took the place names mentioned in the old accounts too literally. I have studied 16th-century maps of this region. Only two places are named on them along this stretch of coast: Dunluce and the River Bois. Therefore, those are the only names the English spies could use in their reports. Searchers have dived dutifully at each place, as if its name on the map were an X marking the spot."

I unrolled a detailed Northern Ireland Ordnance Survey map and pointed to a region northeast of Portballintrae.

"But look here, Marc. See, here is a 'Spaniard Rock' and a 'Spaniard Cave'; a 'Port na Spaniagh' and a 'Lacada Point' [small inset map, page 751] These names do not appear on older maps. Why do we find them on this modern one? Because, when it was made, there was no longer any reason to conceal references to the *Girona* wreck. And so these old names, kept alive in the minds of ten generations of fishermen, were told to the surveyor who came along asking what each point and cave was called."

Marc and I reached Portballintrae one stormy day in June of 1967. We found lodgings and followed a sheep path along the Giant's Causeway (preceding pages) to Port na Spaniagh, an amphitheater of wild water

bound by a semicircle of terrifying 300-foot cliffs, black and vertical. At their bases, acrobatic sheep grazed on steep talus slopes bright with grass. Below, the green sea insolently proclaimed its power. Its rollers burst upon the rock of Lacada, throwing up foam that swirled away in the gale like flights of butterflies. Marc shook his head.

"After four centuries of that sort of treatment, what could be left of the wreck?"

"Small fragments, no doubt."

In a souvenir shop, Marc bought a tourist booklet about the region for 1s. 3d. He leafed through it, then burst into laughter.

"How many hours of your young life did you spend wearing out your eyes on old documents? Seven hundred? Nine hundred? My friend, you could have saved yourself the trouble. Look!"

And I read: "In 1588 a ship of the Spanish Armada, the *Girona* . . . was wrecked with the loss of almost all her company at a little cove near the Giant's Causeway still called Port na Spaniagh, 'the port of the Spaniards.'"

"That's all very well," I said, "but if I hadn't done enough research to doubt the original sources, and had simply read this booklet, I would have done what all the others did when they read it: I would have shrugged my shoulders and gone off to dive at Bunboyes, where the original sources said I should."

On the 27th of June the weather calmed enough to let us take our outboard-powered pneumatic dinghy to sea. We anchored in Port na Spaniagh, and I slipped over the side for a look around. Nothing.

I headed for Lacada Point, watching the bottom through the swinging kelp, diving down here and there to turn over rocks and peer into holes. Still nothing. I found the submerged cliff of Lacada Point and followed it northward. Suddenly I came upon an open, level stretch, a sort of esplanade spreading out before an enormous block of stone. Near its center a white object caught my eye. I lunged toward it, seized it, heaved at it. Lead! A three-foot ingot of lead.

My heartbeat speeded as much from excitement as exertion as I recalled phrases from a document I had studied in the British Museum. It told of a "man named Boyle" who had discovered another Armada wreck in Donegal at the end of the 18th century. Among his finds was "a piece of lead a yard long, triangular . . . and pointed towards the ends, getting thick in the middle."

An exact description of my ingot! I rolled it over and found five crosses of Jerusalem stamped upon it. I had found my wreck. A feeling of joy flowed through me, but of calm joy, almost of comfort. The *Girona*'s remains lay hidden here. Surely there was more than an ingot of lead.

Testament to faith: This silver crucifix perhaps offered solace to a Spaniard in his last moments. The execution of Mary Queen of Scots by her Protestant rival, Elizabeth I, gave Philip II of Spain the excuse he needed for his attack on England. Some 180 priests sailed with the Armada.

I darted eagerly along a long rocky corridor, it led me straight to a bronze cannon, which I recognized as a demi-saker. The sea floor sloped away into deeper water. I followed it down, as objects falling from a sinking ship above would have done, and found another gun—a small breechloader bearing the arms of Spain. I examined it, fascinated.

No museum in the world possesses a single cannon of the Armada; not even a cannon ball, for that matter. Nearby lay several breechblocks, more lead ingots, sheet lead, and cannon balls—cannon balls everywhere.

Enough for today, I thought. I would stop to savor my joy in finding the first wreck of the Armada to be located since Boyle's, 200 years ago. But Boyle had broken up his "pretty made and pretty shaped" brass cannon to

make "three cart-loads of brass at 4½d. per lb." When I surfaced, my smile was so broad that my mouthpiece dropped from my teeth. "I found it!" I told Marc unnecessarily. My expression had betrayed my discovery.

Storms followed, leaving the sea wild and ugly. We dived anyway, unable to wait for another look at the wreck site. I picked up a gray pebble, round and flat.

"Aha!" said I to myself. "I'll make Marc think this is a piece of eight." I turned the pebble over. It *was* a piece of eight. There was the cross of Jerusalem, worn but decipherable. Marc and I shook hands ceremoniously, mumbling in our mouthpieces. Later we found an anchor northwest of Lacuda Point, and other pieces of eight.

Then, for the first time in my years of treasure hunting, I saw gold glimmering on the sea floor. After 15 years of comical efforts and repeated failures, there was the clean, bright metal under my hand: first a little ring, then a bit of exquisite chain.

But what to do now? There we were, just the two of us, with no crew, no equipment, no funds, and a phenomenal discovery on our

Stone cannon balls litter the sea floor. A special class of short-range guns called perriers fired the stone shot; longer-range cannon used iron projectiles. Armada inventories record a total of 123,790 round shot carried by the fleet.

Entangled in tackle, a small gun from the *Girona* is raised to the surface. Unlike large cannon of the time, this swivel piece loaded through the breech rather than the muzzle. The lines from the gun attach to an air-filled flotation bag that lifts it to the surface. The relic will be towed three miles behind the rubber boat to expedition headquarters in Portballintrae.

hands. We resolved to keep our secret and return the following year prepared to work effectively. We placed our finds in an undersea cave and returned to the Continent.

Raging Seas Delay New Team

As I read over a list I had made of all the things we would need, I realized that one major item had been left out, a truck big enough to carry all the rest of the gear. My friend Henri Delauze, a pioneering diver of Marseille, became the sponsor of the expedition. He supplied the needed equipment. Funds came at first from our own pockets, but were soon increased by a generous contribution from the National Geographic Society. Above all we needed time. My employers, Ocean Systems, Inc., of New York, kindly granted me a leave of absence.

By April of 1968 we were back in Portbail-lintrae with two French professional divers, Maurice Vidal and Louis Gorsse. Francis Dumont, an architectural student, would attend to our charts and sketches. Marc was charged with photography and the preservation of our finds.

We were on the spot, eager, well-equipped —and helpless. By day we watched a raging sea whose fury never seemed to lessen. By night, icy blasts from Greenland howled through my ill-fitting window to freeze my nose before escaping under my door. Each morning I judged the weather by the noise. If the breakers were crashing on the beach beneath our cottage, I could go back to sleep.

We planned to chart every object we found at the wreck site. For that purpose it would have been convenient to divide up our area into precise squares, as is done in land archeology and even on level sea bottoms. But the *Girona*'s resting place did not lend itself to such regimentation. Here the only straight lines that could be established were those between one landmark and another.

Toothpick of gold probably belonged to one of the young noblemen who sailed with Martínez de Leiva and perished with him in the *Girona*. These scions of Spain had taken with them enough money, golden chains, silken and velvet clothes, and jewels to make a fitting show when, with anticipated pomp and ceremony, they assumed the rule of the conquered English kingdom.

When at last the sea let us begin, we established these lines with strong ropes, tagged their ends with reference numbers, took bearings from one to another, and photographed the whole underwater network. All this gave us the basis of our chart.

There was a limit, we knew, to what we could learn from the positions of the objects we found. Only the heaviest pieces would still be anywhere near the wreck site, and even these would have followed the slope of the bottom to their present resting places. Of the wooden ship itself, nothing could have survived. But the lines we rigged gave us reference points, and helped us find our way through the tumble of kelp-shrouded rocks. They helped us for two days. Then the seas rose and tore the whole system away.

Louis did his best to repair it despite the surges, but since he had to hold on with both hands and could not work with his teeth (clamped hard on his mouthpiece), he had to give up for the moment. We retreated to deeper water and resumed our hunt.

Luck was with us from the start. We found gold coins minted in Seville, carrying the crown of Aragón. We found buttons of gold, silver forks (opposite), and many silver and copper coins (pages 776-7). One afternoon, in less than an hour, I filled a jam pot, a Band-Aid can, and a mustard jar with pieces of gold and silver. Their rich glow was almost enough to counteract the awful, joint-stiffening cold that grew from discomfort to agony during each dive.

Yet, as I dug among my pebbles, I was content. "I have arrived," I told myself. "I am exactly where I want to be, doing exactly what I want to do. I almost welcome the cold, the exhaustion, the nausea of seasickness. . . ."

At that moment a sweep of my right hand exposed a yellow object. Gold? No, only a shell. I picked it up, looked at it closely so as not to be fooled by such a shell next time. It was no shell at all, but a gold medallion.

Before surfacing, I noted a black cemented mass of stones, cannon balls, and bits of metallic debris. I spoke of it later to my colleagues, informing them in professorial tones that it was typical Spanish ballast and fraught with significance.

"But," asked Maurice (who had also examined my find), "why did the Spaniards put navigational instruments in their ballast?"

"But," asked Louis, "why are there pieces of gold in the middle of this significant ballast?"

My theory was shaken, and collapsed completely next day when I found a superb gold chain leading into the black mass and coming out again on the other side. The agglomeration, it seemed, was a natural one, formed as rust and gunpowder combined with the lime of crushed shells to cement together bits and pieces of the shipwreck.

We could not take this amalgam apart underwater without damaging the objects it contained; besides, the job would take too long for men working with limited air supplies. We had to lift great lumps of the stuff and take it ashore, where we could pick it apart at leisure. From those ugly lumps came pieces of eight, reals, escudos and ducats, copper buckles, gold chains, bits of pottery, lead balls, knives, spoons, and forks.

A couple of stones locked it in place. And if I took out the stones which supported other stones which supported the pillar which supported the roof . . . pancakes!

Still, I wanted that candlestick. I held my crowbar at arm's length and poked cautiously, one eye on the ceiling of the cave and one on the exit. There came a sudden sound of rolling stones, and out I shot. Out came Maurice, too. Clearly it was he, dangerous lunatic that he was, who had nearly brought down the roof.

I gestured severely. Look here, I signaled, be reasonable. I pointed to the great blocks, imitated a collapse, then the thinness of a flattened *crêpe*. Maurice responded with eloquent gesticulations, the gist of which was that if one of us was a horse's hindquarters it was certainly not he; that whereas he had

Silver forks served the gentlemen aboard *Girona*. In addition to forks, divers retrieved pieces of silver plates, bowls, and goblets. Ship's provisions taken aboard in Spain included biscuit, salt fish, bacon, cheese, rice, beans, oil, vinegar, and water. Because of departure delays, much of the stock spoiled even before the Armada set sail, including water that had been stored in casks of green wood.

Some of the richest of the cemented lumps came from a cave underneath two huge stone blocks of about a hundred tons each. As we removed chunks of the agglomerate, some of which supported the blocks, we increased the risk that the cave would collapse on us. To prevent such a disaster, we left columns of stuck-together stones here and there to prop up the roof. Should they ever give way, we would instantly be converted to corpses—or, more precisely, to pancakes.

I urged caution. "Let us stop all our imprudences in the cave. Better leave a few coins there than one of us."

A right and proper admonition; but the trouble was that wedged amid stones that supported these Damoclean pillars there was a silver candlestick in perfect condition. I could touch it, but I could not pull it loose. dislodged only a few pebbles which could not have affected the architecture of the place, I, an obvious public menace, had acted with wanton disregard for our mutual safety.

Next day I had my candlestick. But in the bottom of the hole from which I had removed it I saw the dull glint of a second, and beside it an enormous gold ornament, the biggest yet. How to get at them? A tricky business; but how they shone!

An hour later I pulled them free. The gold ornament was a copper pot handle. But behind it lay part of a gold chain that disappeared into the base of the pillar.

The cave is still there, unsupported, its pillars gone, emptied to the last fissure. It stands in defiance of gravity, a monument to temerity.

By mid-May the sea was calmer, and the

sun sometimes came out. Since we lived in the sea, we seldom saw it. But the reddening snub nose of 4-year-old John McConaghie, our most faithful supporter, indicated to us by its color the state of the weather topside. Wee John was the youngest son of our host in Portballintrae. Every morning he came down to the dock to see to the casting off of our lines, and every evening he returned to supervise the unloading of our boat.

New Menace: Fast-growing Kelp

As the water warmed, we found we could stay under for five or six hours a day. But the warmer water also speeded the growth of kelp. It stood thick as sugar cane, slick as rubber. We cut the plants away, but they drifted back as if to swallow and imprison us on the sea bottom.

After the cave was emptied, we attacked open stretches of the sea floor. Since the upper layers of stones and pebbles were barren (the heavy metal pieces having settled to solid rock beneath, and all others disintegrated), we disposed of them without much formality. Our best tool for clearing them away was a hose fed by a motorized pump in the dinghy.

The man who worked with the hose felt as if he were wrestling with a gigantic and epileptic sea snake. He held on with both hands, grasping a boulder with his legs, and braced against the recoil of the powerful, invisible water jet hurtling out of the heavily weighted bronze nozzle. Before him sand burst upward in dark clouds, gravel flew, stones bounced and

rolled (page 751). For a fleeting moment the diver felt an unaccustomed sense of power in his contest with the sea.

Once the bedrock was cleared, the jet was turned off and we explored the crannies and cracks delicately by hand. Silver objects emerged worn and broken. But the gold, always at the very bottom of a protected pocket, came up brilliant and unscratched.

We examined every inch of the wreck site in this manner. Then it became necessary to bring up the two cannon so that we could see what lay under them. First came the small breechloader, hoisted from the sea bed by a big neoprene bag filled with air from one of our tanks (pages 766-7). The bag swelled like a frightened sea monster; the cannon shifted and came loose. Then the whole rig rose slowly upward, pouring out silvery bubbles. We towed it back to Portballintrae.

And that was the end of our secret. Coins and jewels could vanish into our diving bags, later to be catalogued and listed with government authorities (pending their decision—not yet made—on what benefit we might derive from our finds). But our cannon, as we loaded it aboard the truck, was there for everyone

Bobbing above the treasure site, the Stenuit team prepares for another 30-foot descent. Onlookers from a nearby village watch from Lacada Point.

"The cold below was unbelievable," said Mr. Stenuit. "It made our sinuses ache, numbed our joints, and paralyzed our muscles."

Wealth of Spain in bits and pieces rewarded sharp-eyed divers. Here the author sorts gold beads, chain links, coins, and jewelry. A medallion of the Order of Alcántara lies beside a winged salamander (page 755).

Symbol of honor, this battered medallion belonged to an unknown Knight of Alcántara. The badge bears the cross of the order on one side, a carving of San Julián del Perejil on the other (enlarged at right). The pear tree beside him symbolizes a grove near a fortress defended by the knights against the Moors in the 12th century.

Although inventories in the Spanish archives list armaments and provisions carried with the Armada, the wealth of trinkets found by the Sténuit team reveals the human aspect. Aside from goods recovered by the Irish at the time of the shipwrecks, this expedition has raised by far the greatest find of Armada relics. Although the coins, jewelry, artillery, and hardware will ultimately be evaluated in monetary terms, their historical value is incalculable.

Divers recover navigator's instruments

UNDERWATER JUNGLE concealed the *Girona*'s astrolabe, a device for measuring the sun's height to determine latitude. Forests of kelp always hampered the author's team, and, as days grew longer, the plants developed stalks taller than a man and as thick as his arm.

The astrolabe found by the author, one of only 24 such sea astrolabes known today, nearly matches one now in Britain's National Maritime Museum at Greenwich (right). Found on Valentia Island, County Kerry, it too may have come from an Armada ship.

The Sténuit expedition also found numerous dividers (left) used by the *Girona*'s navigator to chart his course. The Spaniards were experienced sailors, familiar with the waters south of Ireland. Had it not been for unseasonable gales, disease, hunger, and exhaustion, the Armada's surviving ships might easily have made their way home.

ENGLAND (SOUTH) EXPEDITIONS (ABOVE) AND RECORDING BY YATES LITTLEWOOD © N.A.S.

to see. And indeed everyone rushed to see it, to touch it, to ask about it. Where was the gold, they wondered? Where had we hidden the chained skeletons of the galley slaves? Where were the guns and swords and jewels?

Word spread from the port to the pubs, from the pubs to the newspaper offices and the broadcasting studios. The next Sunday, the invaders descended.

Twelve of them came, 12 divers of a Belfast club, armed with jimmy bars and picks and hammers and sacks and lifting bags.

"Be careful," I told them. "Don't touch anything; we are charting the wreck site. Besides, I am legally 'Salvor in Possession.' "

They left without answering. We left too, passing them in our faster boat, resolved that they should take nothing away.

Underwater Confrontation

The invaders searched for hours, finding nothing. Then they spotted one of our marker ropes and followed it right to the cave and to our sentinel, Louis. There he stood, immobile, arms folded upon his chest, eyes cold as the sea. The Belfast boys surfaced hurriedly, bent on quitting the sea entirely, but their boat had gone back to Portballintrae to pick up another load of their clubmates.

They climbed onto a little rock to await its return. Later, below that same rock, we found 45 pieces of gold and a little pile of jewels. One day, I thought, I shall tell them that.

The second group arrived. I followed the divers unobserved and saw one putting a piece of lead in his bag. I swam up and tapped him on the shoulder. He spun around as if a shark had seized him. I emptied his bag. Then his colleagues surrounded me and shook me as mine came to my rescue.

We were outnumbered, but our adversaries, being clubmen, had to call a committee meeting before advancing to the attack. The majority apparently favored retreat. They went away, and we went back to work.

Summer brought long evenings that lasted until 11 o'clock. It also brought the tourists. Each evening they came to count our ingots of gold, and the fact that we had none did not discourage them.

"I keep wondering," said Maurice, "what these people did before frogmen came to Portballintrae."

We wondered, too, what people had talked about in earlier years. Certainly we were the prime topic of conversation and speculation at the moment. Rumor had it that we were smuggling gold to the United States in vast

quantities. School children reported in their themes that we had found 200 tons of gold and several enormous gold cannon.

Nevertheless, the fact was that, with our laughable boat and our simple tools, we were bringing up treasure rich enough to grace an over-imaginative movie. Louis discovered the cross of a Knight of Malta (page 755). Probably it belonged to Fabricio Spinola, the *Girona*'s original captain, who was a member of that venerable order. I found a superbly carved gold salamander, inlaid with rubies, and once collected 15 gold coins in a single day. The next day Maurice found 20—and I a small brown nail.

Sea Floor Scoured Foot by Foot

Week after week we extended our search, discovering as we did so that the sea had spread the debris of the wreck over a wide area. But wherever we searched, luck accompanied us. I found an astrolabe, a navigational device for taking sun sights (page 774), and the remains of a loaded gun. Near the weapon I picked up what seemed to me a most improbable artifact, a piece of quartz some two inches long, set in a silver stopper (page 758). Later we realized that it was a perfume applicator; its noble owner would pull it from its scent flask and dab his mustache with it whenever he stood downwind of the ship's 300 chained and reeking oarsmen.

Each evening, as I made my rounds to observe our progress for the day, I marveled at the extraordinary efforts and discoveries of my colleagues. There was Francis, head down in a hole from which only his lower legs protruded. In his carrying net were two sword pommels and three gold chain links.

Farther on, Maurice had altered the whole appearance of the bottom. He had told me he was creating an auto route: it was true. Blocks of stone weighing two or three tons had been moved aside by clusters of lifting bags to create a veritable boulevard. Maurice himself was invisible under a great flat stone, beneath which he had crept after removing his air tank. He now breathed from it through a long tube as he sought the rubies that were missing from a jeweled pendant he had found earlier.

Louis labored in a great stretch of stones and sand. Always calm and precise, he nonetheless proceeded with his task like some cataclysm of nature. Shoveling, levering, fanning with his indefatigable left hand, he could sift three cubic yards of bottom material per day. In his collecting bag were two gold

coins, a ring decorated with diamonds, a little ruby, and parts of silver goblets. Apparently a sizable section of the ship had been carried to this spot, 30 yards from her point of impact, before it sank.

Marc, when not busy with his cameras, searched for lead. He found only lead, but he found it everywhere. We could not leave an empty sack anywhere on the bottom without coming back to find it full—of lead. He followed after us, checking our excavations and reproaching us for every scrap—of lead—we had failed to find.

"To the archeologist," he said (most justly), "a fragment of a lead ball can tell as much as a coffer of doubloons."

Our coin collection grew more complete. It represented by now all the mintages of the time from Spain, Naples, Portugal, and the Low Countries. The coins bore the names of Ferdinand and Isabella; Charles V, the Holy Roman Emperor, and his son Philip II of Spain. More valuable still were objects of everyday use, which daily increased our

GLEAMING GOLD DUCAT *(above) bears the proud profile of Charles V, Holy Roman Emperor. The reverse (center) carries his coat of arms. Jerusalem cross adorns a four-escudo coin (right). A silver four-real piece minted in Mexico City remains embedded in bottom debris. At left, the author points out a detail on one of the nearly 750 coins to diver Louis Gorsse.*

understanding of 16th-century life. We had a broad range of religious objects, too: gold medallions that recalled the vanished lordlings; a silver crucifix, possibly that of a chaplain (page 765); and humble medals of pewter, bearing the image of Christ or the Virgin, which evoked for us the fate of galley slaves who clasped them in their hands as their chains dragged them to the bottom.

Scars Left by Summer-long Battle

The handsomest jewels appeared during the last days. Louis had found two baroque brooches of beautifully tooled gold, decorated with pearls, but in each the central stone was missing. One day, burrowing under a boulder, I found a complete one with a lapis-lazuli cameo, bright as new, which showed a Roman emperor in profile. Under the same boulder, after three hours of rib-bending, neck-wrenching work, I found four more brooches, all different. Obviously, they represented some of the 12 Caesars. Never had the art of the cameo been carried to a higher level than by the Renaissance artists who had made these masterpieces (page 764).

Now, in late September, the tattered kelp streams like banners after battle. Summer is past, the tourists have gone. The port is deserted. Even Wee John has abandoned us in favor of kindergarten.

We are proud of our 2,800 hours of labor under the sea. There where we have toiled for five months, the disturbed terrain is no longer recognizable. The bottom is pitted with the deep wounds of our digging. What the sea hides, she hides well. But we have learned her tricks, one by one, and we have taken from her the treasures and the humble objects she has guarded for nearly four centuries.

It is time to put away our gear, to deflate our boat, to complete our charts of the wreckage, to catalogue, photograph, and publish our finds, to clean the last of our 140 gold and 600 silver coins. Then, like Wee John, we too must leave the enchantment of the past, of treasure, and of the sea to return to the world of serious things. THE END

Europe, a Restless Continent Remapped

SMALLEST OF CONTINENTS except for Australia, Europe holds a fifth of earth's people. National Geographic's new wall map of this teeming corner of the great Eurasian land mass spans an area ranging from Jerusalem to Gibraltar, and from Iceland to the Urals. It portrays 36 nations and parts of 9 more—nations that gave the United States the bulk of its population, its religions, its laws and ethics, and its traditions of art, music, and literature.

Twenty-five years ago this month Europe faced the most urgent crisis in its history. Along the south coast of England an Allied invasion force of a million men stood poised. The greatest fleet ever assembled crowded the harbors of the English Channel; above it the sky was alive with fighter planes. And across the narrow water, soldiers of Hitler's Thousand-Year Reich stiffened for the blow they knew was coming.

On the map the invasion area forms a crescent less than an inch long at the eastern base of the Cherbourg peninsula. At 6:30 a.m. on June 6, 1944, Allied troops whose "ardour and spirit" were "splendid to witness," as Winston Churchill put it, struggled ashore in the face of murderous Nazi fire. By nightfall a precarious beachhead had been secured along 60 miles of coast. So fierce was the resistance that Caen, only nine miles inland, was not taken until July 9; Saint Lô, 19 miles from the coast, held out until July 18. In one assault area the fighting was so desperate, the heroism so memorable, that its military code title has become a permanent name: It appears on the map as Omaha Beach.

The results of the next 11 months of fighting still mark the map. As Allied forces breached the Rhine, Russian armies rumbled westward across the Oder. A line was drawn separating Germany into Russian and Allied zones of occupation. It is there today: a jagged green-and-pink scar, from Lübeck in the north to Czechoslovakia on the south.

In the wake of World War II came the realization that new solutions had to be found to avoid the mistakes of the past. First, the United States in 1947 established the Marshall Plan to help Europe get back on its feet. Two years later, 12 countries, including the United States and Canada, formed NATO—the North Atlantic Treaty Organization—to "restore and maintain the security of the North Atlantic area." Then, in 1957, the European Economic Community (Common Market) was born as France, Italy, West Germany, the Netherlands, Belgium, and Luxembourg teamed up to work toward a customs union and the free flow of goods—and people—across the borders of its member states.

Superhighways Pierce the Iron Curtain

In keeping with this friendly trend, superhighways—appearing on the map as double red lines with yellow fill—serve today not only as arteries of trade, but also as avenues to adventure. Increasing numbers of visitors see Europe by car, and the Iron Curtain lifts in many places to let them in. Find Athens on your map. Then follow the double red line into Yugoslavia. The road it represents speeds tourists from the Greek capital through Belgrade and Zagreb to Ljubljana, almost at the Austrian border.

Elsewhere on the continent new superhighways stitch nations together as never before—and dramatically reduce driving time between capital cities. Motorists can now go all the way from Vienna in eastern Austria through Germany to Amsterdam in the Netherlands, for instance—a distance of 800 miles—in 15 hours of travel.

And happily, many of the frontiers that crisscross the map have become as painless for visitors as the highways. Common Market members have relaxed their border formalities, and tourists can whisk from one to another almost as easily as if western Europe were a single nation.

Additional copies of the **Europe** wall map may be ordered by mail from Dept. 61, National Geographic Society, Washington, D.C. 20036, for $1.15 each on paper, $2.30 on plastic, postpaid. A convenient booklet index to the map's 6,350 place names is available for 50 cents, plus 10 cents postage.

How wars have altered the face of Europe: A tumultuous half century has brought sweeping changes, as illustrated here by drawings based on 4 of the 16 supplement wall maps of the Continent issued by the National Geographic Society in the past 55 years. The first was distributed in August 1914, only four weeks after the assassination of Archduke Francis Ferdinand of Austria (left) touched off World War I.

Following the Armistice in November 1918, leaders of the victorious nations met at Versailles, outside Paris (left). Britain's Lloyd George, Orlando of Italy, Clemenceau of France, and U. S. President Woodrow Wilson signed the first of four treaties that created the Europe reflected on the 1929 map. Out of the Austro-Hungarian Empire emerged the nations of Austria, Hungary, Czechoslovakia, and parts of Poland and Yugoslavia.

Even as war-weary Europe hoped for peace, the seeds of a new and more terrible violence were being planted by an obscure Austrian ex-corporal. On September 1, 1939, Adolf Hitler's armies invaded Poland, triggering history's most destructive conflict. The Society's 1939 map showed the results of Nazi aggression. Austria had vanished and Czechoslovakia had shrunk to tiny Slovakia.

In February 1945, three months before the war ended in Europe, British Prime Minister Winston Churchill, U. S. President Franklin D. Roosevelt, and Soviet Premier Joseph Stalin (left) met at Yalta to shape the map of postwar Europe. In the 1949 map Germany and Austria lay divided, while Poland occupied a slice of Germany's far east. Czechoslovakia reappeared, but Latvia, Lithuania, East Prussia, and Danzig had vanished behind the Iron Curtain. In 1948 a Soviet blockade isolated West Berlin, forcing the U. S. to airlift supplies (left).

On today's map, a supplement to this issue, a network of superhighways hints at Europe's unprecedented prosperity, though signs of strain still show in a divided Germany and in West Berlin, an island of freedom in a Communist sea.

Deerfield Keeps a Truce With Time

By BART McDOWELL
National Geographic Senior Staff

Photographs by ROBERT W. MADDEN

THE SEASONS move at their own special rhythm in the town of Deerfield, Massachusetts. February creeps at the pace of sugar-maple sap dripping into pails. June dances like boys on a distant baseball diamond. October rolls past, as fat and orange as pumpkins ripening on the vine.

To me, the town has always resembled a sort of living sundial that measures off the seasons, the years, and the centuries. Just now the clean sunshine of western Massachusetts spills through young elm leaves. The trees, planted by a Federal-era parson, shade a liberty pole where Whigs raised a patriot flag in 1774. Across the street a red sandstone pillar honors Civil War troops, while its shadow points out the place where Indians massacred pioneers in 1704.

History buffs and schoolboys still read about the Deerfield Massacre, the lurid incident that brought fame to this community. Some visitors come here just to see the massacre site. Others are brought by Deerfield Academy, the town's distinguished preparatory school. And lately have come new crowds: summer campers and winter ski parties bound for the Vermont hills, antique collectors roaming the Connecticut River Valley, autumn-color connoisseurs driving the Mohawk Trail to upstate New York (inset map, page 789).

The old village of Deerfield lures them all—in growing numbers each year—without a dime's worth of advertising, or even a chamber of commerce. And what do the visitors find? They turn into a mile-long lane of elms and maples, called simply "The Street." For three centuries people have lived along it without needing a longer name. Some 500 folk live on or near it now, together with a seasonal, part-time population: the 521 Deerfield Academy boys, and

Long shadows fall, but night has yet to come to Deerfield, a Massachusetts village of exquisitely preserved historic homes and an academy dedicated to the pursuit of excellence. Here within sight of their dormitory, 200-year-old John Williams House, students play off the high edge of energy.

the 350 younger students at Englebrook and Bement Schools.

Two working farms still touch The Street, so that men plant corn and pumpkins, and milk their dairy cows next door to historic homes (pages 802-3). And within a country boy's yelling range across the meadows to the northwest stand working barns. Beyond flows the Deerfield River, and farther still bulges a gentle Berkshire horizon.

Buggy and Model T Recall the Old Days

Most visitors say the antique houses bring them here. No doubt. But so does the old-fashioned beauty of this school town. Or, as I heard one gentle lady put it, "Deerfield looks like a lovely place to be homesick for." She had sensed here the pastoral, neighborly mood of a vanishing America, a quaintness that does not come from trying.

In winter, for example, I've sometimes heard the bark of sled dogs and caught a snowy glimpse of the town veterinarian, Dr. Charles Belford, as he works out his team of wiry, well-trained racers.

In autumn I've hailed Frank Dabowski, chugging past in a 1918 Model T or another of his antique cars with a load of apples for the Deerfield Academy football team.

But on warmer mornings a visitor may hear the clop of hoof and the creak of harness and see a horse and buggy driven smartly by the town patriarch. This will be Frank L. Boyden, recently retired headmaster of the Academy, now in his ninetieth year.

Soon, when the sun stands at the high noon of a June commencement, Deerfield boys will gather with teachers, parents, and neighbors to end a year and begin a season.

The campus setting is serene: The red-brick, Georgian-style buildings stand like formal but friendly companions to weathered saltbox houses (following pages). Not even the new Frank L. Boyden Library was permitted to eclipse Mr. Boyden's favorite mountain view. ("Anyone can have a quadrangle," he said, "but this is a country school.")

However badly other generations may gap, Deerfield folk span the years nimbly; a few spry townsmen at the coming commencement program will recall departed friends who personally knew local veterans of America's Revolutionary War.

History here has always served as the grist for gossip. It began—both gossip and history—precisely 300 springs ago when one Samuel Hinsdell pushed his plowshare into a loamy flood field. Therewith, claimed Hinsdell, he had "made emprouem' by ploughing Lande there," so he asked for a grant "that he might settle himselfe. . ."

Settle Hinsdell did. And from his first furrow—and from other furrows turned by later plows along this Connecticut Valley—sprang crops that fed the tough frontiersmen. Into the soil they put wheat and corn—and the bodies of kinsmen slain by Indians.

Survivors continued to till and tame the land. They bestowed poetic place names, like Wisdom and Old World, and other names as real as earth: Pigville, Turnip Yard. They fattened their oxen on peas and oats; they shaded young tobacco plants, and they dug up potatoes and onions.

Deerfield's greatest harvest, though, has forever been human history. Perhaps no comparable American settlement can boast such a fully documented past nor such a long, broad interest in historical preservation.

"You mean it's like Williamsburg?" my son Kelliston asked me before he enrolled in Deerfield Academy. I straddled the

PHOTOGRAPHED BY ALBERT W. RANKIN
AQUATINT BY ROBERT SAILY © N.G.S.

Terror by tomahawk: As leaping flames light the dawn, howling Indians batter at the entrance to Ensign Sheldon's house on February 29, 1704—fateful day of the Deerfield Massacre (pages 796-7). A defender fires at the attackers from an upstairs window. But an Indian shoots through a hole chopped in the thick door, killing Mrs. Sheldon. Today the nail-studded door, with its slit, is preserved in Memorial Hall, the village museum.

In the savage massacre, more than half the town's 291 inhabitants were slain or captured. An earlier attack forced a temporary abandonment of the settlement. Despite these tragedies, Deerfield hung on and eventually prospered in the rich valley.

answer. Each town remains true to its past. Williamsburg, Virginia's colonial capital, bustled with visitors and pomp; now magnificently restored and rebuilt, Williamsburg looks as it did when new—complete with crowds.*

Early in its history Deerfield became an animated market center for the surrounding country of fat farms raising cattle and other agricultural produce. After the Civil War, the salubrious village began to attract outsiders who regarded it as a pleasant summer resort. But the local Yankees conserved their homes and possessions, so that today Deerfield endures as a true New England town almost unchanged, preserved rather than reconstructed.

Of 52 old buildings in the town, most stand on their original 17th-, 18th-, and 19th-century sites (pictorial map, pages 788-9). Many house indigenous Deerfield furniture; they reveal intimate details of daily life in other centuries—life in the early days of New England.

Visitors to Deerfield catch the mood of a personal call. And if only 20,000 people a year—Williamsburg has had 14,000 on a peak day—come to view the hundred exhibit rooms, local residents seem relieved. Farming and education outrank tourism as their major industries.

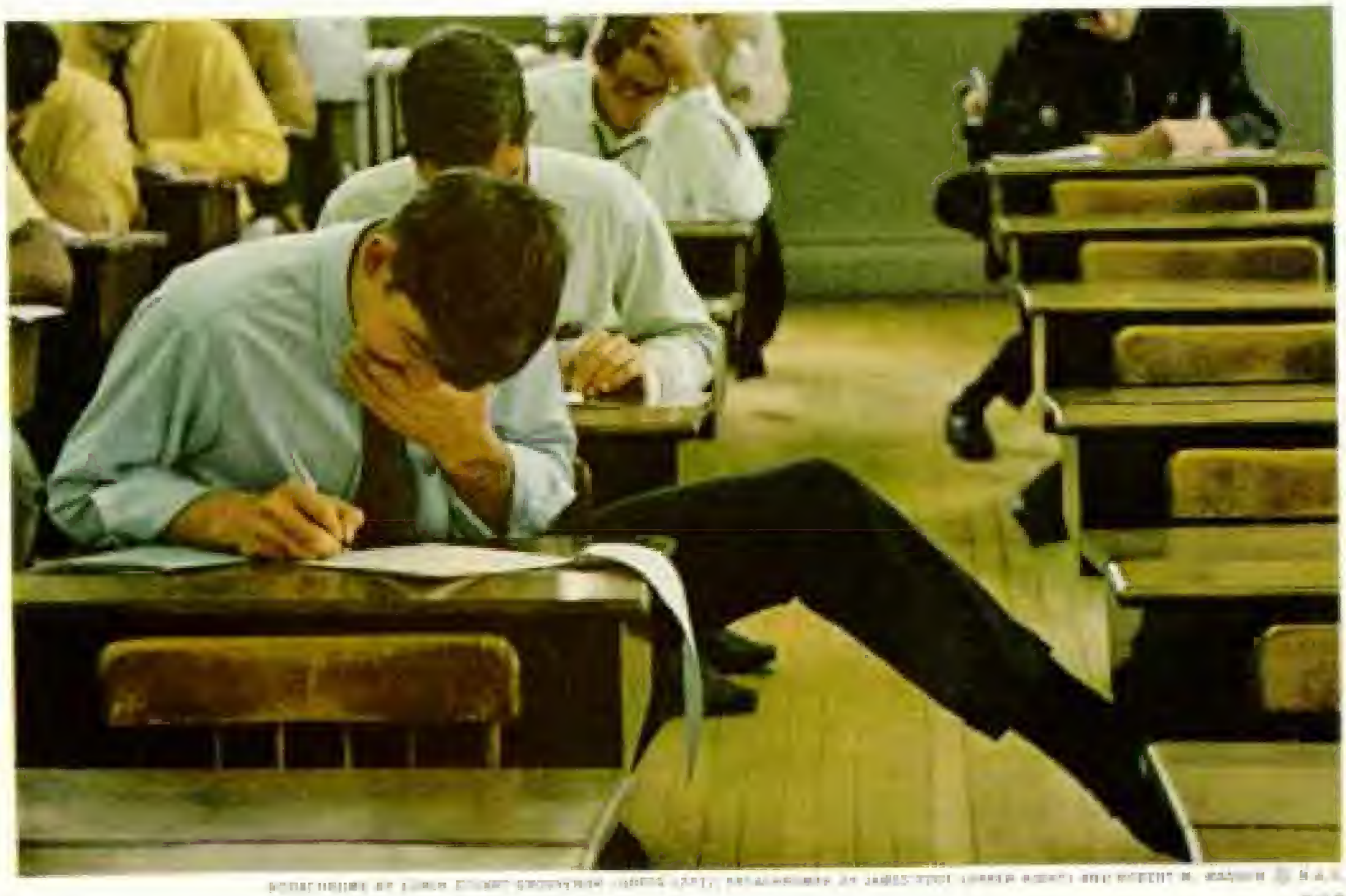
*"Williamsburg, City for All Seasons," was described by Joseph Judge in NATIONAL GEOGRAPHIC, December 1968.

Nurturing mind and spirit, Deerfield Academy lives up to its motto, "Be Worthy of Your Heritage." Founded in 1797, the institution flourished, then waned until Frank L. Boyden (page 787) took over as headmaster in 1902 and brought it to premier rank among college preparatory schools. It offers a 4-year curriculum to boys aged 13 to 18.

Succeeding Mr. Boyden on his recent retirement, Headmaster David M. Pynchon and his family talk with students in front of his home (above). The school's white-columned academic building faces the village Common with its Civil War monument.

Taking the measure of wonder, a boy walks along elm-vaulted Albany Road (upper right).

Lost in thought, Eugene Proulx inks his way through a final exam.



Molecules and maxims mix in the chemistry class of Helen Childs Boyden at Deerfield Academy. Last year she rounded out 61 years on the staff. Even now she tutors. "She is everything a headmaster's wife could possibly be," one biographer wrote, "gentle, understanding, forgiving, irreverent about her husband, . . . the brightest person on the faculty." Her alma mater, Smith College, gave her an honorary degree citing "Helen C. Boyden, who, with some small help from her husband, built a great school."

Traditional get-together: Frank L. Boyden presides over one of his last Evening Meetings as headmaster. He established the custom in the belief that "You must have your boys together as a unit at least once a day, just as you have your family together once a day. The thing I have tried to build," said Mr. Boyden, "is a unity of feeling."

Yale, Harvard, Princeton, and 17 other institutions of higher learning—including his alma mater, Amherst—have awarded Mr. Boyden honorary degrees. Yale cited him for "research work in the hearts and minds of boys."

"These historic houses encourage us to keep the past, present, and future in perspective," reflects David M. Pynchon, the scholarly new headmaster of Deerfield Academy (page 808). The Academy itself owns some of the oldest buildings in town; and for David Pynchon the setting represents, among other things, a valuable educational tool.

"The town certainly can't go commercial," my son observed on his first visit. "The Deerfield Inn is the only place to stay, and it rents only 20 rooms."

Frank Boyden: 66 Years a Headmaster

Kel observed far more. In Memorial Hall we browsed in a museum collection started locally in 1797. Upstairs we saw thousands of old letters, ledgers, books, and other primary sources of history that descendants of Deerfield pioneers had squirreled away.

"They saved everything," Kel marveled. "I wonder why they cared so much about their history."

I couldn't answer, but on later visits I took Kel's query to Deerfield experts, starting with Frank L. Boyden himself. As the headmaster of Deerfield Academy from 1902 until 1968, Mr. Boyden gave the town its 20th-century fame; in the process, he became America's most celebrated headmaster and a historic figure in his own right. At age 89, Mr. Boyden stands just short of 5 foot 4, yet he remains about the youngest, biggest man in town (opposite). He speaks in a high, scratchy voice—and in parables—and he can adroitly dodge a question.

"Explain the tradition of history here?" The twinkling eyes narrowed. "Well, I'm not a Deerfield native. I came in 1902. My wife, on the other hand, has lived here for 250 years." By his own reckoning, Frank Boyden's joke was nearly as old as Mrs. Boyden's family, the Childses, Deerfield farmers since the 18th century. Helen Boyden (above) dismissed her husband's remarks ("He distinctly remembers things that happened before he was born") and local history as well. She simply prefers the present to the past.

"But Mrs. Boyden has always had an interest in local history," Mrs. Henry N. Flynt told me. "In fact, she was the one who first got us interested in preservation here. We bought

Deerfield

"NOT EXCELLED by anything I have seen," wrote John Quincy Adams about Deerfield, a village clustered along The Street. Alluvial soil, deposited by the nearby Deerfield River, drew the first settler in 1669. Today the population of 500 more than doubles each September, when students pour in.

DEERFIELD RIVER

DEERFIELD ACADEMY

SWIMMING HOLE

ATHLETIC FIELDS

N

THE SOUTH MEADOWS

YAZWINSKI FARM

THE NORTH MEADOWS

DEMENT SCHOOL

COMMON

MAIN STREET

WILLIAMS FARM

WELLS STREET

U.S. 5 MASS. 10

OLD DEERFIELD HOUSES, with names of original owner and date of construction. Bold face type shows restored dates; asterisks indicate buildings moved from other areas. Deerfield Academy buildings are listed as (D); Dement School as (S).

1 ATHELU A. SPRAGUE BARN, 1899
2 HELEN GOULD SHEPARD FARM HOUSE, 1952 (D)
3 ALICE HOUSE (HELEN GOULD) 1952 (D)
4 ASA STEBBINS, 1850
5 NATHANIEL ST. JOHN, 1850 (S)
6 BENJAMIN ST. JOHN, 1850 (S)
7 BENJAMIN & STEBBINS, 1850 (S)
8 SUCCOR BROOK (WILLIAMS) 1730
9 BRICK CHURCH, 1824
10 BRICK CHURCH ADDITION (CHAPEL), 1960 (D)
11 CHAPIN DORMITORY
ARTHUR W. HOPEY, 1914 (D)
12 CITY WAS ABANDONED, 1867
13 CLASSROOM BUILDING, 1960 (D)
14 DAVIS DORMITORY, 1961 (D)
15 DAVIS HALL, 1938 (D)
16 DAVIS SHELDON, 1797
17 DAVIS WELLS, 1801 (ENGLISH TYPE)
STEPHEN W. WILLIAMS, 1871
18 DEAN HALL DORMITORY, 1937 (D)
19 DEARBORN HOUSE, 1884
20 DWIGHT HALL, 1948 (D)
21 DR. THOMAS WILLIAMS, 1768
22 EBENEZER HINSDALE HOUSE
(CHILDREN'S HOUSE), 1731
23 EBENEZER WRIGHT, DWELLING FOR
THE JOHN ANDERSON SCHOOL, 1806
24 ELIZABETH, 1948 (D)
25 ELLEN WELLS, 1850
26 ELLIS DORMITORY, 1938 (D)
27 FIRE HOUSE, 1948
28 FORBES CONVERSATION
BUILDING, 1849
29 FRANCIS WILLIAMS, 1751
30 FRANKLIN BUILDING (LIBRARY), 1968 (D)
31 FRENCH'S HOUSE, 1730
32 GEORGE HOUSE, 1760
33 GIRLS' DORMITORY
(ALBERT W. HOPEY, 1914 (D)
34 GYM, 1960 (D)
35 HALL-BOYD-ALLEN HOUSE, 1760
36 HALL-BOYD-COLEMAN HOUSE, 1760
37 HALL-BOYD-HOYT HOUSE, 1760
38 HALL-BOYD-WILLIAMS HOUSE, 1760
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99 HALL-BOYD-WILLIAMS HOUSE, 1760
100 HALL-BOYD-WILLIAMS HOUSE, 1760

our first house on The Street at Helen Boyden's suggestion."

The Flynts have bought and refurbished 22 properties on The Street. In addition, they have repaired and furnished other houses for the Academy and the town. More important than their funds, though, the Flynts employ their own skills as antiquaries, working part of each year in Deerfield as directors and curators of the Heritage Foundation.

Their interest in Deerfield grew gradually. In the 1930's their son attended the Academy. Later, at Mr. Boyden's invitation, Henry Flynt became chairman of the Academy's Board of Trustees. Frequent visits stirred their enthusiasm for Deerfield. Finally, when Helen Boyden told them about an 18th-century house in danger of the wrecker, the Flynts bought it, put it into artful order, and looked for other places on The Street. Soon a personal hobby had turned into a town-size philanthropy; to continue their work, they organized the Heritage Foundation and created an endowment for it (page 795).

Indian Relics and Dinosaur Tracks

Though neither is a Deerfield native, Henry Flynt comes from nearby Monson, Massachusetts, and can claim some boyhood memories. "I used to come to Deerfield—about 1906—looking for Indian artifacts," he recalls.

Modern boys still find arrowheads and

Aura of elegance begins with the ornate entrance to the 18th-century home of Jonathan Ashley, a wealthy parson with unpopular Tory sympathies. His patriot parishioners locked him out of the pulpit, cut off his pay, and even deprived him of firewood. After his death in 1780, villagers salved their conscience by giving the back salary to his heirs.

more. Take 17-year-old Charlie Miller, who grew up on The Street. "We've been digging on Pine Hill just north of here," says Charlie, his blue eyes brightening. "The Indians used to have an old village there, maybe even some granaries. Last year a farmer found three Indian graves with bones."

When he was 8, Charlie picked up a real treasure for his mother's birthday present: a dinosaur track in sandstone from next-door South Hadley. Mimi Miller appreciated the 180-million-year-old memento. The old dinosaur track now graces the family mantelpiece.

Mimi, who does research in Connecticut Valley architectural history, explained that the Miller mantelpiece itself dates from 1752, though strictly speaking it doesn't belong to the Millers. As part of the preservation program, Deerfield Academy has acquired many antique homes along The Street, and faculty families live in them. Mimi's husband Russ is Dean of Faculty at the Academy, and the Millers have lived in the Thomas Dickinson House for 10 years.

"This house has a happy history," Mimi told me. She has searched the titles of every building on The Street; she has also consulted every available manuscript, map, deed, and picture to learn the story of each parcel of property and its owners.

"I developed a real fondness for the Dickinson family," said Mimi. "They were Whigs

Patina of simplicity marks the keeping room of the Wells-Thorn House. Here the family cooked light suppers in the fireplace and ate at the trestle table, left; father and mother slept in a corner bed. New Englanders traditionally hate to throw things away. Deerfield owes a debt to citizens who filled attics with furniture, papers, and mementos of their forebears.

—patriots—and their letters were wonderful. Especially those by one of the girls, Hepzibah. She was something of a tomboy—never got the vapors or anything silly like that. One of her letters told how she and her beau were picking apples one afternoon and then both rode a horse bareback—and fell off and laughed about it. Hepzibah was so likable I named our dog after her."

"Hepzibah's letters were great," Charlie put in. "Like reading *Silas Marner*. She really tells you what that rustic life was like."

I asked Charlie how he explained Deerfield's long-time interest in its own history.

"I have a theory," he said earnestly. "It's because the settlement was wiped out twice. People really coveted their land—they knew how hard it was to hold. They *wanted* to remember."

I accept the Charles Miller Theory. Twice-vanquished, Deerfield took its place in American folklore alongside the Alamo.

People still want to remember, I noted one September day when I drove Kel and his footlocker to school. We arrived on the 18th—the anniversary of the Bloody Brook Massacre—and found a large flutter of flags waving near a monument. They waved where wild grapes ripened in 1675.

Early that historic morning a train of oxcarts creaked and splashed across the muddy stream here, laden with sacks of wheat, feather mattresses, and other supplies needed by the frontier settlers. A small contingent of soldiers crossed ahead of the teamsters.

"Many of them having been so foolish," the Reverend Cotton Mather, most celebrated of American Puritans, reported in one of his 450 books, "as to put their arms . . . aside to gather grapes, which proved dear and deadly grapes to *them*."

A moment later came a war whoop, then a covey of flying arrows and a horde of hostile Indians—some reports say 500, some 1,200: Nipmucks, Wampanoags, and Pocumtucks. Only one teamster escaped injury.

"This was a black and fatal day," wrote Mather, ". . . eight persons made widows, and six and twenty children made orphans, all in one little Plantation."

Altogether, 64 men—including the pioneer Samuel Hinsdell—were killed.

For several years, no white settlers dared live in "that desolate place." Then, "Incouraged & Imboldened," families returned.

"Not much from that period has survived," Mimi Miller explained as we strolled down The Street toward the Frary House. Part of

First stirring of spring lures a young naturalist from Bement School to The North Meadows in search of tadpoles. Children of ages 5 through 14 attend coeducational Bement, a boarding and day school that occupies several houses along The Street.

Thrills vying with second thoughts. Christopher Hall swings above the ice-cold Deerfield River. In the schoolboys' rite of spring, he and his friends shake off the long New England winter with a numbing dip in the traditional swimming hole.

it dates from the 1690's, and it is regarded as Deerfield's oldest building. "But I can tell you one story from the 17th century," Mimi added. "It's about our Frary House ghost."

Documents show that one Sarah Smith, of Deerfield, was hanged on August 25, 1698, for a crime committed in the Frary House. According to court records, she bore "by the providence of God one female bastard child" and "being led by the instigation of the devil . . . and with intent to conceal her Lewdness the said child [she] did strangle and smother."

"Years ago I talked with an old lady who once spent a night as a guest in this house," Mimi said as we reached the door, "and she was awakened by the sound of a baby crying." Needless to say, there was no baby in the house at the time.

Gravestone Hints at a Tragic Tale

Another tale of ghosts sent me to the John Williams House, an 18th-century parsonage now used as an Academy dormitory (pages 780-811). I was looking for the late Eunice Williams. Her gravestone stands only a few yards away, its letters softened by the centuries, but clear. "Here lyeth the Body of M^rs Eunice Williams the Virtuous & desirable Consort of the Rev^rd M^r John Williams . . . She was Born Aug^t 2. 1664. and fell by the rage of y^e Barbarous Enemy." She was a victim of the Deerfield Massacre of 1704.

As I turned from the gravestone, Mike Bois, the hospitable housemaster of Williams House dormitory, greeted me, "How about a tour of the place?" We met boys along the way, moving up noisy stairs, down zigzag halls, past afterthought bedrooms and latter-day plumbing. We ducked into a misnamed secret passage behind one bed. "I use it myself when coming in late," said Mike. "The real secret here is when the house was built—some say 1707, others think as late as 1754."

On the top floor we found an Academy senior with a characteristic Deerfield regard for history. Nat Sims was awash with printer's proofs and bales of notes.

"It's an art catalogue for our American Studies Group," Nat explained. "We're having a one-man show of Augustus V. Tack."

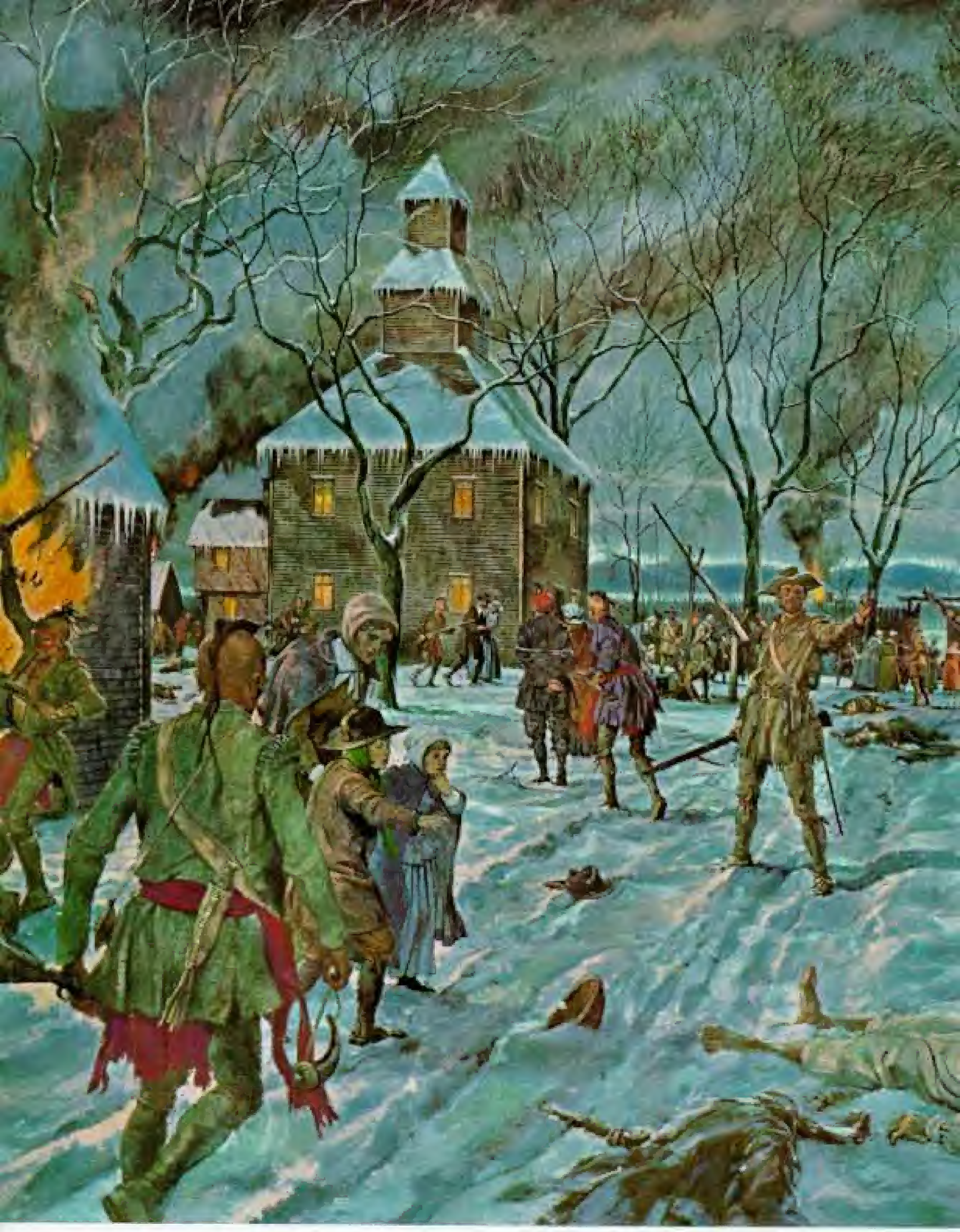
Tack, who came to live and paint in Deerfield at the turn of this century, won national distinction for portraits of famous Americans. Yet Nat and his fellow scholars were just then producing the first proper Tack biography.

The relative silence of study hall was settling over the old house, and Mike showed me to my second-floor room. I unpacked some

Guardians of the past. Mr. and Mrs. Henry N. Flynt have given their time and resources to the preservation of Deerfield's old houses for nearly three decades. Mrs. Flynt shows her husband 17th-century crewel work—wool embroidery—in their restored home, the Allen House (page 804). The Heritage Foundation, created by the Flynts, has restored 28 homes; 12 are open to the public.

Autumn leaves stipple The Street as Bement soccer players head homeward past the venerable Ashley House. It is the season when time hovers between the now and long ago. David Morton, a local poet, wrote:

The old names are here,
And the old forms
Not alone of doorways, of houses.
The light falls the way the light fell,
And it is not clear
In the elm shadows, if it be ourselves here,
Or others who were before us.



"With painted faces, and hideous acclamations," Indians and French Canadians ravage Deerfield in the 1704 massacre. As a sentinel dozed, the 340 attackers crept up drifted snowbanks to drop inside the stockade, background. "The enemy came in like a flood upon us," Parson John Williams recalled of the carnage. Here a shouting Frenchman directs frenzied Indians as they herd their captives, the parson and many women and children among them. A savage drags plunder from the Frary House, right. Another guzzles looted rum.

PAINTING BY KENNETH RILEY © NATIONAL GEOGRAPHIC SOCIETY

while down the street a group pushes a flaming cart toward a doomed home.

The front door of the Sheldon House, behind the steepled meetinghouse, barred the savages. But they broke in the rear and, tradition says, dashed out the brains of the Sheldons' two-year-old daughter. Smoke sent a grim message to nearby settlements, when rescuers arrived, much of the village lay in ruins. Its survivors, some of whom had fled barefoot over frozen fields, counted 49 dead and 109 others carried off on a forced march to Canada

Death keeps pace with Parson Williams and his fellow prisoners on the 300-mile trek into Canada. Dropping from exhaustion, a straggler faces the tomahawk. Thus the parson's wife died, one of 21 who perished on the month-long march.

Only 61 of the captives eventually returned to Deerfield, among them Williams and four of his children. A fifth, only 7 when abducted, grew up to fall in love with her Indian captor and marry him. Deerfield tradition relates that when she visited the Connecticut Valley as a middle-aged squaw, she disdained a roof over her head and camped in her tent on a village green.

books of my own and started rereading an account of one of the blackest days in the history of colonial New England. The Deerfield Massacre was a story of murder, brutality, and savage destruction.

In the dark before dawn on February 29, in the leap year of 1704, the village slept. There were 291 people in all, among them 20 soldiers assigned to protect the outpost. The settlers had been fearful of Indian attack all through the summer and fall (Indians had, in fact, captured two men near the village in October); they had built a new stockade to protect the center of the town.

But as the winter wore on, their fears had subsided. More than 200 miles of deep snow separated them from the Canadian frontier, from their French and Indian enemies.

The snow was their undoing. The invaders, 340 strong, Indians and French soldiers, came down the Connecticut Valley on snowshoes and dogsleds. They climbed the deep drifts that lay against the stockade walls and dropped noiselessly inside. They were into the houses while the people still slept.

Town Left Burning and Desolate

Before the raid was over, 49 colonists lay dead. About half their houses and barns were burned, and 109 men, women, and children were marched away through the snow as prisoners. Twenty-one perished on the way to Canada. Only 61 ever returned.

A vivid account has come down to us in one of colonial America's first best sellers, *The Redeemed Captive*, by the Reverend John Williams of Deerfield, husband of the murdered Eunice. After taking the reader through a Puritan thicket of Biblical texts, Mr. Williams told his hard, fascinating story from the winter of 1704:

"On the twenty-ninth of February . . . not long before the break of day, the enemy came in like a flood upon us, our watch being unfaithful . . ." (painting, preceding pages).

"The enemy immedintely brake into the room, I judge to the number of twenty, with painted faces, and hideous acclamations. . . . my pistol missing fire, I was seized by three Indians, who disarmed me, and bound me naked. . . . I cannot relate the distressing care I had for my dear wife, who had lain-in but a few weeks before, and for my poor children. . . . About sun an hour high, we were all carried out of the house, for a march, and saw many of the houses of my neighbours in flames. . . . we saw ourselves carried away . . . into a strange land. . . . The journey being . . .

Saluting the massacred of 1704, Brownies display their troop colors over the mass grave on Memorial Day. Two feet hustle to keep up with four hoofs (below) as boys ride a sulky in the town's parade. Easily quiet Deerfield's most colorful event, the parade along Albany Road attracts most of the townsfolk, as well as all the students of the Academy, Bement School, and Eaglebrook School just out of town

For fired-up spirits, an icy roll. Though such free-for-alls flourish wherever boys abound, most exercise at Deerfield Academy comes in the form of organized games.

Every student must choose a sport and almost all varieties are offered: swimming, skiing, football, baseball, track, tennis, cross-country, squash, basketball, soccer, hockey, and lacrosse (pages 808-9). Teams fan out across New England, each having a full schedule of games with other schools.

three hundred miles . . . and we never inured to such hardships and fatigue. . . ."

The second day Mr. Williams was permitted to speak with his wife Eunice, but not for long: "My wife told me her strength of body began to fail, and . . . she hoped God would preserve my life . . . I was put upon marching . . . and so made to take my last farewell of my dear wife. . . . I was made to wade over a small river . . . the stream very swift: and after that, to travel up a small mountain. . . . I . . . entreated my master to let me go down, and help up my wife; but he refuse‹d . . . I asked each of the prisoners . . . after her, and heard that in passing through the . . . river, she fell down . . . in the water, after which she traveled not far; for at the foot of this mountain, the cruel and bloodthirsty savage, who took her, slew her with his hatchet, at one stroke. . . ."

After two and a half years Parson Williams and four of his children were finally freed. Eventually he returned to the ashes of Deerfield, where a new house was built for him.

As I finished reading that sad episode, large wet snowflakes were settling against my windowpane, and the John Williams House stood dark and quiet. I dropped off to sleep wondering whether the boys would try to counterfeit the ghost of poor Eunice Williams for my benefit.

I woke up to the heedless sounds of boys heading for breakfast. The late Eunice Williams and I had both slept soundly, and March had come in like a slushy lamb.

About 10 o'clock the fire siren blew, an

One-man bucket brigade, Sandy Williams slogs past the Dwight-Barnard House, gathering sap from huge maples to take to his father's sugarhouse. In 1954 the dwelling, one of four newcomers to The Street, was moved from Springfield, 30 miles to the south.

With spring's warm days and cold nights, the maple sap begins to run. The Street's giants each produce an average of 40 gallons, enough for one gallon of syrup. Six-year-old John Lunt (above) samples a New England treat—syrup on snow.

Portrait of a happy man. Frank Yazwinski came to the United States from Poland in 1911. With savings from his meager earnings he bought farm property in Deerfield, and today his dairy herd keeps the family comfortably. Mr. Yazwinski's four sons and four grandsons attended the Academy.

especially eerie sound in a town built of aged wood. Volunteer firemen converged on the station: teachers speeding downhill in cars from Eaglebrook School, dairy-farmer Chester Yazwinski running from across The Street, redheaded Fire Chief Milt Williams rolling up in a pickup truck.

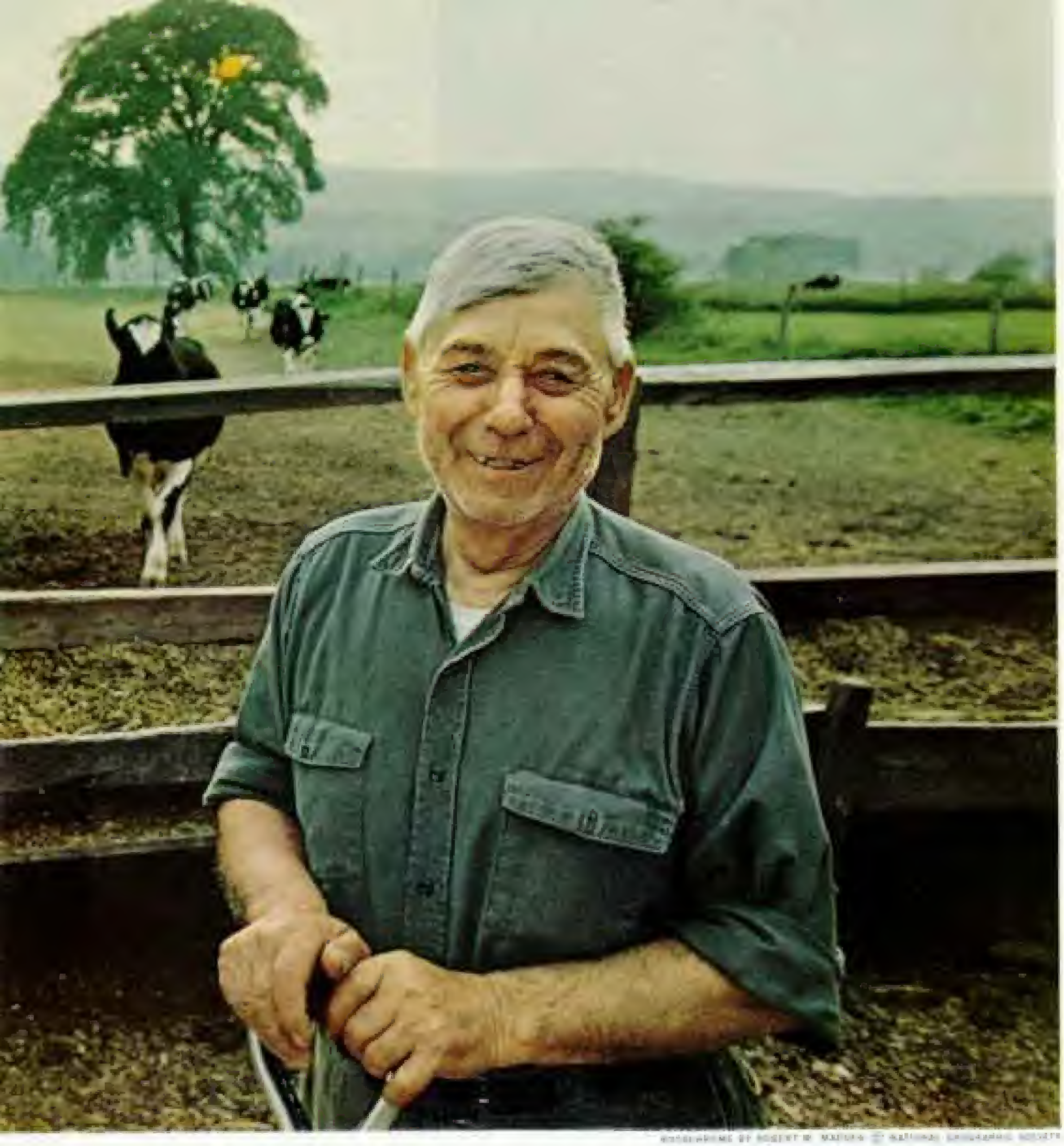
Noisy Siren Strikes a False Note

"It's the alarm box behind the town hall!" someone shouted. I joined the rest of Deerfield beside the fire truck and eight puzzled volunteers. The siren continued to wail without stopping. Next door every window at the Deerfield Grammar School framed curious faces with gap-toothed grins.

"False alarm—short circuit," Chet Yazwinski explained apologetically. "Most likely caused by wet snow."

The date (by rather ghostly coincidence, I thought) was March 1, which in a non-leap year is observed as the anniversary of the burning of Deerfield. The siren wailed for 25 minutes, until one of Milt's volunteers at last switched off the power.

As silence settled over Deerfield again and pupils returned to their books, I made a brief stop next door. Here, in an 18th-century brick



a privilege accorded all qualified village boys. The Vaxwinskis' farm is one of two that still front on The Street. In the 18th century Deerfield thrived as a cattle center. During the Revolutionary War, then-patriot Benedict Arnold came here to purchase 15,000 pounds of beef for Continental troops.

building that once housed Deerfield Academy, the historical society maintains its museum and library.

"Back again?" laughed Miss Mary Wells, the curator. I had already made several visits, especially to study the most sensational local relic, the Indian House Door, as people call it. As the entrance to the sturdy home of Ensign John Sheldon, this massive wooden door barred Indian raiders for a part of that night in 1704 (painting, page 782).

Visitors can see the hole finally hacked in it by Indian hatchets (page 783). Through that hole one man thrust his gun and fired. The random shot killed Ensign Sheldon's wife. The Indians took the house and made most of the surviving Sheldons prisoners.

"Probably the Ensign was not at home," wrote his kinsman, historian George Sheldon, almost 200 years later. "The tradition says also that his two-year-old daughter Mercy was taken to the front door and her brains dashed out on the doorstone. . . ."

Before the raiders left, they set fire to Deerfield, but the Sheldon home survived and came to be called the Old Indian House. At the time of the Revolutionary War the building was owned by a Tory tavernkeeper, and

Almost forgotten craft lives on with Rachel Hawks, whose family has dwelt in Deerfield for eight generations. Using a fisherman's coarse stitch, she nets a tester, or canopy, for a four-poster bed in her 18th-century home.

"World's most beautiful street," artist Stephen Maniatty calls the main thoroughfare. Here he finishes a view of the Allen House. To preserve Deerfield's atmosphere, townsfolk buried telephone and power lines, added lanternlike street lamps, removed streetcars, and rerouted highway traffic.

resounded to the clank of tankards toasting George III. By the late 1840's its owner was ready to tear the tatty place down. Then a curious thing happened.

"Will the public . . . suffer the last memorial of Indian warfare in our part of the country, to be lost and forgotten?" asked the Greenfield *Gazette and Courier*.

Soon the Connecticut Valley echoed with oratory; committees formed, resolutions passed. One historian calls this "the first clear-cut example of an organized preservation movement in New England."

The movement failed. Perhaps $150 could have saved this 17th-century relic; but as one old-timer explained, "Scarcely no money was subscribed."

Only the scarred door survived—"and a certain sense of shock that the Old Indian House could really be razed," adds Peter Spang, the young associate curator of the Heritage Foundation. "Deerfield people had long had a deep interest in their history—but now they saw a need for preservation. And that brings us to George Sheldon."

Appropriately, Peter Spang himself lives in the same house where George Sheldon wrote a two-volume history of Deerfield in the last century. Peter showed me a photograph of Sheldon at work: an Old Testament

Kettledrums boom in the 19th-century White Church, a meeting-house turned community center used for practice sessions by the Pioneer Valley Symphony Orchestra. Concerts are given in nearby Greenfield. Tympanist Maria Gregoire, who studied in her native Vienna, teaches piano at Bement School.

face with an unbelievably long beard of purest white. But just as arresting was his headgear. "In summer he wore that large food screen like a hat," said Peter. "It let the air in and kept bugs off his bald head."

Sheldon not only wrote history; he also collected and preserved it. "When people were away from home," Peter told me, "Sheldon would go through their attics, read their old letters, and even help himself to old things."

"Oh, yes," says Mrs. Richard Arms, who as a girl knew George Sheldon. "When people hear strange noises upstairs, they still blame George Sheldon's ghost. 'Must be George collecting,' they say."

Sheldon was already a distinguished antiquary of 78 when he took Miss Jennie Maria Arms, aged 45, as his bride. "The happiest marriage I've ever seen," Frank Boyden called it. "Mr. Sheldon was a very large patriarchal person; and Jennie Sheldon, as she grew older, came to look like Helen Hayes playing Queen Victoria. Both of them kept writing history papers. George Sheldon was 98 when he completed his last book. 'I've finished my book,' he said. 'Jennie, I'm going to die today.'

"Mrs. Sheldon told me about it later. 'And, Frank,' she said, 'he did. George always kept his word.' "

Next door to Peter Spang's—and George Sheldon's—darkly weathered place, stands Ashley House, among the grandest of Deerfield's 18th-century houses (pages 790 and 794-5). Today the carefully refurnished house still evokes the personality of the Reverend Jonathan Ashley, a stiff-necked, outspoken Yale man who filled the Deerfield pulpit with Puritan piety for nearly half a century.

Proper dinners were cooked in the large fireplace where beef turned on a spit driven by clockwork. Parson Ashley's own drop-leaf table stands nearby; it is set with wooden plates and horn spoons, typical of everyday use in Deerfield then.

In the parson's study, over a desk, hangs a small mezzotint: an 18th-century likeness of King George III. As a rigid Royalist, Mr. Ashley used his pulpit to denounce his rebellious neighbors' sins.

Young Tories were encouraged to saw down the Deerfield liberty pole. Patriots, in turn, sawed off Mr. Ashley's salary. Some Tories left Deerfield during the Revolution, but not Mr. Ashley. He stayed on in his house—ostracized by the town—until his death in 1780. Then his neighbors repented—not of their political convictions but of their actions against Mr. Ashley. One even swore an official public oath, "I am heartily sorry." Even before the war ended, the town voted to pay Mr. Ashley's heirs 787 pounds in back salary.

Patriarchal Elm Spans Three Centuries

A later (and more popular) Deerfield preacher, the Reverend Samuel Willard, came in 1807 and planted elms that still shade The Street. Pastor Willard's brick church, fifth of Deerfield's meetinghouses, fills with schoolboys and townsfolk each Sunday. White paint and big windows of rippling old glass give the interior a brightness that suggests Christian purity. A mahogany pulpit nearly 15 feet high requires each worshiper to tilt

his head heavenward. The pews are paneled white stalls. When one sits in them, they become a penance. With his spine splinted upright, a churchgoer can repent sins he hasn't even committed. After all, the first pastor here was a Puritanical cousin of Cotton Mather.

Yet outdoors we can see the great elm trees —some 200 of them—that Samuel Willard left on The Street as a living benediction. And opposite the church stands the Manse, or Willard House.

For 30 years tree scientists have guarded the Willard trees against Dutch elm disease and other hazards. The elms along The Street thus provide something of a pilot project in disease control.

"We're losing one big tree this year," Dr. Malcolm McKenzie told me. "A giant—100 feet tall and 20 feet in circumference. It must be 300 years old."

Dr. McKenzie heads the Shade Tree Laboratories 12 miles away at the University of Massachusetts in Amherst. He watches The Street's huge maples as well as the elms, but the dying giant brings no sense of failure.

"Elms take about 100 years to reach their prime—then spend another century at their peak," said Dr. McKenzie. "They spend their last 100 years declining. This tree just got old and died."

Despite Dutch elm disease, Deerfield's annual loss over a 30-year period amounts to only half of one percent. At least twice a year the Deerfield tree warden sprays the elms, and he continuously polices the area against dead wood where disease-spreading insects breed. And the Shade Tree Lab workers collect seeds—to plant more elms.

"The trees prevail," says Dr. McKenzie, "spiritually and literally, above all."

Noted Guest Took a Chilly Bath

Parson Willard would be justly proud of those elms he planted a century and a half ago. He would also, I think, approve of his successors in the Manse—the Boydens.

"I feel more at home here in this house than I have in any other," Mrs. Boyden told me. Just a few weeks earlier the Boydens had moved out of the official headmaster's residence when they retired from Deerfield Academy. Now, with real enthusiasm Mrs. Boyden showed me through the Willard House, from an older wing that dates in part from about 1694 to stately front rooms built in 1772. "See the paneling? No knots. None in the whole house," said Mrs. Boyden.

Seated in the parlor, we riffled through a history of the house. Ethan Allen's father was born here. Ralph Waldo Emerson came as a guest. So did Horace Greeley, who—the record admiringly indicates—took a cold bath one midwinter morning in the northwest bedchamber.

Ghost's Identity Poses a Problem

A golf cart pulled onto the lawn, and its driver got out and came in. It was the Little Man, as Mr. Boyden is warmly called.

"Who was that old man up The Street just now?" he asked his wife.

"One of your former pupils," she said dryly.

"I *know* that, but which one?" Mr. Boyden seemed impatient with himself; even at age 89, his memory for names is remarkable.

Mrs. Boyden turned to remind me, "You wanted to ask him about the ghost he saw."

"My ghost?" said Mr. Boyden. "You're interested? You know Mrs. Boyden is a Unitarian and has trouble swallowing these things. But the Manse is supposed to be haunted. Well, one night a few weeks ago in my bedroom upstairs I saw a woman and a man come in the door. She was a striking person —very beautiful."

"I'm suspicious," said Mrs. Boyden, "because you were asleep."

"I was not asleep," said Mr. Boyden. "The man remained quiet, and the woman did all the talking." He glanced benignly at Mrs. Boyden. "And she made some remarks of welcome and said, 'I'm so glad you're in this house.' A strange experience."

Mrs. Boyden nodded mischievously.

We thumbed through our histories to find whose ghost Mr. Boyden had seen; finally we nominated "the lovely Susan Barker," as Parson Willard described his bride. It would

Only the "wisky" crock needs filling in Major Barnard's taproom in the Frary House to ready it once more for the Boston coach, thirsty farmers, or village citizens. Guide Hilda Conkling leans on the bar door where the proprietor served his customers. Along with many other Deerfield houses, this one boasts a ghost—the child of Sarah Smith, the baby, villagers say, can be heard crying in the night. Court records say that Sarah was hanged in 1698 for strangling her "female bastard child." RECOLLECTIONS OF HONEST ● WOMEN ☺ ● ● ●

Where red men raided, an Indian game, Academy players vie at intramural lacrosse on a field at the village edge. From his first day as headmaster, Mr. Boyden (below, right) stressed sports. When a shortage of boys prevented making up a team, he played first base or quarterback. At 55 he gave up active participation, but remained head coach of baseball, basketball, and football until he was nearly 80. Characteristically, he instilled a will to win—but win with grace. His successor, David Pynchon (above, left), shares his interest in sports and seeks new means of broadening his students' academic and social horizons. Since becoming headmaster in 1968, he has achieved an extraordinary rapport with the youngsters. Here the two educators toast the football team with coffee. After many years, graduates still remember Mr. Boyden's favorite pep-talk advice: "Finish up strong."

be apt for the Willards, Deerfield leaders of the 19th century, to welcome the Boydens as their successors.

"Frank Boyden is something like the old frontier schoolmaster," says his admiring friend, the poet Archibald MacLeish, who lives in neighboring Conway. "He is less interested in his subject than in his boys."

He and his school have always concentrated on character. In 60 years the headmaster expelled only five boys. The Boyden magic in dealing with youngsters made him and his school famous. The campus has grown as spacious and beautiful as any to be found. Classroom buildings have breathing room with lawn and trees. Dormitories provide almost every boy a room of his own. Playing fields—75 acres of them—offer plenty of space for lads to test sinew and sportsmanship (above).

Deerfield has produced 41 headmasters and eight college presidents. Yet, when his wife is out of earshot, Frank Boyden calls her "the best teacher I've ever known." And Helen Boyden is still at it: tutoring dropouts in the nearby town of Greenfield.

No one outgrows education in these parts. "I'm 80, and I haven't much time," Mrs. Mary Ball told me one afternoon. She goes to school two nights a week, pursuing a new hobby of re-upholstering furniture; she is also a remarkably well-versed local historian.

Peter Spang turned up another point. In the 18th century, when a Massachusetts resident had a life expectancy of 35.5 years, the people of Deerfield averaged 50.9 years.

"It makes you want to bottle the water," a

visitor remarked in the Deerfield Inn. "How do you explain this longevity?"

Frank Boyden had one suggestion. He recalled Rufus Saxton, a Civil War general who came from Deerfield. "He was 103 or 105," Mr. Boyden recalled, "and he would drift off into little naps as he sat in his chair. Well, he was asleep when someone mentioned Deerfield. He started up.

"'Deerfield! Deerfield!' he said. 'Always people of quality!' Then he fell back asleep."

Ways of Pleasantness, Paths of Peace

The tradition of quality endures, and finds renewal, in historic Deerfield and in its celebrated Academy.

"It's a humbling and gratifying thing to follow one of America's most famous educators," says the new headmaster, Dave Pynchon. With great warmth he speaks of Mr. Boyden's "unique human qualities," and of his own plans to "train leaders for the 21st century," and "the way this community creates a sense of tranquility away from the violence of the present time."

His words seemed to echo those I'd heard here on a Sunday night only a few months before. The assembled boys of Deerfield Academy had read a passage from the Book of Proverbs; the ageless words seemed written for this very spot:

"Happy is the man that findeth wisdom . . . Length of days is in her right hand; and in her left hand riches and honour. Her ways are ways of pleasantness, and all her paths are peace."

THE END

Americans Afoot

By DAN DIMANCESCU *Photographs by DICK*

Down the rocky aisle of a glacier-carved amphitheater, the author's party heads for a

in Rumania

DURRANCE II and CHRISTOPHER G. KNIGHT

hikers' lodge in the Transylvanian Alps.

WITH THREE OTHER YOUNG AMERICANS, I journeyed last summer to Rumania, the land of my fathers. As it happened, we were there at the very time Czechoslovakia was invaded by the Russians—and Rumanians were asking themselves whether their country was to be next.

For two and a half months—before, during, and after this crisis—we traveled through the Carpathian Mountains, which span the heart of the country. This story is mostly of our experiences in out-of-the-way places, but also it is the story of a Communist nation struggling to build its own bridges between East and West.

We planned to follow the Carpathians for 1,100 miles, from Moldavia on the Soviet border all the way to the Yugoslav frontier, where the Danube cuts through the mountains (map, below).*

Our group of four included photographer Chris Knight—short, blond, energetic, and full of enthusiasm for spontaneous and lively conversations with farmers, students, and workers. Dick Durrance, also a skilled photographer, was just out of the Army after service in Viet Nam. Dick brought a knack for making friends without using a word of the local language. He also brought several well-guarded jars of his favorite food, peanut butter. The third man was Bill Wilson, our "bard in residence," whose guitar and harmonica were often to generate warm exchanges with people whose language we could not speak. I was the fourth. A graduate student at the Fletcher School of Law and Diplomacy in Medford, Massachusetts, I planned to record our experiences—and learn more about my family's homeland from them.

Land of three parts: The principalities of Moldavia and Walachia united in 1859 to form Rumania. Transylvania was added to the nation after the collapse of the Austro-Hungarian Empire in World War I. Today a 22-year-old Communist regime holds tight control internally, but Rumania nonetheless trades extensively with the West.

Diplomat's Son Arrives—With a Backpack

My father had been a diplomat in the service of the Royal Rumanian Government that preceded the current Communist regime. He had left his country several months before King Michael's forced abdication in 1947, and he has never returned. I was the first of our immediate family to visit Rumania in 20 years—a naturalized American born in England, raised in Morocco, and able to speak but a few words of Rumanian.

Since none of my companions could speak Rumanian either, we asked the National Tourist Office in Bucharest for a guide who could also serve as interpreter. Mugur Baden, a 25-year-old physics researcher and university instructor, proved also to be a witty and diplomatic ally in dealing with cautious bureaucrats, factory directors, and train conductors.

Before leaving Bucharest, we exchanged suits and ties for blue jeans, hiking boots, and backpacks that carried our camping gear and photographic equipment (upper right and page 836). Dick stowed his peanut butter in his pack. Chris added a pocket dictionary and conversation guide to his equipment, and Bill rigged his guitar with a rope sling. Mugur lovingly rolled up the new down-filled sleeping bag that we had ordered for him from Switzerland when we found that none was available in Bucharest. We were off to see the Carpathians, and in the process, much of Rumania.

In area, Rumania is smaller than Oregon, yet it holds nearly ten times as many people—almost 20,000,000. As the country's name reminds us, the national language is of Latin origin, the result of nearly two centuries of Roman colonization. This has helped Rumania build a cultural bridge over its Slavic neighbors to the

*For vivid accounts of two previous trips of goodwill and adventure by the author and his friends, see "Down the Danube by Canoe," by William Slade Backer, in the July 1965 NATIONAL GEOGRAPHIC, and "Kayak Odyssey: From the Inland Sea to Tokyo," by Dan Dimancescu, in the September 1967 issue.

Setting the pace, author Dan Dimancescu, right, strides ahead of harmonica-playing, guitar-toting Bill Wilson, photographer Chris Knight, and Rumanian interpreter Mugur Badea, far left. Mugur greeted the party with surprise. "I expected the Americans to come in Cadillacs; instead they met me with 50-pound packs of camping gear and clothing—and we walked." The Carpathians, backbone of Rumania (below), held special interest for Dan, whose father, a diplomat in the pre-Communist government, assisted a GEOGRAPHIC team traveling there in the 1930's.

Latin-speaking countries of the West. "Good evening" in Rumanian, for example, is "*bună seara*," with obvious roots in Rome and no similarity to the Russian "*dobryi vetcher*."

In a chance conversation with a Rumanian philosophy professor in Bucharest, the country's capital, I was told, "Our Rumania has been a crossroad of cultures, but this has left us without a deep cultural well of our own to tap. Many Rumanian intellectuals turn to France and other countries of the West as sources of sophistication."

To illustrate the linguistic kinship, but also the provincialism he deplored, the same professor told of a peasant who became a sailor and made a voyage to Italy. On his return, his friends pressed him for his reaction.

"Well," he said, "it was beautiful, but they speak Rumanian with a terrible accent!"

Hospitality in a Mountain Cloister

The Carpathians were a cool and silent contrast to the traffic of Bucharest, with its new Fiats, Rumanian-built Dacias, and Russian Moskvitches speeding along boulevards.

Our first stop in the mountains was at Sucevița (pronounced Soo-che-VEET-sa), one of a cluster of northern Moldavian churches known throughout the world for their magnificently frescoed outer walls. Here we felt like intruders into a way of life that is virtually unchanged since the 15th and 16th centuries, when such religious shrines were built by ruling princes to commemorate victories over invading Turks, or by wealthy *boyars*, or landowners, as retreats for themselves and their families. Walls built to keep out brigands still guard these medieval cloisters from the world (page 817).

"Most of the Moldavian churches are sensible and small," an artist in Bucharest had told us. "They were never designed to be monumental, like Gothic cathedrals."

Within the fortified walls of Sucevița, we were met with a warm smile by a sister who introduced herself through our interpreter as the mother superior, Xantipia Antescu.

"You look tired," she said, after Mugur had described our long day's travel. "Please come in and have a meal. There is food left from our dinner."

She led us to an immaculate kitchen, where we were seated around a long table. Two nuns busied themselves at the wood stove, and soon a heavy plate of spinach soup with sour cream was placed before each of us.

The soup was followed by an omelet, a rosé wine made by the nuns and kept in their

Saluting the ladies, a violinist entertains at the Maidens Fair on the slopes of Găina Peak. The July fete originated centuries ago as a marriage mart, where young girls from surrounding areas displayed their faces and their dowries to prospective husbands. Today costumed folk dancers, like the high steppers below, perform for the sheer love of dancing.

cool cellars, raw onions, sheep's-milk cheese, and raw green peppers. Throughout the meal we helped ourselves to a thick, yellow cornmeal mush called *mămăligă*, a national dish eaten in place of bread, which we were to encounter many times in the weeks ahead.

The silence of the two nuns working in the kitchen presented a challenge to Chris. Opening his conversation guide, he tried out a few sentences on them, but got no response.

"They are not supposed to talk to strangers," explained the mother superior.

After dinner we thanked our gracious hostess and trudged in brilliant starlight up a grassy slope behind the convent. There we set up our three two-man tents and camped for the night (next page). The stillness in the narrow wooded valley enveloped the church and convent. The only sounds were the fading clatter of a horse cart and the rasping croak of a toad.

The following afternoon a sudden thunderstorm broke, and several bolts of lightning struck the ground near the church. In the driving rain the church bell ringer, a blind hunchback, groped his way across the courtyard and disappeared into a corner tower. Soon the bells were tolling over the sound of the storm. For 15 minutes the contest continued between nature and man.

When the storm had passed and the sun again pierced the clouds, I asked the mother superior about the bell ringing: "Does it have some religious or symbolic meaning?"

"Oh, no," she answered. "We only do that because the sound of the bells scatters the clouds and prevents hail from falling on our fragile crops."

Churches Reopen as National Treasures

For some years after the Communist regime came to power in Rumania, religious worship was severely curtailed. Many churches were closed, and their priests were accused of subversive activities, jailed, and even tortured.

In the 1960's, however, the government has adopted a much more tolerant attitude toward the churches, in particular toward the Rumanian Orthodox, the national faith. With government funds, many churches have been reactivated and monasteries restored.

The country's leaders are pragmatic men. The new policy is designed to enhance a sense of nationalism among Rumanians by reviving cultural traditions. Then, too, the religious centers are a major tourist attraction, providing needed foreign currency for Rumania.

The Carpathian Mountains have none of the awesome majesty of the Himalayas and little of the mysticism of Japan's Mount Fuji. Rather, their scale is human, as though they

were designed for the needs and pleasures of man. In most places, narrow trails meander from a man's fields or his home to neighboring homes and villages. Often the mountain farmer knows only his small valley and can offer scant information on how to reach nearby communities.

Traditionally, the Carpathians have been a refuge from conquest for Rumania's plains dwellers. Mountain colonies long insulated from the outside world may also have helped preserve Rumania's Latin-based language. Today the high valleys are a last stronghold of independent-minded farmers, who seek to preserve private property in a nation that now preaches the benefits of state ownership.

One farmer told us emphatically, "A few officials tried to exceed the law by collectivizing small farms in the mountains, and some older men gave in. But we younger ones held firm: we refused to let them have our land."

As a result, most mountain farms are still privately owned, though the forests around them are state property. Landholdings are small, usually only an acre or two. There are taxes on the livestock a man owns, limiting most farmers to a few cows, pigs, sheep, and chickens. Farmers speak with pride of the land and animals they possess.

Fellow Hikers Wore High-heeled Shoes

Beneath the jagged twin pinnacles of Rarău Peak, which rises to 5,423 feet, we came upon a large state-managed *cabana*, or mountain hotel, offering us and other hikers comfortable shelter for the night. Many similar well-equipped lodges are scattered throughout the Carpathians, each capable of accommodating dozens of hikers (page 810).

To our surprise, many of these Rumanian mountain-goers wore street shoes and sports jackets, or—in the case of women—flimsy, high-heeled shoes.

What surprised them was the quality of our hiking equipment. "Where do you get frames like that?" they asked, touching the aluminum bars of our U. S.-made packs.

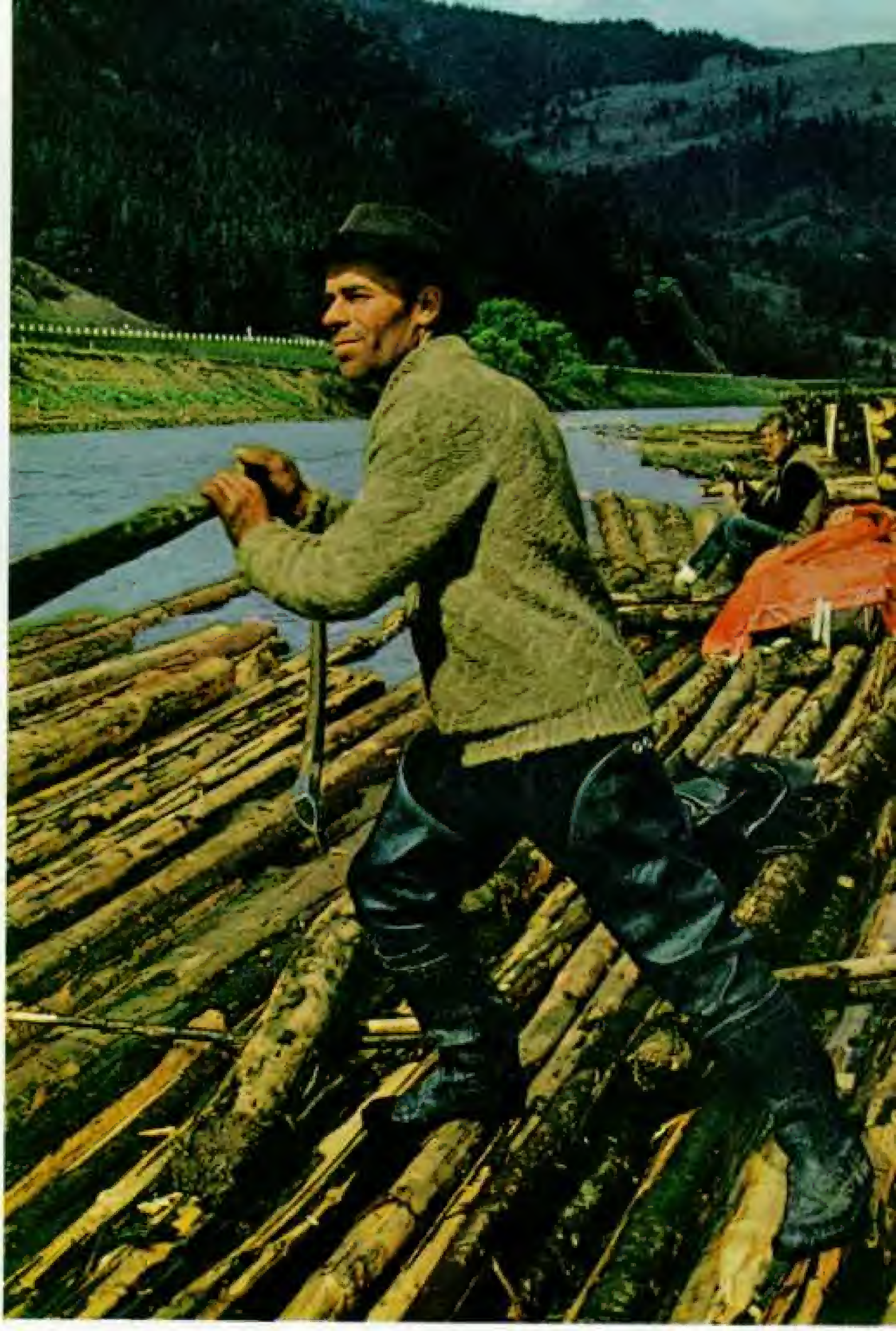
My cut-off jeans intrigued them. "Why did you cut them?" they inquired sadly, for a full-length pair of American blue jeans is a treasured possession in Rumania. Women giggled at the frayed edges and asked who my tailor was.

We spent the night in a 10-man bedroom for 20 Rumanian lei each, the equivalent of only $1.10. Food and wine cost the same as in the villages below, and tasted better than that of most city restaurants.

Oasis of Christianity, Sucevița Monastery, 10 miles from the Soviet border, lost its orchards and herds to the state when the Communists came to power. But this Rumanian Orthodox cloister, with its fresco-decorated church, won state aid as a tourist attraction and as a symbol of the nation's cultural heritage. Built by a Moldavian *boyar*—a wealthy landowner—in the 1580's, it served as focal point for village life. Through the centuries clergy and laymen studied at its school, its artists created glowing manuscripts, a press printed books, and monks advised parishioners on both spiritual and practical matters.

Today a handful of nuns offer room and board to visitors. The Americans, eager to try out their tents, camped on a slope nearby. At daybreak the mother superior waved a white handkerchief to invite them to breakfast.

Procession of saints, still bright after nearly 400 years on a façade of the Sucevița church, once helped educate and inspire peasants.



Riding the river Rumanian style, the Americans hitchhike on a raft floating down the Bistriţa to a sawmill. Felled in high mountain valleys, the spruce traveled by truck to riverside at Borca, where men bound the logs with steel cables. Standing in the bow, a steersman told the hikers, "We use power saws and wear hip boots, but otherwise for lumbermen on the Bistriţa, it is as in the old days." The industry itself

PHOTOGRAPH BY CHRISTOPHER S. JOHNS © N.G.S.

has changed greatly, however. Taking over ownership of forests, the government introduced scientific reforestation and built hundreds of miles of access roads through remote areas. Vast reserves, covering a fourth of the country, assure a continuing supply. Exports of logs, lumber, and wood products pour millions of dollars worth of foreign exchange each year into Rumania's economy.

Four-legged gourmet picks plums in an orchard at Herăstrău. Had the cow's owner arrived first, he would have converted the fruit into Rumania's national drink, a heady brandy called *ţuica* (pronounced SWEE-ka).

Round-table welcome greets the hikers in a private home at Borca. Natalia Cirje serves a meat soup to Dan, left, Bill, Chris, and Mugur. Sheep's-milk cheese, potatoes with olives, sour cream, and *mămăliga*, a corn-meal mush, round out their meal. Like many villagers, Natalia and her mother, right, display their treasured handmade laces and tapestries in their parlor, a room reserved for guests.

Not far from Rarău Peak, we came upon children and women gathered at a small shack, a wild raspberry collecting point. They stared at us wide-eyed, but when we asked to taste some of the day's pickings, 20 hands at once thrust sweet fragrant berries toward us.

Later that day we came to a Gypsy camp by a stream. A small dark-skinned boy—barefoot and dirty—ran to beg for money.

Bill tried a few words of Rumanian he had learned, but the child would not come close. Bill then offered him a piece of chocolate, whereupon the boy suddenly screamed, "*Moarte! Moarte!*—Death! Death!" and scurried away.

Many times in the past, we were told, the unwanted Gypsies were given poisoned food. One of the first lessons drummed into a Gypsy child is never to accept food from strangers.

Raft Gives View of State-owned Industry

Near Broşteni (Brosh-tenı), a small town in the eastern Carpathians, we were offered an unusual view of one of Rumania's leading exports—timber. An official arranged for us to ride a log raft 11 miles down the Bistriţa (Bee-street-sa) River, guided by two raftsmen with long steering oars (preceding pages).

Rumania's state-owned timber industry is a vital source of income. Every year huge quantities of wood and wood products are traded abroad for such needs as machinery, ores, and manufactured goods. Forests are well-tended and conserved for steady harvesting. Protection is so strict that if a private citizen cuts a tree, he may be fined the equivalent of $150.

Drifting downriver to the strains of Bill's guitar, we passed peasants, farms, grazing cattle, and wooded hillsides. Many times it seemed we must surely crash into boulders, but the oarsmen skillfully maneuvered away from them and around rapids.

"How long have you worked at this?" Chris asked one of our two pilots, a man of about forty.

"Since I was a child," he answered, "as my father did before me. There are only 12 of us left now who know how to handle the rafts. Today, most logs go to the mill by truck or rail."

Our ride down the Bistriţa ended at a large lake formed by

the new 417-foot-high Bicaz hydroelectric dam, a major source of power for Rumania's growing industries.

Southwest of Bicaz, we spent the night in a cabana crowded with vacationing high-school and university students. We were soon besieged with questions, pleas for blue jeans, and requests for Bill to play his guitar. Though our day had begun at 5 a.m., Bill obliged with "Memphis" and other American rock-and-roll songs before collapsing with fatigue.

I stayed up a bit later, exchanging questions and answers with a young medical student and his pretty girl friend. I asked how Rumanians liked the Russians.

"We've had our fill of them," the medical student said. "Not long ago everyone was forced to learn Russian in school. Now one can choose, and you will find very few of us willing to spend our time learning Russian.

"It's difficult for us in Rumania," he went on. "We work hard to become doctors, and then start at about the same wages as workmen. I want to travel abroad, but it is not easy to do."

With a frown he stared at his beer glass and said slowly, "Maybe I'll just go for good someday, no matter what it takes."

U. S. Rock-and-roll, Italian Style

During these first few days our guide Mugur was getting some surprises. "When I was told four Americans were coming," he confessed, grinning, "I expected them to come in Cadillacs. . . . It sounded pretty good, until I saw you with boots and backpacks! Since you've chosen to travel in a way that lets you see everything from top to bottom, I am

seeing a whole new side of Rumania myself."

A striking contrast to rural Rumania is the new city of Gheorghiu Dej, named for a former Communist Party head. Most residents prefer the old name of the town, Onești. Built to serve a giant chemical complex, the city represents the government's effort to create new industrial centers in rural areas.

In a hotel on a site where cattle had been grazing only a year before, we heard a rock-and-roll group sing U.S. songs in everything but English. The versatile linguists sang "Downtown" in German and "Bonnie and Clyde" in French, and both sounded fine. But when they tried Bill's favorite, "Memphis," in Italian, it sounded preposterous.

Gheorghiu Dej is a city of endless apartment blocks, wide, empty streets, and a skyline of modern chemical refineries. There were only 200 privately owned cars, and transportation was almost entirely by bus. Along the main boulevard, beds of colorful flowers did their best to relieve the long gray ranks of apartments.

Said an architect, "I'm willing to accept monotony to satisfy the critical housing need. For us, variety is still a luxury we can't afford."

The big industrial complex here includes a plant producing caustic soda, chlorine, insecticides, and plastics, as well as a synthetic-rubber factory. At the chemical plant, Chris asked how employees were trained.

"Most are educated at vocational and industrial schools," the chief engineer answered. "We also send our men to train others in factories elsewhere."

The answer reflected an impressive change in Rumania. A majority of the working population is still on the farm, but the pattern is shifting rapidly as a result of such teaching programs in schools and factories.

The average wage of workmen at Gheorghiu Dej is the equivalent of 90 U.S. dollars per month, about half as much as a plant manager earns. Apartments are cheap in the city. For 15 dollars a month a worker can house himself, his wife and a child, and maybe

Spreading onto rich farmlands, Ploiești builds new apartments. As its industries expand, Rumania races to put up housing; 57,000 units were finished in 1968. Workers pay an average of $15 a month rent.

Europe's petroleum industry was born on this hillside near Ploiești in 1857, two years before Edwin Drake struck oil in Pennsylvania. The Nazi war machine fed on Rumanian oil, and Ploiești became the target of costly Allied air raids. Today Rumania produces 13 million tons of crude oil a year, second in Europe only to the Soviet Union.

a grandmother from the country. Many services are free, but if a man wants to buy a car —a dream for most people—he must pay three to four times his annual salary.

"What keeps you on in Onești?" I asked a woman who had lived most of her life in a small village nearby.

"Now," she said, "I can easily buy the things I need. It's good for that reason. But many times I long for my old house."

Folk Tune Mourns a Beloved Land

Near a small railroad-junction town called Mărășești, 55 miles southeast of Onești, a monument in the peaceful countryside recalls fierce battles waged in this area in World War I. Here, half a century ago, my father was a lieutenant with the Rumanian troops that stopped the advancing German and Austrian armies. On the other side was a German lieutenant destined for fame twenty-some years later in North Africa—Erwin Rommel, the "Desert Fox" of World War II.

After leaving Mărășești we turned west into the higher reaches of the Vrancei Mountains. While waiting for uncertain bus connections in the town of Focșani, we passed the time in a dusty roadside restaurant.

Inviting himself to our table, a sockless man with a half-smoked cigarette hanging unlit from his lower lip pulled up a chair and began a tune on his *țambal*, a stringed instrument like a dulcimer, played with padded sticks. With expressionless eyes, he tapped out

mournful peasant melodies, their gentle flow occasionally punctuated by bursts of explosive rhythm. When we stood up to leave, he begged us to listen to one final tune.

As the sorrowful strains began, Bill asked Mugur, "Do you know what he is playing?" Mugur nodded. "He says it's called 'All the Roses Died.'"

This was one man's way of expressing the hardships that have come to the Vrancei. World War I ravaged the region; trees were cut over vast areas and never replanted. In many places all that is left are the open scars of uncontrolled erosion, where life can no longer take root in the rocky soil.

We flagged down a lumber truck, and it took us roaring up rutted roads in a cloud of dust that whitened everything behind us. Forests had once mantled the valley, but now we saw hillsides where conservationists struggled to restore lost vegetation. Finally we reached the small village of Herăsträu, amid fields and trees in greater number.

The embroidered blouses, dresses, and caps of Rumanian peasants are known throughout the world for their intricacy of design and

elaborate needlework (pages 814-15). At Herăstrău the blouses are especially famous for their rich colors and lively patterns, handed down for generations.

Verse Immortalizes Shepherd's Farewell

In many such villages of the Carpathians, wealth is measured not in currency, houses, or silverware, but rather in the quality and variety of home-woven blankets, carpets, and richly embroidered clothes.

In the cooler heights above Herăstrău the forests are thick from the abundant rain. Here

lumbermen work with noisy chain saws and teams of sturdy horses to cut and drag huge trees to waiting trucks. In a single year, we learned, one of these men can earn even more in wages than a skilled surgeon working equally long hours.

"Why the disparity?" I asked a forester.

"It is quite simple," he answered. "A laborer is highly productive for only a short period; he cannot count on the same physical strength all his life. It is natural that he earn more for that short period than a professional man, whose earning power lasts far longer."

Above Herăstrău we came one noon upon a shepherd family—a man, his wife, and three young sons—milking a flock of 350 sheep.

"Do you live up here?" we asked the man.

"Yes," he answered, pointing to a temporary shelter, a bed of fir boughs beneath a huge, uprooted stump. "Come and join us for sheep's cheese and mămăligă."

As we ate the soft white cheese and steaming corn meal, the shepherd suddenly asked, "And how did you get to our country?"

"In an airplane," Dick answered.

"And when you were up there, did you see God?" the shepherd asked.

Then, without waiting for a reply, he declared, "I think that when He saw men that high, He went higher Himself."

Many of Rumania's folk traditions stem from the mountain shepherd's simple way of life. He is fiercely independent, loyal, and as self-sufficient as his predecessors, the Dacian shepherds who roamed these mountains long before the Roman era.

The shepherd's life is seasonal; every fall he returns home to the valley, his flock heavy with curling wool and his carts loaded with cheese. His moods are those of the mountains and of mountain weather—gentle as the most fragile flower, dangerous as a wounded bear.

There is a Rumanian poem, "Miorița," that tells of a shepherd who is about to die. He instructs one of his sheep to explain to his flock:

Somber in widow's black, a farm woman near Podu Dîmboviței met the hikers with a sad tale, recorded in the photographer's diary. "A few months earlier her husband, armed with an ax, had attempted to drive off a bear mauling his sheep. When his son arrived with a rifle, the bear had fled; the father lay dying, his face unrecognizable. Without hesitation, the son trained the gun downward and fired. Now, with her son in the army, the mother tends the farm alone."

That I have married
The daughter of a king.
That at my wedding . . .
I had for guests
The firs and the aspen;
For priests, the high mountains;
For minstrels, the birds—
A thousand birds—
And the stars for torches!

In the western Vrancei we spent the night as guests at a government weather station. Dick Durrance had caught a cold and was treated by the kindly director of the station, who made him sit with his feet in a bucket of hot salted water for half an hour.

Amazed to find himself better after the strange treatment, Dick rewarded the director with a taste of peanut butter, pulled from deep within his pack. In 10 minutes the jar had been emptied and a second one almost finished by the meteorologists, who took a hearty liking to their new discovery.

At Comandău, a village deep in the Carpathians, we were intrigued by an atmosphere of the early American West. The surrounding hills reminded me of the Sierra Nevada. Rutted roads, horse carts, wooden boarding houses for workers and their families, outhouses and blacksmith shops, the local cafe—all seemed part of a Western film set. At the railroad station, a 100-year-old narrow-gauge steam engine puffed smoke from an old-fashioned bulging stack.

Mindful of regulations against photographing railroads, Chris and Dick turned their backs on the engine, with its sooty-faced crew throwing split logs into the firebox. Instead, Chris focused his camera on some nearby buildings. He was promptly arrested and charged with taking pictures of a lumberyard off to his right.

North Vietnamese Train in Tractor Plant

Long arguments ensued with the local Communist boss and the pudgy mayor, until Mugur finally turned their suspicion into willing cooperation. Soon we were riding in the mayor's jeep toward Covasna to catch a train for the city of Braşov, north of the Prahova Valley. This is Rumania's second-largest population center (after Bucharesti, with more than 260,000 people, many of whom are employed in Braşov's truck and tractor factories.

One day we visited the Uzina de Tractoare Braşov, a sprawling plant that yearly produces 21,000 machines in 18 different models. The factory proved to have its own form of censorship. With the plant's chief engineer as guide, we walked along the assembly lines. "Take pictures of anything you like!" he insisted. But whenever Chris or Dick focused on a tired or grimy worker, the engineer would intervene, "No, no, not that man; this one over here is better," indicating a smiling, spotlessly uniformed employee.

At one production line we noticed several decidedly Oriental-looking workmen.

"Where are they from?" I asked.

"North Viet Nam," the engineer answered. "They are here for a year or two of industrial apprenticeship."

Between Braşov and Ploieşti, Rumania's

Backpacking a sheaf of oats, a farm girl helps with the harvest near Măgura. Most farmers have joined collectives and state farms. But in the mountains men cling to their small holdings and their traditions of independence.

Proud craftswoman displays earthenware at the Maidens Fair. Families make pottery, carpets, embroidered shawls, and sheepskin jackets; Rumanian museums collect such folk art, acclaiming it a precious and authentic national heritage.

Bicycle race at Ploieşti

great oil-producing center, we made a side trip to Slănic, where for three centuries 98-percent pure salt has been extracted from formations deposited by an ancient sea.

In an elevator bucket we descended 600 feet into the gigantic man-made grottoes that yield half a million tons of salt a year. The pungent air is always at 55° Fahrenheit.

"What are the hardest problems of keeping a mine going?" I asked an engineer.

"It is the human factor that gives us trouble," he answered, "unskilled workers who cause frequent breakdowns in the machinery."

"Is this not true of most places?" I asked.

"Not to the same degree," he answered. "Here, most of our workers come directly from the farms, and they have little sense of showing up on time or caring for machines."

From Slănic we made our way south to Ploieşti (pages 822-3). Here, in 1943, during World War II, a heroic low-level bombing attack was carried out by waves of American bombers based in North Africa. Their target, eventually 80 percent destroyed, was the maze of oil wells and refineries at Ploieşti that supplied a third of the fuel for Adolf Hitler's war machine.

For a decade following World War II, much of Rumania's wealth in oil was lost in war reparations to the Soviet Union. Today, once again, Rumania alone benefits from the current production of some 13 million tons of

Belle on a holiday wears bellflowers picked during a hike up Rarău Peak. To contribute to "patriotic education and physical tempering," the state organizes excursions, holiday camps, and competitions for students.

Back home, young people follow a curriculum that emphasizes mathematics and the Rumanian language. Eight years of schooling are compulsory. Since 1966, more than 180 new secondary schools have been established, specializing in industrial, agricultural, economic, and teacher-training studies, with free day and evening classes. Some 700 schools cater to Rumania's minorities, chiefly Hungarians and Germans.

Young men in a hurry whirl around a track during sprint races at Dynamo Sports Park in Bucharest, the Rumanian capital. Weekend athletes can choose among dozens of sports clubs to compete in cycling, swimming, soccer, tennis, bobsledding, and rowing contests.

King of cyclists, Walter Ziegler of Bucharest accepts cheers after winning the Tour of Rumania race last September. He bested 59 rivals in the 12-day endurance race that carried him 1,000 miles.

crude a year—a flow that began as a trickle in 1857, two years before oil was discovered at Titusville, Pennsylvania.

After the busy factories of Ploieşti, we were eager to reach the mountains we could see looming on the horizon to the north. We returned to Sinaia, a resort town in the Prahova Valley, which holds a former country palace of Rumanian kings and queens. Designed in the late 1800's, it seemed out of place and clumsy in the beautiful valley.

Bouncing up a winding road in a Russian jeep, we reached the 4,600-foot level, from which a ski lift raised us another 2,000 feet to a plateau of rolling treeless pastures. We trudged along cliff edges, through the Bucegi range, toward the village of Bran.

Wind's Song Graces a Forbidding Tower

Bran is famous for its equally incongruous yet strategic castle, with four looming towers. One, the Black Tower, is named for the boiling pitch that was poured on attacking forces in days when the castle served as a toll station for commerce across the Carpathians. Constructed in the 1370's, the tower's nine-foot-thick walls were never conquered.

As we wandered through the castle, remodeled after World War I by Queen Marie as a royal retreat, a musical tone seemed to follow us.

"What is that wonderful sound?" I asked the middle-aged woman serving as guide.

"Look," she said, pointing to the peak of a cone-shaped roof. "There is an aeolian harp up there. It plays with the wind, you know."

(Continued on page 836)

Bucharest reacts to crisis. When the Soviet Union invaded Czechoslovakia on the night of August 20, 1968, Rumanians feared their country might be next. The hikers rushed to the capital, where this crowd (right) gathered before Communist Party headquarters, listening to news on transistor radios. The author, at extreme right, recalls, "Popular feeling rallied behind President Nicolae Ceauşescu's attack on Soviet 'imperialism' and his promise of solidarity with the Czechs."

Two days later the capital celebrated a national holiday (top) marking the end of Nazi rule and, ironically, the beginning of Soviet occupation of Rumania in 1944. Some 350,000 marchers pass government leaders in the grandstand. The parade was intended to demonstrate support for Rumania's Communist regime. Marchers came from each city district, factory, and school; these folk dancers represent Bucharest's Sector 7.


SECTOR

Their mountains a refuge, Carpathian peoples live as they have for centuries, little touched by political currents or the waves of invaders that have swept Rumania.

In the Rarău Peak region, priests still bless each home on Whitsunday with a new wooden cross and a sprig of basil (above).

In Lepşa a woodcutter's wife cooks mămăligă for the hikers. Her kitchen, a building separate from the house, has no chimney; smoke rises to the rafters where meat hangs to cure. The custom originated centuries ago, when chimneys were taxed as luxuries. In winter the family sleeps in the kitchen for warmth.

"Here in the Vrancei Mountains," the husband told the hikers, "we have seven months of winter and five months of cold."

STORM SCENES BY JACK SPARLING © M.A.S.

TWENTIETH-CENTURY TOWERS *share the skyline with a turreted castle, proud symbol of medieval strength. Feeding the steel- and ironworks of Hunedoara, iron ore moves from a freight yard on cable cars swinging above workers' homes.*

Antique atmosphere mantles Sibiu in southern Transylvania. On the site of a Roman settlement, the city burgeoned when Saxons arrived in the 12th century. Its towers rose in the 1400's as defenses against the Turks. Today the Germanic influence survives in the neat tiled houses, Lutheran faith, and old Saxon dialect.

An American of course! Shoppers in Bucharest spotted Bill Wilson's national origin by his U. S.-style blue jeans and aluminum-frame pack. His guitar proved a perfect ice-breaker, turning strangers into sing-along friends.

The gentle sound wavered in volume, like a musical weathervane. High in the blue, as if gliding in harmony with the playerless harp, a dozen storks gracefully circled, like dancers in an endless ballet.

Some of the dwellings hereabout are built in a style retained from pre-Roman days. They are constructed of rough-hewn logs around a small courtyard, and are divided into living space for both people and animals.

An ebullient woman with a laugh that could have been heard several valleys away invited us to stay with her and her husband on one of these old farms. A hayloft became our home for the night.

As we talked with the husband that evening in the single room of their house, the energetic wife bustled in. "I've just been making some good tea for the cow," she said. "I have some left over, if you want."

The cow, she explained, was about to calve.

We accepted. Spiced with plum brandy, the tea was delicious.

Czech Crisis Tests Rumanian Courage

On August 21 an early-morning radio report announced the Soviet invasion of Czechoslovakia. The Rumanian Government was meeting in emergency session to discuss the threat that now faced it.

"It's impossible," Mugur muttered, quite shaken by the seriousness of the sudden

announcement. Quickly we decided to return to Bucharest to follow developments.

Ironically, all around the city, bright flags waved, for the capital had been preparing for Rumania's equivalent of our Fourth of July. On August 23 Rumanians were to celebrate their ousting of the Germans in 1944, when the nation welcomed Russian columns.

Plans were altered at the last minute, to include company after company of workers who paraded with guns on their shoulders. The government wanted the message to be clear: If anyone forced his way into Rumania, the people would be armed and ready.

In personal ways, Rumanians delivered the same message. "We will resist the Russians if they come!" a bus conductor told Chris. The capital was plainly nervous (pages 830-31).

We saw signs calling on the one hand for "Solidarity With the Struggling Brother Socialist State of Czechoslovakia," and on the other for continued friendship with Russia.

As it became clear that Rumania was in no immediate danger of invasion, we resumed our Carpathian trek. By train from Bucharest we reached the Făgăraş Mountains and set out to climb Moldoveanu, the country's highest peak at 8,343 feet.

Despite spells of fog and rain, the mountain rewarded us with views into deep valleys that echoed with the sound of cascading streams. At times we glimpsed dozens of wild

Muscle against mountain, Dick Durrance scales a rock face in the Făgăraş, following a cable anchored along a climbers' trail. Mountaineers rejoice in this rugged range, once part of the border between Rumania and the Austro-Hungarian Empire. "Our other mountains are not the same," one told Dick. "They are too easy and too full of tourists in street shoes."

Alone but unafraid, a shepherd tends a flock of 300 sheep on the grassy south slope of the Făgăraş ridgeline. From May until September he wanders here, with only his dog and staff to ward off bears. At night he beds the animals in an enclosure with other flocks. Milk from the ewes is made into cheese and apportioned among the livestock's owners, whom the shepherd identifies by dye spots on the animals' backs.

chamois silhouetted on ridges. Yet Moldoveanu took its toll as well, causing Mugur to twist his knee badly and Bill to suffer the return of an old back injury. Both had to give up the trip, and we sadly parted from them at the railroad station in Sibiu.

Known also as Hermannstadt, Sibiu has kept its Saxon charm and language, legacies from Teutonic settlers in Transylvania generations ago. Quaint houses and staircased alleyways, cobbled streets and little shops are part of the attraction (pages 836-7).

After a few days our new guide arrived in Sibiu, full of energy and enthusiasm for our final two weeks of travel to the Danube. He was Alec Popescu, a 21-year-old international economics student at the University of Bucharest, with a startling Genghis Khan-style mustache.

The "System": Mad Scramble for Tickets

We nearly lost Alec on our departure by train for Deva and the Hunedoara steel mills, 60 miles to the west. Alec went ahead to buy our train tickets at Sibiu's crowded station. In Rumania public transportation is efficient in most ways, but not in selling tickets. An hour before train time, a single ticket window is opened, and often a frantic mob scene ensues.

At the station we found Alec in the middle of such a scene. Although he is a Rugby player, he stood helpless in the middle of a mass of peasants, vacationists, and soldiers, all waving money and shouting at the unruffled clerk for faster service. Suddenly there was a commotion, and from the middle of the crowd a woman who had fainted was extracted like a cork from a bottle.

As the clock ticked closer to departure time, we jumped aboard the train and called to Alec to forget the tickets. It was a costly mistake. The conductor fined us each five times the amount of the fare.

To our protests he replied that such punishment is necessary to prevent cheating and bribing of conductors. Only with heavy fines can passengers be taught the system.

"Some system," was Dick's final comment.

Thirty miles southwest of Deva, at Sarmizegetusa, stand the ruins of Ulpia Trajana, the Roman colonial capital of the province of Dacia, which Trajan's legions conquered in A.D. 105-6. The city had a coliseum, forum, and baths—of which only a few crumbling relics remain today. On a bluff nearby we saw peasants with carts, animals, and goods for market traveling a road used by Roman chariots and soldiers 1,700 years before.

On our way to Sarmizegetusa, we stopped at a more modern town, Hunedoara, the steel center of Rumania, where giant smokestacks spewed clouds of reddish smoke. Above the city stands 13th-century Hunedoara Castle (pages 834–5). Its massive stone walls symbolize the power of a pre-industrial era, founded on the might of fortresses rather than on thundering steel mills. A crew of workmen were busily restoring the long-neglected walls and chambers of the castle.

"Not long ago we excavated walls of the original fortress," Gheorghe Schueller, the foreman, of Saxon descent, told us.

"Look here," he said, pointing to an inscription high on a wall. "That was carved by a Turkish prisoner. There were four of them here in the 15th century. They were told that freedom would be granted them if they dug a well in the castle and found water. They worked and worked, and when water was found only after two had died, their keeper told the others they would be beheaded anyway. One of them chiseled his last words up there."

In Arabic lettering, the inscription read:

WATER WE MAY HAVE FOUND,
COMPASSION WE SURELY HAVE NOT

Shaggy Guest Pays a Morning Call

Our last stop before reaching the Danube was in the Retezat Mountains, a southern range of the Rumanian Carpathians. Much of the Retezat has been set aside as Rumania's first and only national park.

Ion Micleа, husky finance director of a

large agricultural cooperative, offered to lead us to some of his favorite spots there. He bore a striking resemblance to Theodore Roosevelt in both appearance and energy.

First by bus and then on foot, we climbed up into the Retezat, a range more vast and lonely than any we had seen so far. We camped by one of the scores of small lakes for which the region is famous.

We awoke to a call from Ion, "There's a bear out here. Quick, get your cameras!"

As we burst from the tents, a 300-pound brown bear confronted us, 20 yards away. Outnumbered by several wide-eyed specters in long white camping underwear, the visitor wheeled and disappeared over a rise.

On another occasion we poked our heads above some rocks and found ourselves staring at a chamois on a crag thirty feet away.

"He'll stay in that rigid pose all day unless we move," Ion whispered. Finally, a gesture of Dick's hand toward his camera sent the *capra* rocketing out of sight.

That afternoon we met some hikers who warned us: "Last night a bear killed a cow several kilometers farther along the trail. If you go by there tomorrow, be careful; it may still be eating and can be dangerous."

In this region, Ion told us, bears weighing as much as 700 pounds have been killed. Often they attack sheep or cattle brought up to graze during summer. Beside the trail next morning we passed not one, but two skeletons of cows picked clean.

After parting from Ion, we traveled east and south out of the lush Retezat toward the

PHOTOGRAPHS BY CHRISTOPHER S. ROBBINS (ABOVE) AND ELI SUKENIK © N.G.S.

As their mothers did before them, village women work sheep's wool in old-time ways. The weaver (above) adjusts her warp to create a rug of intricate design at the textile cooperative in Răşinari, a handicraft center. The spinner at Herăstrău (left) twists raw fiber from the distaff, held under her left arm, winding it on a spindle in her right hand. As is customary, she and her knitting friend work standing.

Short-order cook with an acetylene torch, a welder on the Iron Gate dam (below) heats soup for lunch. The project is planned by Rumania and Yugoslavia as the largest hydropower system on the 1,770-mile-long Danube. For its portion Rumania employs hundreds of men from farms and villages. On-the-job training gives them the technical skills needed by a nation striving to industrialize.

Joining hands, Rumania (foreground) and Yugoslavia tame the Danube. Each constructs half the dam, one set of ship locks, and a powerhouse with six turbine generators. Where the freight barge moves downstream toward nearby Turnu Severin, the 182-foot-high dam will close this autumn, its reservoir drowning the treacherous Iron Gate rapids, thus speeding and increasing river traffic. Massive pillars will buttress ship locks. By 1971, some five billion kilowatt-hours of power will pour annually into each nation.

Danube. The countryside here seemed anything but prosperous. We saw ramshackle homes and people with faces drawn thin by hunger. In one tiny field we passed three women plowing with gaunt oxen.

Yet the scene held promise of a better day. Beside the field we saw construction crews at work, erecting tall metal towers for electric cables that will one day carry quantities of new energy across Rumania from the Danube River. The source of power, a new hydroelectric dam at the Iron Gate on the Danube, was our final goal.

A slow bus ride from Tirgu Jiu over dusty roads brought us to the Danube at Turnu Severin. Cargo-laden barges struggled upriver against the current, and fishermen lounged along the banks. The sight brought memories of our canoe trip down this great river four years before.

Here, in A.D. 104, Emperor Trajan, on his way to conquer the Dacian king, Decebalus, ordered his engineers to build a bridge across

PHOTOGRAPHED BY DICK DURRANCE II (BELOW) AND CHRISTOPHER S. KNIGHT (C) N.G.S.

the Danube. On the Yugoslav side stand the last vestiges of 20 stone piers of the bridge that linked Dacia with the Roman Empire.

Today that superb engineering feat is being matched by a project of modern technology a few miles upriver. Where the Danube breaks out of the Transylvanian Alps at the Iron Gate, Yugoslav and Rumanian engineers are building a dam that will soon benefit both countries enormously.

Nations Team Up to Harness the Danube

"This is a great Rumanian—and Yugoslav—effort," Ion Leuştean, the technical director on the Rumanian side, told us during a tour of the half-finished dam (left).

"The unique feature of the project," he added, "is political, not technical. Rumania and Yugoslavia worked together for seven years just to plan the dam. The first blasting took place in 1964. We hope to finish the job sometime in 1971."

Cooperation between the two nations, we learned, does not necessarily mean savings in costs. Political sensitivity prevented the partners from agreeing on plans to avoid expensive duplication of work.

When completed, the dam will back the Danube up almost as far as Belgrade, the Yugoslav capital, 110 miles upriver. The electric-power supply will jump 20 percent, or five billion kilowatts, in Rumania alone, when her six new turbines begin to whine.

The setting was impressive, with two great concrete arms reaching out, one from each bank, toward midstream. Sometime late in 1969, Mr. Leuştean explained, the two sides would be joined by dumping stone blocks, weighing 15 to 20 tons each, into the river at a rate of one a minute for two weeks—20,000 blocks in all. The last stretch of rapid water on this part of the Danube will have been turned into a placid lake. River traffic will detour the dam through a system of locks.

On the Rumanian side more than 3,500 buildings are being relocated. A whole island—inhabited since the 15th century by Turks—will be flooded. Their buildings, dismantled stone by stone, will be re-erected on another island downriver.

From the Iron Gate we journeyed upriver to the gorges of the Cazane, where the Carpathians plunge abruptly into the Danube. That night we camped on a height overlooking the river, and soon had a cheerful fire going.

"This is it," I find recorded in my diary.

"our last night in the Carpathians. We have lived with the past in monasteries and remote villages, with the future in factories and new cities—and with the danger that has united a courageous people in time of crisis.

"Rumania has shown us the diversity we saw very briefly on our canoe voyage in 1964. The country has also shown us that there is a long way to go for fulfillment of hopes in the hearts of many individuals. Most of all, we have learned that Rumanians take a deep pride in their nation; that they will unite if one or all of them are threatened from the outside.

"Gazing out over the Carpathians, there is no need to write more—only to look, and to let Rumania speak for herself." THE END

FULL MOON *and flickering campfire bathe the hikers in the Retezat range during the final week of their 1,100-mile expedition through the mountains of Rumania. Lake Bucura provides a watering hole for bear, chamois, lynx, and stag in the country's first national park.*

KODACHROME BY DICK DURRANCE II © N.G.S.

Fish out of water—but still very much in its element. Amazing *Clarias batrachus* crosses a road by sculling with its tail as it elbows along on spiny pectoral fins. A lunglike organ enables it to breathe

Finned pedestrian, released in a roadside ditch, jaywalks near Boca Raton. The Asian species started its life in Florida waters several years ago when specimens imported by a tropical-fish dealer literally walked out of captivity. Their progeny, meeting few natural enemies, now infest many of southeast

during land jaunts of a quarter-mile or more. The species, which may reach 22 inches in length, usually wanders at night; the photographer persuaded this foot-long individual to take a daytime stroll.

Florida's interconnecting waterways, where they compete with native fish

New Florida Resident, the Walking Catfish

By CLARENCE P. IDYLL, Ph.D.

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Illustrations by National Geographic Photographer
ROBERT F. SISSON

FLORIDA'S PLEASANT CLIMATE attracts a few eccentrics, as well as hordes of ordinary mortals. One of the recent oddball newcomers is a fish that is charged with some most unfishlike behavior: It breathes air, it strolls on land, it fights dogs. The first two of these allegations—though not the third—are true, and a more serious one can be leveled: The "walking" catfish poses a real threat to the fresh-water ecology of Florida—and perhaps of neighboring states as well.

On May 25, 1968, a night watchman at a construction site near Boca Raton, investigating the barking of his dog, was startled to encounter a strange-looking fish traveling across bare ground. This story ballooned into a widely printed tale of an excited housewife who reported, "My dog is fighting with a big catfish in the back yard." But since then a great deal more attention has been given to the walking catfish in terms of its rapid spread across the state and the threat it poses to local species.

The walking catfish, *Clarias batrachus*, first arrived in Florida when tropical-fish dealers imported young specimens for sale.

Threatened zone spreads ominously from Boca Raton, where *Clarias* first escaped. Large numbers of catfish have been seen marching together across the countryside. Florida fisheries expert Vernon Ogilvie (opposite, left) has declared the species "unmanageable."

Escaping from a death trap, a catfish climbs out of a pond poisoned with rotenone (below). After a three-month program failed to find a way to control the fish, Florida biologists had to admit, "*Clarias* is here to stay."

Some apparently escaped as long as three to six years ago; now they are thriving in a wide area of southern Florida.

I get the same questions from nearly everyone to whom I show a walking catfish: "Are they only that big?" and "Where are their legs?" Their fabled ability to tramp over the countryside and fight dogs has apparently created the image of an enormous, menacing creature. In truth, *Clarias batrachus* grows only to about 22 inches in eastern India and Southeast Asia, whence it comes. So far, the largest collected in Florida has been 18 inches long.

Most of the walking catfish originally imported were albinos—pale pink with a darker pink head. They have long, somewhat eel-like bodies and large flattened heads bearing eight long barbels. These are obviously important sense organs; the fish reacts instantly when the barbels are touched.

Many of the individuals found in the wild in Florida are still albinos, but a substantial number of offspring have reverted to the normal colors, from pale slate-gray to mottled browns and blacks (page 850).

At first I was doubtful that the fish actually walked, in the sense of using limbs to propel themselves. But after virtually nose-to-nose observation, I am convinced that they do. While much of their forward progress is made with a snakelike slither and vigorous thrashing of the tail (preceding pages), the walking is aided by the use of stout spines in the pectoral fins (opposite, upper).

To walk on land, the catfish must be able to breathe air. Indeed, even in the water *Clarias* comes to the surface to gulp air at intervals. To allow for this, the rear part of each gill has evolved into a sort of lung (diagram, opposite).

Tools of an odd fish

TRAVELER BY LAND AND WATER, *Clarias* has been equipped by nature to survive in either realm. Each of its pectoral fins, used for steering and balance in swimming, has a long stiff spine, upper right, that can dig into the ground and help balance and propel it while on land. If a spine punctures the skin of a human handler, a mucous secretion enters the wound and triggers a painful reaction.

The breathing apparatus, too, does double duty. Elaborate organs behind the gills, right, function much like lungs and enable the fish to breathe air for hours while out of the water. In fact, in its natural element, it often comes to the surface for air.

REPRODUCTIONS © NATIONAL GEOGRAPHIC SOCIETY

PHOTOGRAPHED BY ROBERT F. SISSON © N.G.S.

True color showing, a normally pigmented catfish turns as if to intimidate a challenger. Most *Clarias* specimens imported were albinos, but many descendants—including this one—have reverted to gray, brown, or black. Whisker-like barbels, equipped with taste buds, brush along the bottom in search of food. *Clarias* devours almost anything edible—worms, mussels, other fishes, insects, water plants. A glutton, it sometimes eats until its belly is spherical.

Mauling a bullhead unlucky enough to share its tank, a 15-inch albino catfish displays its ferocity. Most fishes give *Clarias* a wide berth; even a voracious piranha retreated when first confined with a walking catfish. The fast-breeding alien species, though popular as food in parts of Asia, is not as desirable as the fishes it is displacing in Florida. Its continued spread poses a threat to the fresh-water ecology of a wide area.

Being a fish, *Clarias* prefers to remain moist. This is probably why it walks mostly at night and during periods of rain.

Sometimes the newcomers move across land in large numbers. At least one such migration was reported last fall when a bartender saw "hundreds" of them north of Fort Lauderdale, slithering across a road at 2 a.m. He caught three of them and reported the incident to biologists of the Florida Game and Fresh Water Fish Commission, who found five or six more on the road the next day, crushed by passing cars.

Clarias Drives Out Native Bass

Two of these biologists, Vernon Ogilvie and Robert Goodrick, have conducted research on *Clarias* for the state; both are deeply concerned about its threat to native aquatic life.

Mr. Ogilvie has drawn the wrath of some fish dealers and aquarists by declaring the walking catfish "a disaster," and "extremely frightening" to him as an ecologist. Not long ago I talked to him at his laboratory in West Palm Beach.

"In some bodies of water close to the original area of infestation," he said, "*Clarias* is now the dominant fish. There is no doubt that it has shouldered out the native fishes."

I got the same story from Dr. Walter R. Courtenay, Jr., ichthyologist at Florida Atlantic University in Boca Raton.

"In almost any place where a concentration of walking catfish is found," he told me, "little else remains except a few small fish called sleepers. The catfish have displaced valuable game fishes like largemouth bass, as well as panfishes such as bluegills, shellcrackers, and warmouths. In one pond no bigger than my living room, I caught 65 of these new catfish in two hauls of a seine, and it seemed there were hundreds more."

The walking catfish is exhibiting a classic response to introduction into a new environment. Without the biological checks and balances that control animal—and even plant—populations in their native lands, exotic species often multiply exuberantly, sometimes completely displacing indigenous forms. Moreover, they often bring new diseases and parasites. With *Clarias*, Florida is again the loser, as it was with the water hyacinth, introduced from South America in 1884 and now throttling the state's waterways.

Worse, I believe, is yet to come. It appears certain that *Clarias* will spread farther, and that it will take over many ponds, canals, and lakes. Its equipment and its behavior virtually guarantee this. The south Florida water area is an enormously intricate complex of shallow lakes and ponds joined by drainage canals and natural channels, and it is periodically flooded in the rainy season. Populations of native fishes and other aquatic animals are greatly depleted during drought when many ponds and marshes go completely dry and water levels in the canals are greatly reduced.

But *Clarias* has the advantage of being able to breathe air when waters are low, and even to lie buried in the mud in extreme conditions. Or, better still, it can trek off across country to other ponds or canals, leaving its native competitors to perish, though its primary motivation for walking on land seems to be to seek food.

Clarias apparently reproduces very rapidly. It is definitely breeding successfully in Florida, where it spawns through much of the year.

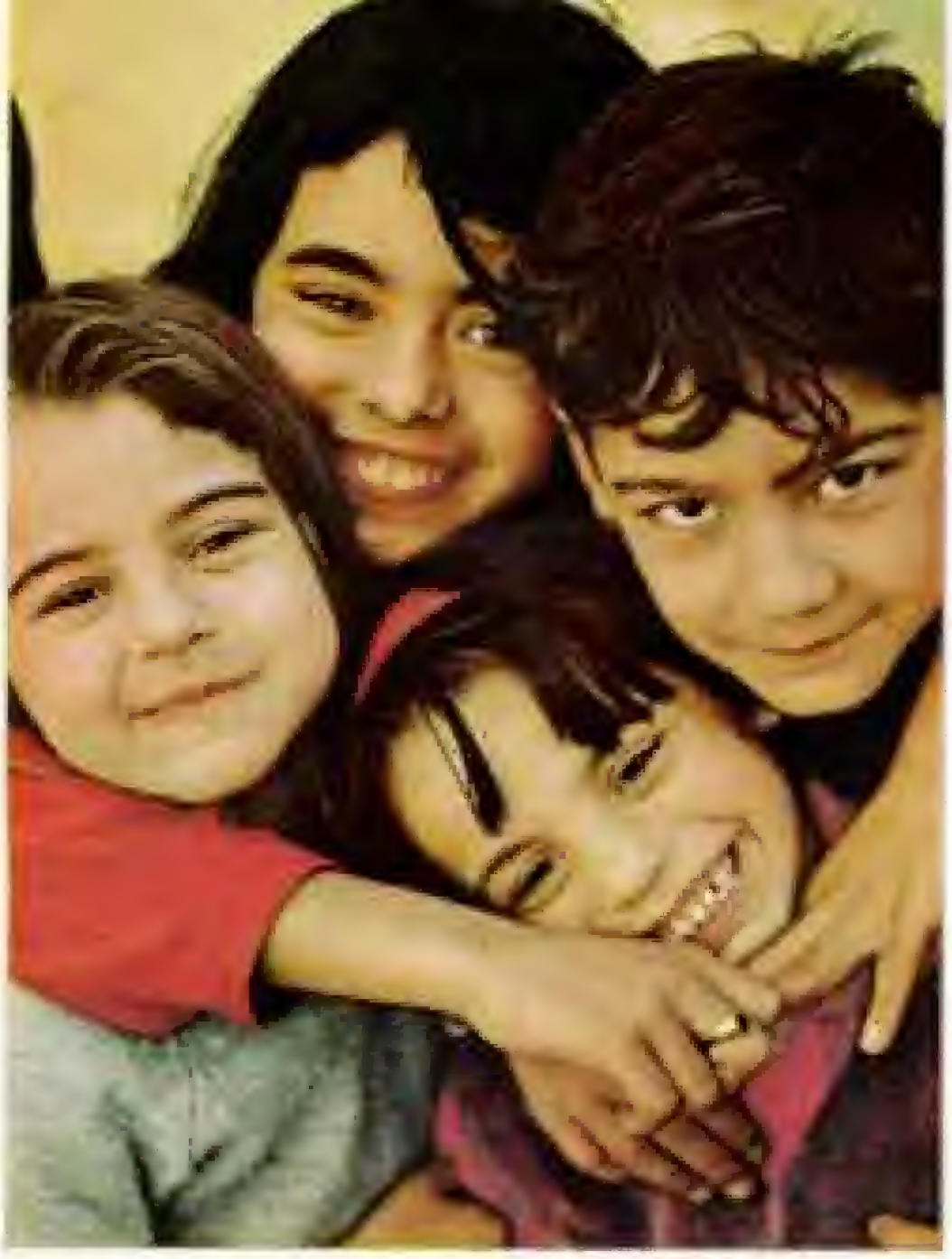
The walking catfish is viciously aggressive. Even the famous "man-eating" piranha avoids an adult *Clarias* when put in the same tank. Photographer Bob Sisson watched an "unbelievably ferocious" attack by a 13-inch walking catfish on a 7¾-inch bullhead, one of the native catfishes, which it eventually killed (opposite).

"*Clarias* has already gotten into Lake Okeechobee, and I'm holding my breath for what will happen when it reaches Everglades National Park," Vernon Ogilvie told me. "It may have disastrous consequences."

Both he and Walter Courtenay believe the catfish will spread at least to central Florida. Mr. Ogilvie thinks Georgia, Alabama, and even Tennessee may not be exempt. Colder climate will presumably keep the fish from moving farther north than that.

But walking catfish are in Florida to stay. Last November the Game and Fresh Water Fish Commission reluctantly gave up ideas of trying to eradicate them, concluding that they were already too widespread. Besides, as Vernon Ogilvie said sadly, "How do you kill a fish that simply walks away when you poison its pond?"

THE END



Democracy's

Blue-water bastion, the Grand Harbour of Malta offers the world's ships a mid-Mediterranean haven. The sheltered anchorage lured a succession of maritime powers: Phoenicians, Greeks, Carthaginians, Romans, Byzantines, Arabs, Normans, Spaniards, the Knights of St. John, the French, and finally the British.

Rebuilt after World War II air raids, the port area shelters 145,000 people, nearly half the population of the island nation, which won independence in 1964. The four youngsters at left live in Valletta, Malta's capital at the tip of the peninsula below.

Fortress: Unsinkable Malta

By ERNLE BRADFORD *Photographs by TED H. FUNK*

THE OLD MAN held out a brown hand, shiny with fish scales. "Welcome back to Malta, captain! I hope it will be a long stay." Behind him his brightly painted 20-foot fishing boat bobbed on the water of St. Pauls Bay. A crisp northeasterly wind was sending a swell into the harbor. I looked at the sky inquiringly.

"A little *gregale*," Didi said, using the wind's Italian name. "But not too much. Perhaps we can go fishing tomorrow."

"It's a long time since we last went out," I said. "I'd like to visit Selmunet again."

Didi Altair lives in a four-room cottage right on the bay where St. Paul stepped ashore after his shipwreck about A.D. 60. Selmunet is the island at the mouth of St. Pauls Bay where, Maltese tradition says, the Roman merchant ship carrying the Apostle from Palestine met its end. The same gregale that blew round my ears had brought St. Paul's ship to grief there 1,900 years ago:

"[They] hoisted up the mainsail to the wind, and made toward shore. And falling into a

place where two seas met, they ran the ship aground . . ." (Acts of the Apostles 27:40, 41).*

They swam from Selmunet and, reaching the shore, "they knew that the island was called Melita. And the barbarous people shewed us no little kindness . . ." (28:1, 2). To the Greeks, Malta was indeed known as Melita, meaning "honey." Yet the name is probably even older, deriving from the Phoenician word *maleth*, for "haven" or "hiding place."

When St. Paul called the islanders "barbarous," he meant only that they spoke neither Greek nor Latin. To the ancients, unfamiliar languages sounded like stammering ("bar-bar-bar-bar")—and so, "barbarous."

In Malta the past is always present. St. Paul is every bit as real to Didi as Father Galea, his village priest. A common Maltese saying, used to console people when things go wrong, is, "Don't forget that even St. Paul was shipwrecked on Malta."

I have known Didi about twenty years,

*See "Jerusalem to Rome in the Path of St. Paul," by David S. Boyer, NATIONAL GEOGRAPHIC, December 1956.

Today's special at the Paola market, this home-reared rabbit will become *stuffat tal-fenek*—rabbit stew—a national dish. During centuries of foreign rule, Maltese cookery took on many an exotic touch from the cuisines of other lands.

"Ye cursèd streets of stairs!" ranted lame Lord Byron on a visit to Valletta in 1811. Here two modern Britishers take them in stride. After a Turkish assault in 1565, the Knights of St. John

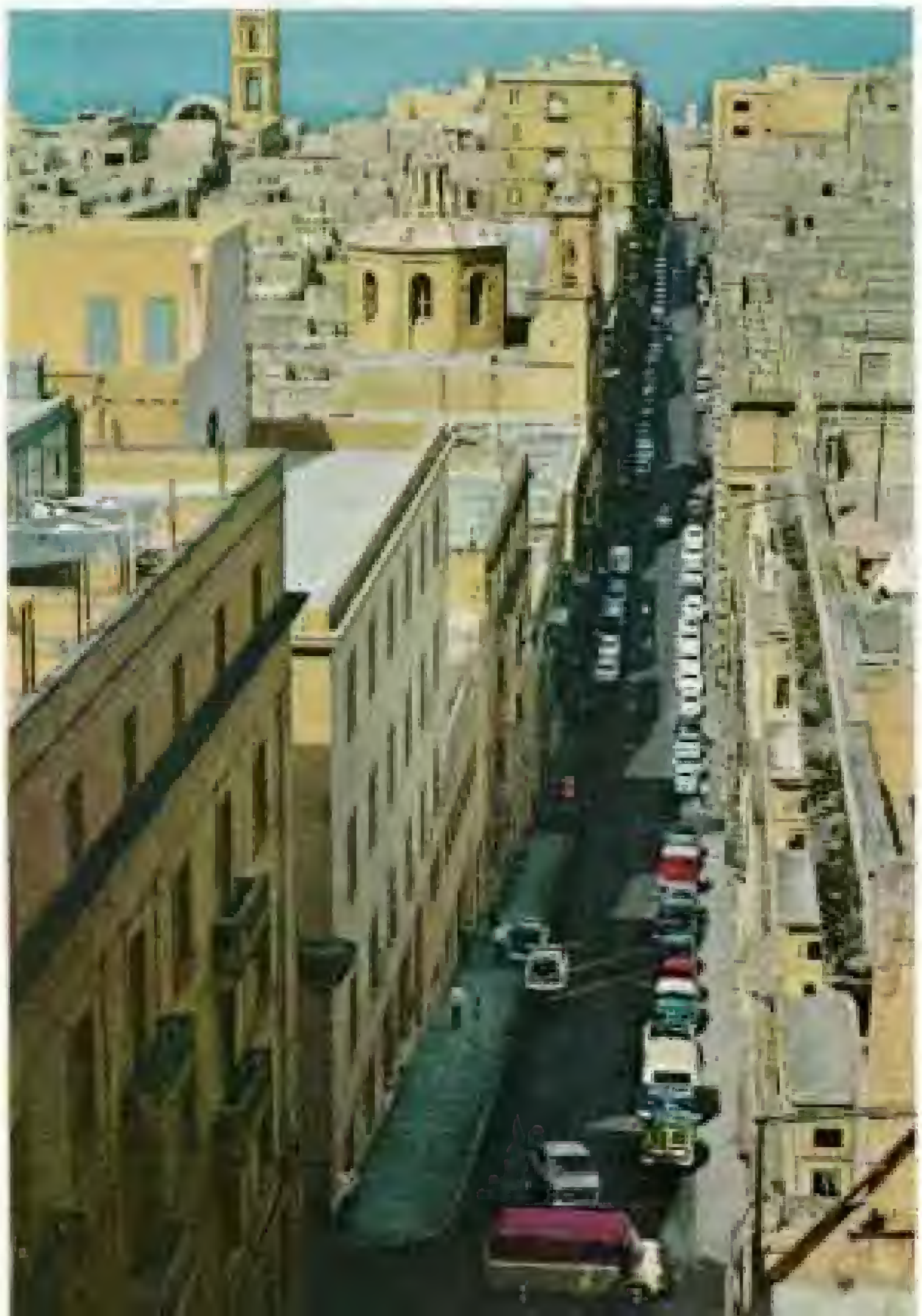
ever since I sailed my own small boat out here from England shortly after World War II. His island I have known even longer, having first come here in the Royal Navy in 1942, on one of the convoys that battled their way through to the island from Egypt and England against heavy Luftwaffe and U-boat attacks, bringing food to save the beleaguered Maltese from starvation. Since then I have visited Malta many times, in all seasons. I lived on St. Pauls Bay with my wife and young son for a year while I wrote a book on the great siege of the island by the Turks in 1565.

When I come ashore at this sunny limestone island, I never feel I am "abroad." I feel at home. Nearly all Maltese speak English, and, despite the diverse cultures that have influenced the island for almost six millenniums, the past century and a half of British rule has set its seal upon Malta. More beer is drunk than wine, cars drive on the left, postboxes are painted red, and policemen are courteous and helpful. Malta became independent in 1964, but the British legacy remains.

built the city on a hill to withstand a second siege. The streets proved so steep that steps had to be laid for better footing.

Cameo beauty set in lace, Kathleen Farrugia, Miss Star of Malta, wore traditional costume to compete in the 1968 Miss Universe contest. Decorated with delicate webs, the dress shows the skill of the islands' lacemakers. It takes a woman from dawn to dusk merely to edge a handkerchief with such intricate patterns.

Times of Malta (second) photographed at the H. Luke & Son, N.G.S.



"How have things been here since independence?" I asked Didi.

"Some better, some worse." He scratched his head. "It is too early to tell yet. It is like when your children leave home, they think everything will be freedom and happiness. They find, though, that independence has its own problems. Lots of tourists in the summer. But things cost more."

King Awards the George Cross

I had been in Malta on that historic day, September 21, 1964, when the Maltese became responsible for their own destiny. The red-and-white flag of Malta with the George Cross emblazoned on it had snapped in the wind above the parade ground in Floriana, a suburb of Malta's capital, Valletta. I had understood the islanders' pride at that moment and the reason the George Cross —Britain's highest civilian honor—was on their flag.

The part Malta played as a military, naval, and air base during World War II remains an epic. For the bravery and historic resistance of the Maltese in the face of the air and sea raids by the Axis Powers, King George VI bestowed the George Cross, and President Roosevelt gave the islands' "brave people" a Presidential Citation.* Fortress Malta served the Allies, too, when they launched their invasion of Sicily and Italy and struck, in Winston Churchill's famous phrase, "at the soft underbelly of the Axis."

Today, because of recent increases in Russian naval strength in the eastern Mediterranean, Malta is again involved in big-nation conflicts of interest. NATO's Mediterranean headquarters is here, and the waters round the Maltese archipelago are, from time to time, the scene of large-scale NATO exercises involving vessels of the United States, Britain, Greece, and Turkey.

*The story of that heroic stand was told by a Royal Navy captain in "Malta Invicta," National Geographic, March 1943.

Once battered, now rebuilt: In April 1942 Valletta's Old Bakery Street lay devastated by the tons of bombs rained on Malta during Axis air raids. Today the street glows again with the mellowing golden limestone that characterizes Maltese towns.

SURVIVING REMNANT of a land bridge, Malta once linked the Italian peninsula to Africa. Caves such as Ghar Dalam abound with bones of prehistoric hippopotamuses and elephants that migrated from Europe with the advance of the Ice Age.

Proud moment for a new nation

INDEPENDENCE DAY, September 21, 1964: Prime Minister Dr. Giorgio Borg Olivier adds his voice to Malta's rejoicing. Britain's Prince Philip, far left, represents the Crown.

The world honors Malta, owing her a debt of gratitude. In 1942, under increasing Axis bombing, the island stood alone, cut off from her allies. Between Malta and German conquest stood only the courage of her people. Into the limestone rocks they tunneled, while above them a dozen times a day the air-raid sirens wailed. Still Malta held on. It was August before the most famous of the Malta convoys—four cargo ships and a tanker out of an original 14 supply vessels—limped into Grand Harbour with food and fuel for the desperate Maltese people.

King George VI awarded the George Cross, Britain's highest civilian decoration, for the first time to an entire population. President Franklin D. Roosevelt, returning from the Teheran Conference, delivered the thanks of the American people to Malta, "one tiny bright flame in the darkness, a beacon of hope for clearer days which have come."

KODACHROME BY DAVID BEAL, BLACK STAR © N.G.S.

MALTA

AT THE CROSSROADS of the Mediterranean, the islands of the Maltese nation—Malta, Gozo, and Comino—have played a strategic role for centuries. Pawns of contending powers, they did not become a sovereign nation within the British Commonwealth until 1964. The islands today hold almost 2,700 persons per square mile, making Malta one of Europe's most crowded countries.

AREA: 122 sq. mi. **POPULATION:** 321,000. **GOVERNMENT:** Constitutional monarchy. **LANGUAGE:** Maltese, English (the official second language). **RELIGION:** Almost wholly Roman Catholic. **ECONOMY:** Tourism, shipbuilding and ship repair, light industries, agriculture, fishing. **MAJOR CITIES:** Valletta, capital, 15,100; Sliema, resort and residential center, 21,000; Mdina, old capital, 1,000; Victoria, capital of Gozo, 5,500.

The Maltese archipelago consists of Malta, Gozo, Comino, and a few uninhabited islets, a total land area of 122 square miles (map, page 857). The population is vast for the constricted space—about 322,000—a density exceeded among Europe's nations only by Monaco and Vatican City.

It is this crowding, perhaps, that makes the Maltese so congenial. Good manners and courtesy become very important when people have little living space. As my old friend Dr. Joseph Spiteri, Minister of Trade, Industry, and Agriculture in Malta's Nationalist Party Government, put it: "We have had to learn to live together peacefully. We are so many in such a little space, there is no room for friction. Our privacy is in our homes. But once outside them, we don't value privacy as you British do."

Warm Welcome on a Musical Bus

I was reminded of his remark as my wife and I caught a bus one night to visit some friends in Paola, a few miles outside Valletta. We could hear the bus coming a long way off, a steady honking, then a trumpet-like blare from another horn. Over and above that was the sound of a band.

As we climbed aboard, we saw that one of Malta's numerous band clubs was having a practice session in the back seats. Inside was standing room only: babies galore, a man in front of us with some rabbits in a sack, another with an indignant hen in his arms. A bevy of nuns in tall starched headdresses made passage down the aisle practically impossible. But everyone was smiling. I felt at once as if I had been absorbed into a huge, noisy family party, an impression that was reinforced when an old man with a leathery face gripped my shoulder and shouted, "Welcome!" Perhaps he knew and recognized me, though I thought him a stranger.

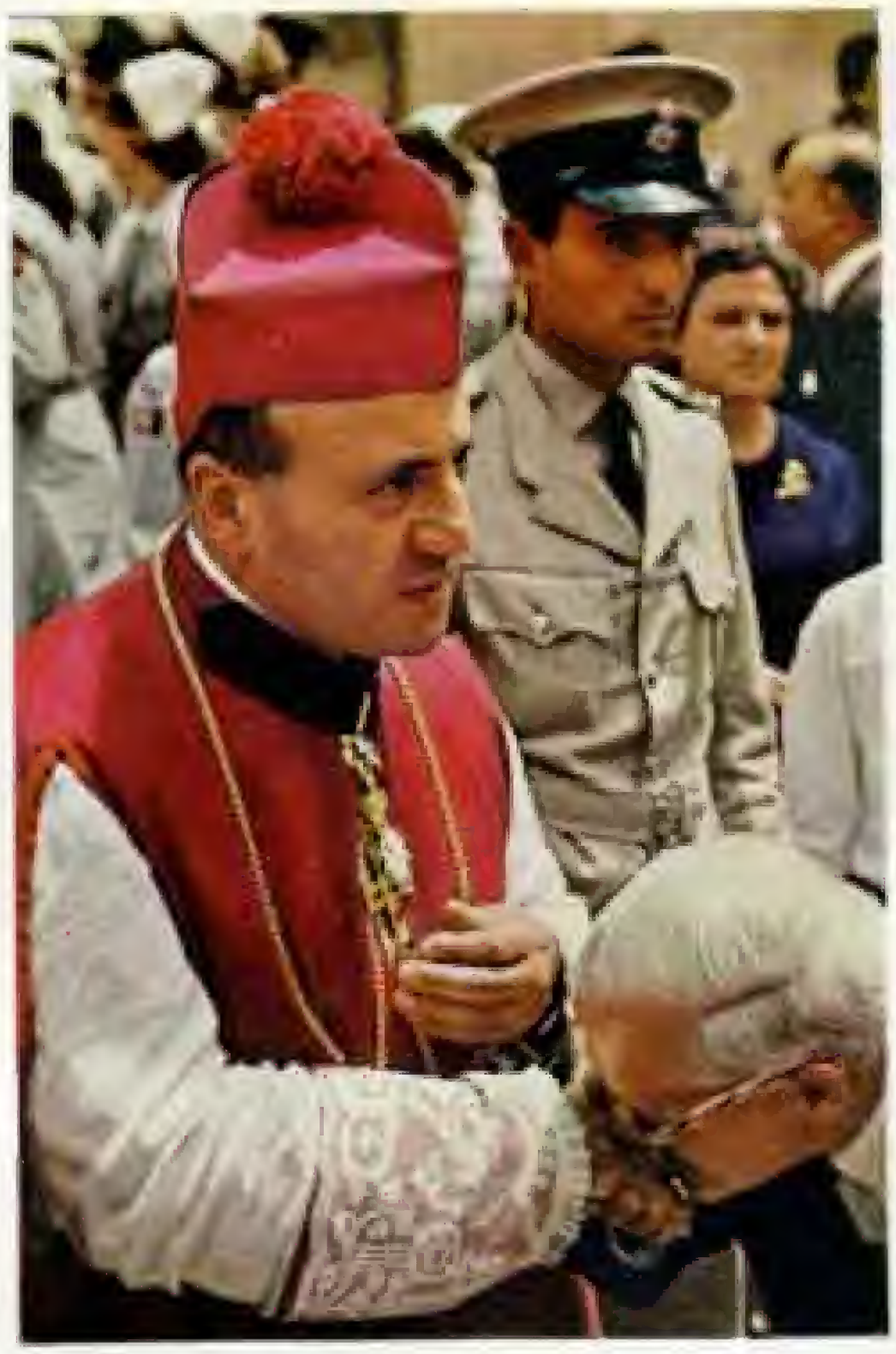
Among the friendliest people in the Mediterranean, the Maltese have a phenomenal memory for faces, names, and relationships. Often, as I revisited different parts of the islands, people came up to extend a hand and to ask after my wife or my son—and by name, though some had not seen me for years.

At Paola our friends John and Mary Tabone beamed as they ushered us into their house. They led us through the tiled, high-ceilinged hallway, where family photographs hung along the wall, into the bright living-dining room. Mary had the table lavishly spread—enough, it seemed, for an army.

(Continued on page 864)

Airy blanket of wool takes shape as a crochet hook flies in the flower-brightened courtyard of a Qrendi home. Malta has long been famed for its cloth-making. Greek historian Diodorus Siculus, in the first century B.C., wrote of the variety of artisans, the most important being those who "weave linen, which is remarkably sheer and soft."

Carefree smiles brighten a sidewalk in Valletta. In primary school, children learn Maltese and English; in high school most of them study two other European languages. Warmhearted and courteous, they delight in trying out their linguistic skills on visitors.



Age of chivalry lives again in Valletta when the Knights of Malta return each June from other lands for the Feast of St. John at St. John's Co-Cathedral. Bishop Emmanuel Gerada (above) greets celebrants of the High Mass in 1968. Maltese historian Sir Hannibal Scicluna (below) wears badges of the order, his wife Lady Margaret, three miniature decorations of her own.

Founded in Jerusalem before the Crusades to protect pilgrims, the knightly order turned Malta into a Christian fortress against the Turks. By withstanding the Great Siege of 1565, the knights checked the conquests of Sultan Suleiman I. They adorned St. John's with donated riches, among them the church's Flemish tapestries.

Wedded to water, the Maltese have ever taken sustenance from the sea. Here in the harbor of Marsaxlokk, Malta's principal fishing village, boatmen berth gaily painted *luzzijiet* and *fregatine*. Tomorrow they will sail out again to search the waters of the archipelago for mackerel and dolphin. Recently, to modernize the industry, the harbor was dredged to accommodate a fleet of deep-sea trawlers. The ancient Phoeni-

cians moored their far-ranging galleys in Malta's harbors, calling the island Maleth, the "hiding place." The Maltese claim descent from these venturesome sailors of the Mediterranean, who colonized Malta from Carthage. Phoenician was once spoken on the islands, but no one knows how long it prevailed. Today's Maltese language is an Arabic dialect, flavored by Italian, Spanish, French, and English words.

"I'm cooking you some typical Maltese dishes," she said.

They proved to be timpana pie (a baked macaroni dish), followed by a meat pie topped with potatoes. Mary kept filling our plates until we had to beg for mercy.

Many Languages Flavor Maltese Speech

As we sat over our coffee, John's nephew, Dr. Herbert Lenicker, and his wife joined us, and we got to talking about the ways Malta and England are alike or different.

"Your English language is a strong bond," the doctor said. "We speak it to our children. In the schools, most subjects are taught in English. It is our lingua franca.

"But Maltese is our very own language," he went on. "It is basically a Semitic tongue, the only one written in the Latin alphabet. It stems from the 200 years of Arab occupation that began in the ninth century A.D. There are words of Italian, Spanish, French, and English origin in it now, of course. And pronunciation differs from district to district."

Later, strolling in Valletta one evening, I stopped to see Alfred Privitera, whom I've known since 1951. Alfred keeps a small bar opening on St. John's Steps, one of the narrow alleys that run off Valletta's main streets like ribs from a backbone.

"And how do you find Valletta now?" he asked with a broad, welcoming smile.

"The same as ever," I was glad to say—"Still my favorite city."

I was not exaggerating. Valletta is a triumph of 16th- to 18th-century architecture and town planning. Benjamin Disraeli wrote that it "is one of the most beautiful, for its architecture and the splendour of its streets, that I know." Sir Walter Scott, on a visit in 1831, praised its dreamlike quality, and William Makepeace Thackeray described it as "a royal stately old town."

I joined Alfred at a table in his barrel-vaulted bar, where he sits surrounded by caged canaries and parakeets. Through the open door, we could see the streets becoming thronged. It was

Bone-bruising jolts test the stamina of men and mounts during a Malta Polo Club match. Prince Philip played here while serving as an officer with the British fleet in 1949-51. The Maltese treasure memories of the Queen of Malta, Elizabeth II. As a young princess and bride, she paid several extended visits to the island. Her personal message for the independence celebrations recalled "happy days we spent living among you."

near sunset, the hour of the *passiggata*—the typically Latin evening stroll in Valletta (page 874). We moved outside to watch.

Then rockets began to leap up from the far side of Grand Harbour, spangling the darkening sky above the grim 16th-century ramparts of Fort St. Angelo with silver, red, green, and blue. The lights of *dghajjes* (pronounced dieyes)—those extraordinary Maltese rowing boats resembling gondolas but more beautiful, for they are elaborately carved and painted—gleamed like glowworms on the water. At the top of their flight, the rockets exploded in a deafening succession of bangs.

"A *festa*," Alfred explained, though he did not know which of the island's many saints was being honored that day. Malta, as its people like to tell you, is "more Catholic than the Pope," with almost 100 percent of the population in the faith.

"It sounds rather like the war again," I said.

Both of us remembered those days when the Luftwaffe roared down from Sicily, and when the bangs were 500-pound bombs blasting the old limestone houses to pieces (page 856). Only because Malta is largely solid limestone did it survive those poundings. Deep in the rock, in tunnels quarried by the British (though many of them were started by the Knights of St. John in the 16th century), the people found some of the safest air-raid shelters in the world.

It was a ghastly business, nonetheless. When our convoy arrived in 1942, the Maltese had consumed all their grain and were eating prickly-pear leaves. The fruit had been devoured long before it was ripe.

Alfred recalled more nostalgically the prewar days when the British maintained a large Mediterranean fleet, and his bar was always packed with sailors.

"Where are the ships now?" he asked. "I remember when there were as many as a dozen big warships in the harbor."

"Yes," I said, "but the world changes."

"The world grows downward like a cow's tail," Alfred said cryptically.

In a shadow-dappled arbor, Sam and Angela Simonds relax outside their 300-year-old home, Palazzo Castro, in Naxxar. Mrs. Simonds, the daughter of Prime Minister Giorgio Borg Olivier, and her husband, a company director and real estate developer, support local efforts to establish new industries. Malta also looks to the rapid growth of tourism to fill the economic gap left by the phase-out of the British naval garrison.

He spoke in that sing-song cadence that is distinctive of Malta. In his accent lay the history of his island—Phoenician, Greek, Roman, Arabic, Norman, Spanish, Italian, French, and finally British. But behind this known history lie long centuries of prehistory, for Malta was first inhabited some 6,000 years ago. About 2,800 years before Christ a Copper Age people began building the islands' magnificent stone temples, where ancestor and fertility cults were served by priests and priestesses. Here the modern visitor may still pay his tribute of admiration (page 869).

Malta is the island, I like to believe, that Homer described as Calypso's Isle, where the "divine" seductress detained Odysseus for seven years.* "The navel of the sea," Homer called it. The position of the Maltese archipelago, 50 miles south of Sicily and 220 miles north of Tripoli in Africa, has long made it a key point for any power that would control the Mediterranean (map, page 857). Phoenicians, Greeks, Carthaginians, and Romans recognized the importance of this and of

*For the National Geographic Society's book *Greece and Rome: Builders of Our World*, author Ernle Bradford traced the wanderings of Odysseus in the Mediterranean. He concluded that Calypso's home almost certainly was one of the Maltese islands.

Malta's wonderful natural harbors: Marsamxett on one side of Valletta, Grand Harbour on the other (pages 852-3). So did the Arabs, who occupied the island from A.D. 870, and the Normans, who conquered Malta in 1090.

The archipelago's grandest and most turbulent period arrived with the Knights of St. John of Jerusalem in 1530. Driven out of their old headquarters in Rhodes by the Turks, these militant Crusaders, the famed order of Hospitallers, were given the Maltese islands as their new home by Charles V, Emperor of the Holy Roman Empire and King of Spain.

The original deed of gift to the knights can be seen to this day in the Royal Malta Library. Dr. Vincent Depasquale, the librarian, showed me the priceless document, pointing out that the careful Charles had technically only "rented" the islands to the knights.

"They must pay the emperor 'an annual fee of one falcon,'" Dr. Depasquale read to me. "Apparently Maltese falcons were highly prized in those days. We know that falconry was a main diversion of the knights. Then as now, Malta lay in the path of birds migrating between Europe and North Africa. Unfortunately the art of falconry no longer exists here—the falcons are gone, and the shotgun has taken their place."

In his renowned mystery novel, *The Maltese Falcon*, Dashiell Hammett wove an intriguing legend around the first falcon paid to Charles. He speculated that, to show their deep gratitude to the emperor, the rich knights commanded that a foot-high, solid-gold falcon encrusted with precious gems be fashioned. This treasure, Hammett's story goes, was on its way to Charles when it fell into the hands of the Moslem pirate Barbarossa. For centuries it flitted elusively in and out of history, but neither Hammett's wily private eye, Sam Spade, nor anyone else ever laid hands on it in modern times.

The Knights of St. John were dedicated to the overthrow of Islam. From Malta they raided the Ottoman Empire and its shipping in the Mediterranean. This so enraged Sultan Suleiman the Magnificent that in 1565 he sent a vast army and armada against them —more than 40,000 men and 200 ships.

Led and inspired by a great Christian soldier, Jean Parisot de la Valette, Grand Master of the Order of St. John, the Maltese refused to capitulate. The four-month siege was one of the bloodiest in history. Of 9,000 knights, men-at-arms, and Maltese soldiers, fewer than 1,000 survived unwounded when a relief force arrived from Sicily. The Moslems withdrew, having lost more than half their men.

Neat as sticks of butter: From the base of a 100-foot-high cliff wall near Qrendi, a master quarryman slices limestone blocks in a standard size used for centuries. With vertical cuts already made, he adjusts his power saw to sever the blocks horizontally from the quarry. Soft when first cut, the stone hardens on exposure. Malta's chief building material, limestone everywhere underlies the islands' scant topsoil.

It was a major defeat for the Turks, and they never again attempted to penetrate the western Mediterranean.

In 1566, after the siege, the grand master began building the city of Valletta on a rocky headland. As Malta's stronghold and capital, Valletta blossomed with magnificent buildings during two centuries of prosperity under the knights. Designed by Maltese, Spanish, and Italian architects, the city's great edifices reflect the high tide of European baroque decoration. In few other places in the world do so many imposing palaces, churches, and public buildings crowd so small an area.

The knights ruled Malta until 1798, when Napoleon, aided by a fifth column of French knights within the order, took the island with hardly a shot fired. The populace revolted, however, and with the aid of the British Navy, evicted the French. The Treaty of Paris confirmed Malta's choice of British protection, an event commemorated by a Latin inscription in Valletta's Palace Square, "To Great and Unconquered Britain, the Love of the Maltese and the Voice of Europe Confirms These Islands. A.D. 1814."

Although the knights left Malta during the Napoleonic occupation, never to return, their order is still active. In many countries they continue to administer hospitals and charities.

Malta and its out islands remained under British protection until 1964, when they gained independence but chose to remain within the Commonwealth. As Maltese businessman Antonio Cassar remarked to me when we were watching the independence celebrations, "It is right that the Duke of Edinburgh should be here to represent Britain [page 857]. He was here in the Navy for two years when the Queen was Princess Elizabeth, and for several months she lived on the island just like any other officer's wife. And don't forget—she is still Queen of Malta, even though we've become an independent nation."

Imprint of the past, mysterious double tracks survive near Naxxar Gap. Archeologists theorize that the ruts were worn in prehistoric times by vehicles similar to the American Indians' travois. Maltese scholar Sir Themistocles Zammit believed they were used to haul soil to form terraces on the stony slopes.

Master stonemasons shaped the Tarxien temples, largest of 30 such sites on the islands, as early as 3400 B.C. These American tourists stand where Maltese once worshiped a mother goddess. The massive bowl, hollowed from a single block of stone, probably held ceremonial water.

Eye of Horus Survives 3,000 Years

When next I went back to St. Paul's Bay, the gregale was still blowing, so my fishing trip with Didi Altair was off. I sat and watched him as he touched up the paint on his boat.

It was blue, green, and red, with a gold rubbing strake. On either bow it had a meticulously painted eye, with a black eyebrow carved above it. This relic of the ancient world goes as far back as the Egyptians, who painted the eye of the falcon god Horus on the bows of Nile vessels as a talisman. Later those master mariners, the Phoenicians,

adopted it and brought it to Malta, when the island was a trading and stopping point on their Mediterranean voyages.

Didi saw me looking at the eyes. "You like them? The youngsters don't put them on any more. Boats in Malta have always had eyes—I don't know why. To see their way, perhaps." He laughed.

So great is the force of tradition in this island that he had never queried why the boats have eyes on them. Generations of fishermen, son copying father, had perpetuated the Eye of Horus into the 20th century. Yet, even as we sat chatting, the midday jet flight from London was whining into Luqa airport, and automobile traffic thundered down the small road behind us.

"Too many cars!" Didi grimaced. "The road is too small. Malta was made for donkeys and carts, not for all this traffic."

The island has more cars per square mile than any nearby Mediterranean country. But despite this sign of well-being, Malta needs to bridge the economic gap opened by independence and the departure of the British. Looking round St. Pauls Bay, I could see that the problem was being tackled imaginatively. New hotels stood along the rocky coast, and holiday villas clung to ledges. Powerboats, water-skiers, swimmers, and skin-divers competed for space, and bright umbrellas and brown bodies dotted beaches like confetti.

Tourism is creating a new prosperity. In 1965, the islands had 48,000 visitors; in 1968, more than 136,000. The archipelago now has some 110 hotels.

Malta attracts permanent foreign residents as well as tourists, for its low income tax is alluring. The climate is almost as appealing. Temperature in winter averages 55° F., and in summer ranges between 75° and 90°.

Malta is best in spring. In summer it turns parched and sun baked, but in spring the acres of flowering clover are purple against the backdrop of the sea. Every nook and cranny bursts with color, the red soil fecund with crops and wild flowers. On the flat roofs of the houses pumpkins ripen in the sun.

Ten-mile Trip Becomes an Expedition

Island food offers a further inducement to visitors. One day my wife and I lunched in a new restaurant overlooking St. Pauls Bay. We started with *lampuki*, a firm-fleshed local fish, followed by baked macaroni pie and *fraises des bois*, tiny wild strawberries in cream, delicious Maltese bread, and sheep's-milk cheese ripened in black pepper and vinegar. The cost of the meal was about $2 each, and a bottle of good white Maltese wine added only about 25 cents.

Sometimes when I lunch with Maltese friends we eat *bebbux* (beb-bush)—cooked snails served with a peppery sauce. Other island specialties are fried or stewed rabbit, and widow's soup, made with eggs, vegetables, cheese, and spaghetti.

That afternoon we took the taxi of Salvo Scerri, a Valettan who speaks good English, across the island to the farming town of Żurrieq and its nearby fishing hamlet, perched above the narrow inlet of Wied iż Żurrieq, where some of Salvo's relatives lived. Although the trip was less than 10 miles as the crow

Once again besieged, Malta braces for a welcome invasion by sun-seekers. Shipwrecked on the island in A.D. 60, St. Paul received "no little kindness" (Acts 28:2). Nineteen centuries later, the government has begun capitalizing on Malta's reputation for hospitality, introducing it to the world as a new international holiday resort. Yachts festoon the harbor, and seaside villas ribbon the shores of St. Pauls Bay (left), a paradise for water-skiers. A short drive down the coast, sunbathers (right) scatter across a limestone beach near Sliema Point.

Tied to tradition, a farmer turns his potato field with a homemade *mohriet*, or plow, within sight of the parish church of Żurrieq. Malta raises far less food than it needs; 80 percent of the supply must be imported.

flies, the road wound through so many small villages and walled fields that it took an hour to get there. Salvo confessed he had not been to see his relatives for two years. People who live on small islands create their own frame of reference; a 10-mile journey becomes a major expedition.

I told Salvo I had met an old couple on a farm outside Mosta who had never been to the sea—and yet Mosta is only three miles from St. Pauls Bay.

"Do you remember the man who farms in the valley behind Mellieha?" Salvo asked. "He told me he came down to St. Pauls Bay last Christmas. He's a man of 50, and that was only the second time he had been to the sea."

At Wied iż Żurrieq, I got talking to a farmer friend of Salvo's. I remarked on the minute size of the fields and on the way they were protected by stone walls (right).

"If they weren't," he said, "the earth would wash away in the winter rains. And we don't have enough of it as it is."

In the two and a half centuries of rule by the Knights of St. John, many barren acres

in the Maltese islands came under the plow, and wheat, cotton, and vines displaced the scrub and herbs from which bees had sipped for thousands of years. Today Malta's Fertile Soil Act decrees that whenever earth is moved for building or road making, all usable soil must be redistributed to farms.

Lizards Live Where Bombs Still Fall

While Salvo sat talking with his fishermen friends, I hired a boat to take me out to the Blue Grotto. About half a mile from Wied iż Żurrieq, this natural cave is the product of centuries of wave erosion on the steep limestone cliffs. Before entering, we passed under a huge natural arch—a muscled arm of rock that looked as though it were supporting the whole weight of the island.

"If it should fall!" I said apprehensively.

The boatman laughed, and his young son said reassuringly, "But it has never fallen!"

Inside the cave the water beneath our keel took on a deep-blue luminosity, with sponges and corals on the sea bed glowing pink, white, and green. At its far end the grotto was pitch dark. Samuel Taylor Coleridge, who lived in Malta for more than a year in 1804 and 1805, described just such a place in his dreamlike poem "Kubla Khan":

> *Through caverns measureless to man*
> *Down to a sunless sea.*

As we emerged from the cave, the boatman exclaimed "*Fee-ifla!*" He pointed to a rocky, flat-topped islet about three miles off. Filfla has long served as a gunnery target and is still used as such by British and U.S. warships and the RAF.

But Filfla is more than a target; it is the home of an unusual red-spotted green lizard,

Scenting the spring air, winter wheat falls to the harvester. Population pressures push young farmers to emigrate, mainly to Australia and the United Kingdom, in search of economic opportunity. On the horizon at left rises Mdina, Malta's capital in Roman times. A fortified city of palaces and churches, Mdina was eclipsed by the building of Valletta. 873


Mars
E L E
C T
SINGER
CISI

Lacerta filfolaensis filfolaensis. Occasionally specimens turn up with double or triple tails. The almost certain explanation is that minute shell splinters nick these lizards, and new tails grow out of the wounds.

That evening, when I mentioned seeing Filfla to Sir Hannibal Scicluna, the archipelago's foremost historian (page 861), he told me of an even more curious island off Gozo.

"You know Cala Dwejra?" he asked. "It's the small bay sealed off almost entirely from the sea by an islet called Fungus Rock. Cala Dwejra means 'sheltered harbor,' and the rock's name comes from a black lichen that grows there—the Maltese fungus. It was famous as a styptic for dressing wounds and was a perquisite of the grand master. People came from all over Europe to be treated with it in the knights' hospital in Valletta."

"How did they get it off the rock?" I asked. "I've sailed past it, and Fungus Rock looks inaccessible."

Sir Hannibal smiled. "Have a look in the National Museum when you're next in Valletta. There's an old water color that tells the story."

I looked at the painting next day. It showed a ropeway suspended between the cliffs of Cala Dwejra and Fungus Rock. The fungus gatherers sat in a box and hauled themselves across on a primitive cableway, with the sea more than a hundred feet below them. I was glad to think the chemists' shops in modern Malta were more reliably serviced.

Islands Dotted With Ancient Shrines

I was distracted from Fungus Rock by the museum's world-famous Copper Age sculpture. Most fascinating of all were the 4,500-year-old statuettes of the earth mother, the fertility goddess who was worshiped on the islands. No one can call these obese and steatopygous figures beautiful, but they have a strange power about them. They were excavated from the prehistoric shrines in which the islands abound (page 869).

Malta and Gozo have dozens of Neolithic, Copper Age, and Bronze Age sites. Two of the most interesting temples are Hagar Qim and Mnajdra on Malta's southwest coast. They were built prior to 2000 B.C. by a people who perhaps came from Sicily and Italy. My wife and I went to see the ruins one evening just before sunset, and as the sun dipped into the empty Mediterranean behind the huge stone structures, it was easy to understand why ancient man had raised his shrines in this beautiful place.

Sounding Chamber for an Oracle

Next day we visited the Hypogeum (underground temple) in Paola, discovered in 1902 by a builder excavating for house foundations. Cunningly surmising that if he declared his find at once, he would get no compensation from the government, the builder waited until he had completed his houses to tell the authorities. He then asked a sky-high price for the buildings and the land.

His stratagem worked, for the Hypogeum is priceless—the only known underground Copper Age temple in the world. Hewn out of solid rock to a maximum depth of 40 feet, and encompassing 1,600 square feet on three levels, it holds an oracular shrine and intricate chambers and tombs.

"Listen!" the museum caretaker whispered as we stood in the huge vaulted chamber. He went to a distant wall and spoke into a small opening. Immediately his voice boomed all around me. Magnified and rendered unhuman by the curved ceiling, the voice seemed to come from another world.

"That was how the worshipers heard the voice of the oracle," he explained. "Imagine how they must have felt, standing here in the dark or with just a small lamp!"

In another part of the Hypogeum he showed me the innermost shrine, known as the Holy of Holies. It was near here that the famous statuette of the dreaming priestess, now in the National Museum, was discovered.

"The priestess probably slept here," he said. "In her dreams, inspired by the great deity she served, she found the answers to worshipers' questions."

The Hypogeum is the most unusual place in Malta, but my favorite is the ancient city of Mdina (Arabic *medina*, the city). The island's capital beginning about 200 B.C., it became a

Automobiles give way to promenaders on Kingsway between 6 and 9 each evening, when traffic must detour around Valletta's main shopping street. Although the old formalities of chaperone, curfew, and black cravat have passed, the Maltese still live up to a popular saying about their city: "Built by gentlemen, for gentlemen." They stroll slowly, ever ready to stop for a handshake or to introduce a friend to a friend.

backwater when the knights built the new capital of Valletta.

Mdina is a natural fortress, rising from a rocky hill (pages 872-3), from which one sees the whole of Malta spread like a map below. Impregnable on three sides, it is protected on the fourth by a high wall and a dry moat.

The old city has scarcely changed since the 17th century. Frozen in time, Mdina is filled with old palaces and churches, including the cathedral built on the tradition-hallowed site of the house where St. Paul instituted Christian worship among the converted Maltese.

Even Mdina's working people occupy medieval houses, built by the Normans in the 12th century. The inhabitants seem to have been influenced by the city's solemnity. No noisy Mediterranean cafes disturb Mdina's repose, and no advertisements or posters are allowed in its precincts. Only a few street lamps feebly illuminate the façades of palaces with Renaissance balconies. Wandering down its streets at night, one realizes why the Maltese call it the "silent city."

Thrifty Gozitans: the "Scotsmen of Our Islands"

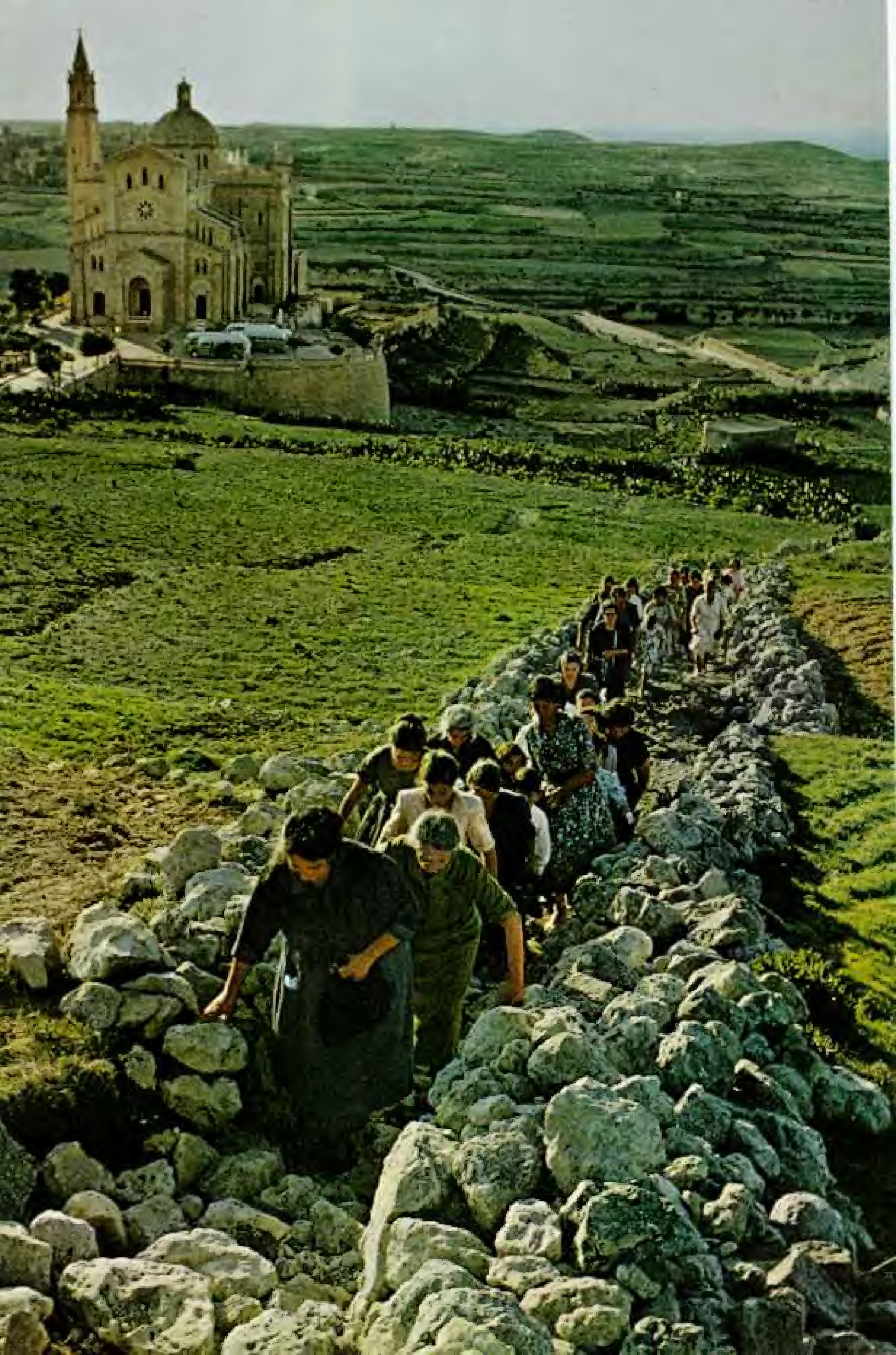
Outside Mdina, however, Malta is a noisy island. Fireworks bang, church bells clang, dogs bark, cocks crow, and motorists use their horns like unmusical instruments. My wife and I decided we wanted a few days' peace and quiet—and I knew that Malta's sister island, Gozo, had this in plenty.

We took passage in a 40-knot hydrofoil ferry which then linked Valletta with Gozo. In the middle of the three-mile-wide channel, we stopped to land passengers and stores on Comino. This square mile of almost barren rock was once inhabited chiefly by goats. Now two modern hotels rise among the aromatic cumin-seed plants, from which Comino gets its name. Amid today's skin-divers, spear fishermen, and water-skiers, only a solitary 17th-century watchtower recalls that Comino was once an early-warning post for spotting roving Barbary pirates.

At Gozo we dropped anchor in the harbor of Mġarr, where the ranks of big painted fishing boats spoke of an earlier century. The design of these 40-foot craft can be traced to the far-ranging Maltese galleys of the 16th and 17th centuries.

Gozo has a population of 26,000, with 5,500 in the capital, Victoria. To the Maltese, the Gozitans are the "Scotsmen of our islands," for they have long been renowned for thrift, industry, and plain speaking, as well as for the way they rise by patient industry to the top positions in government, church, and business. At home they farm with persistent energy, and their island, more fertile than Malta, is intensively cultivated. They export olives, citrus fruits, figs, melons, and vegetables to Valletta's central market. As fishermen, they account for much of the catch around the archipelago.

Arduous path of faith leads to Ta' Pinu Church on the island of Gozo. Here, in 1883, a spinster peasant reported that the Virgin Mary had spoken to her. The news spread, and pilgrims swarmed to the site. A tiny chapel grew into this cathedral-size stone church, consecrated in 1931. A line of the devout climbs to a hilltop cross commemorating the miracle. To the Maltese, their church is a second home; the islanders support more than 350 houses of worship.



Fantasies spring to life when carnival erupts in Valletta. During a parade along Kingsway, a cigar-chomping pony prances on a children's float entitled "Wild West Centaurs." Laughing youngsters at right, sporting noisemakers and polka-dot diving costumes, watch for wily underwater creatures from a float called "Hunting for Sea Horses." The four-day pre-Lenten

The Gozitans have retained the hardihood of their ancestors: the antique virtues of frugal living, honesty, and courage are part of their everyday life. Sitting over a coffee in It-Tokk, Victoria's marketplace, I remarked on this to the parish priest of St. Augustine's Church.

"Of course," he said, "my people are steadfast and enduring—their life demands it."

Half a dozen of his people, with healthy brown faces and shy humorous eyes, were around us listening with smiling curiosity to our conversation, for most spoke only Maltese. When my wife and I got up to leave, one of them shook my hand and haltingly produced his only English words: "Goodbye! Good health! Come back!" It was not, I felt, just a conventional formula.

Any regret I may have had for leaving behind the simplicity of Gozo I soon forgot in my pleasure at walking again through Valletta's narrow streets and climbing its broad flights of steps (pages 854-5). I admired the profusion of balconies and the wrought-iron and brass half gates outside the front doors of the houses. In the past, when goats provided Valletta with milk and were driven down the streets in flocks, the half gates allowed the residents to open their main front doors for light and air without letting the goats in to eat the furnishings.

"I'd like to have seen all the goats walking up and down the city's steps," I said to Alfred Privitera. It was evening, and once again he and I were sitting in his little bar.

festival begins with a dance, the *parada*, that relates a victory for Christendom, the defeat of the Turks in 1565. Its hero, the Grand Master La Valette, placed his stamp of approval on carnival by allowing masks during a celebration in 1560. Ever since, parades, fancy-dress balls, and carefree singing replace businesslike pursuits during the midwinter revel.

"I remember them as a boy," Alfred said. "They was too many in the city. It's better since the British started the dairy farms and we have cow's milk. True, they was a lovely sight, hundreds at a time, with all their bells going tinkle-tonkle. But—" he wrinkled his nose—"goodness, they was smelly!"

"Come Make a Palace Your Home"

"*Sahha*—health," I said in farewell to Alfred, for we were leaving Valletta next day.

"Come back here soon with your missis and your boy," he said, "and make your home here. Listen, I'll show you a palace you can rent for 40 pounds a month! Think of it—a palace, built 200 years ago, with orange trees and a fountain in the courtyard! There are painted ceilings," he added, "and goldfish in the fountain, and you could ride a horse up the main staircase!"

We were tempted, but the palace seemed a bit too grand for just the three of us. So instead we bought a little house and refurbished it. We've been living here a year and a half now, at Kalkara on Grand Harbour.

Standing on our balcony the other night, my wife and I looked contentedly across a beautiful quiet creek to Fort St. Angelo on the Vittoriosa peninsula. Pleasure craft idled on the shining black water, and the moon sailed a cloudless sky. It was a far remove from the other Malta I had first known when the bombs were falling 27 years before. I was happy to call it home. THE END

- ALASKA
- THE CIVIL WAR
- DISCOVERING MAN'S PAST IN THE AMERICAS
- EXPLORING THE AMAZON

Four exciting new Geographic books

By GILBERT M. GROSVENOR
Associate Editor

Shy smile peeks from behind a caribou-skin mask, a specialty of Eskimos at Anaktuvuk Pass in Alaska's Brooks Range.

Winter's icy edge frosts the face of Sitka, onetime capital of Russian North America. Bern Keating, author of *Alaska*—first of the National Geographic Society's four Special Publications for 1969-70—found descendants of early Russian settlers still living in the 49th State. Mr. Keating's richly illustrated book will also take you to magnificent wildlife preserves and to cities newly rebuilt after the 1964 earthquake, to quiet Indian villages and throbbing oil fields, and to wilderness frontiers that wait to be conquered.

[illegible] BY GILBERT M. GROSVENOR (ABOVE) AND WINFIELD PARKS © N.G.S.

ONCE I TRIED to see all of Alaska during a two-week vacation. My failure was as big as our 49th State.

But so was my pleasure. I thoroughly enjoyed camping in the Alaska wilderness, catching speckled trout and salmon, and hiking in a land where the loudest noise was my own spongy footstep upon soft tundra.

For all the progress man has made, he still has not conquered nature in Alaska, nor have the comforts of burgeoning cities wiped out the pioneering spirit of the individual.

I sought the Eskimos and trappers, the few surviving sourdoughs and pioneers I had long read about. But I saw them only in the round-the-clock daylight of summer. I yearned to join their daring walrus hunts and their trapping expeditions in the snowy forest.

One evening, as my companions and I huddled around a dying fire, we realized how much of Alaska had eluded us. We still knew so little about our northern frontier. Why? We simply needed more time, a cycle of seasons, to live the Alaska adventure.

Finally, just the other day in my office, I met Alaska in a fresh, more intensive way, when I reviewed color photographs and Bern Keating's manuscript for the new National Geographic Society book *Alaska*. Here was the entire great state, from winter's midday dusk to endless summer light, from the oil-rich north to the forbidding Aleutians. I saw Mount McKinley, which hid in a misty shroud when I visited Alaska. The Eskimos came to life in brilliant action. Through this book, I could at last participate in the exploration of all Alaska.

In fact, that active verb "participate" catches the spirit of all four books the National Geographic Society presents in its 1969-70 Special Publications series. Some 10,000 Society members were consulted by our editors in planning the series. Thanks to their comments, we can offer books about "places we're planning to visit" and "subjects our youngsters are studying in school" and "topics I've always wanted to know more about."

Just as members have participated in choosing these books, so each reader will participate in the adventure of each subject.

Take, for example, *The Civil War*. All of us acquire strong personal impressions of that struggle when we visit its monumented shrines. My own favorite has been Gettysburg; yet after reading the book manuscript, I feel differently about other battlefields. Robert Paul Jordan, who wrote NATIONAL GEOGRAPHIC's moving account of Gettysburg and Vicksburg in the

July 1963 issue, now makes the entire Civil War a personal experience.

"The Civil War lives on in its people, famous and obscure alike, as well as in its places," Mr. Jordan told me. "The North's tenacious Ulysses S. Grant was a man who could order his own surgeon to help a sick Confederate; the South's brilliant Robert E. Lee believed neither in slavery nor secession.

"There was the little Rebel spitfire who crowned a Yankee with a crock of buttermilk for insisting she pay homage to the Stars and Stripes. And the young Ohio infantryman who wrote to his mother from a Georgia field, 'I think that if I ever get home again I will appreciate religious things more.' That soldier was my great-uncle, and he never did get home again."

Bob Jordan recaptures the conflict's flash and flame at ocean and river ports where the vital but little-appreciated sea war blazed. Deep in Mississippi he unearths fresh signs of old fury: rifle balls mashed flat from the force of close-range impact.

Remember the thrill of finding your first arrowhead? You'll feel the same exhilaration as you turn to the third volume in this 1969-70 series: *Discovering Man's Past in the Americas*. George E. Stuart brings the story alive, and well he might. Members will recall the fascinating maps researched and compiled by this young anthropologist-cartographer—*Nile Valley, Land of the Pharaohs* and *Middle America, Land of the Feathered Serpent*.

Mrs. Stuart, an expert in ceramic restoration, has always shared her husband's enthusiasm for ancient peoples. The Stuarts raised their first son in Yucatán, among the ruined cities of the Maya. Now four Stuart children thrive on field trips that span both the American continents and their priceless heritage—more than 12,000 years of human achievement.

From "Uncle Tom's Cabin" to Appomattox, the Civil War unfolds in the second of the Society's new Special Publications. Robert Paul Jordan writes of the four decades before the war, then follows with the conflict itself—to the last shot. You will find the great battles and little-known aspects—no fighting in New Mexico's mountains, the first successful military use of a submarine, and half-forgotten infantry attacks as fearful as famed Pickett's Charge at Gettysburg.

In this painting, the First Battalion of the Union's 13th U. S. Infantry tests Confederate lines at Vicksburg. The battalion lost 43 percent of its men in the assault.

Enlarged from a painting by C. Charles Waterhouse, of the Military Department of the Army

At Becan, deep in Mexico's State of Campeche, the Stuarts work with archeologist E. Wyllys Andrews, probing the ruins of fabulous Maya temples and fallen monuments. Only now being explored, this massive ceremonial center and others nearby promise to yield a wealth of information about one of ancient America's most astonishing civilizations.

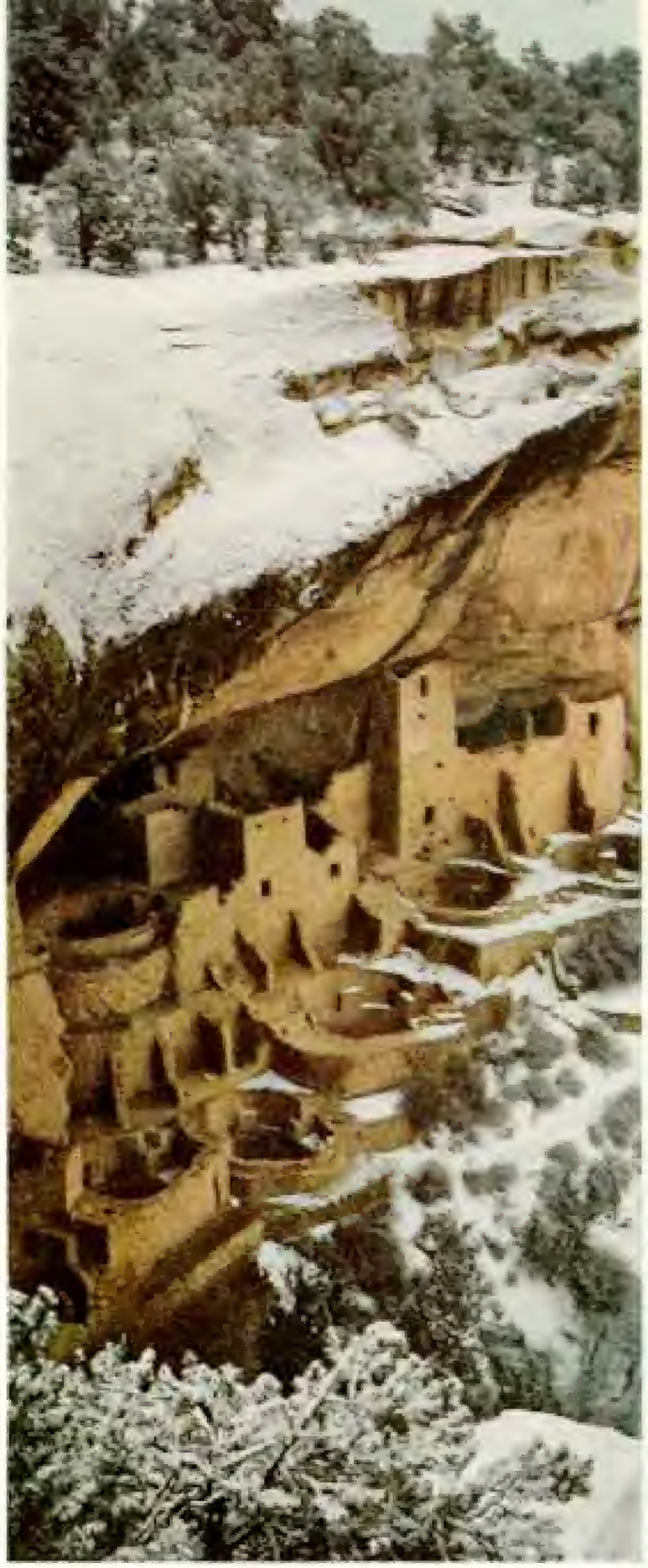
George Stuart tells of other great discoveries archeologists have made—and are still making. We see bands of nomadic hunters fighting for survival in North America's plains and woodlands. We follow the rise of great civilizations—Maya, Aztec, Inca. We learn how archeologists use science and intuition to unlock secrets hidden for centuries. Lavish illustrations show us the splendor of each great civilization.

The fourth new book, *Exploring the Amazon*, comes directly from members' suggestions. "Give us more articles by that adventuresome couple, Frank and Helen Schreider," reads a typical letter. The Schreiders have traveled by amphibious jeep down the Ganges River and through Indonesia's chain of islands. They have driven along the Great Rift Valley from the Holy Land into Africa, and followed Alexander the Great's trail of conquest. Now they are completing a new adventure—a 3,000-mile journey down the length of earth's greatest river.

To get on the closest possible terms with their subject, they launched themselves on it by dugout canoe.

"Remember, I'm not saying you can't do it," an old Amazon hand in Iquitos, Peru, had told Helen, "but I am saying you'll look back on this journey as the greatest adventure you ever had. Don't underestimate this river."

He proved to be abundantly right. "After four days by dugout," the Schreiders wrote, "we gave up that idea . . . too dangerous



America's long-lost past comes to light as you accompany anthropologist-cartographer George E. Stuart and his wife to Indian mounds and cliff dwellings, to giant pyramids and a grim sacrificial well. New finds help Mr. Stuart write of the whole sweep of pre-Columbian times—from the first nomadic hunters to the brilliant civilizations of the Maya, Aztec, and Inca.

Sunbeam spotlights a bowl from a kiva, or ceremonial room, at Wetherill Mesa (right). The builders of Cliff Palace (above), largest of Colorado's cave pueblos, disappeared about 700 years ago, probably forced away by drought.

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PAINTINGS BY HELEN AND FRANK SCHREIDER © N.G.S.

World's mightiest river challenges an adventurous husband-and-wife team as they thread the Amazon by dugout canoe, raft, and river boat. "For several days our balsa-wood raft went through rapids," wrote Helen and Frank Schreider. "The whirlpools were the worst. We'd be swept into them and spun around until we could get back into the current by paddling furiously."

Helen and Frank weave through a jungle laced with vines, bright with orchids, abuzz with iridescent insects. "At night we sleep in villages where the Indians still hunt and fish with bow and arrow." From the Amazon's headwaters high in the Andes to the mouth of the 3,900-mile-long river, the Schreiders carry you across South America's greatest undeveloped resource, the vast and forbidding Amazon Basin.

because of floating logs and debris." Then they tried a balsa-wood raft—"a bit harrowing," they reported. But their experiences had given them the feel of the river as nothing else could have done.

Their observations had a familiar ring, so I dug out my translation of Friar Gaspar de Carvajal's chronicle. The friar logged the 1542 expedition of Francisco de Orellana, the first explorer of the Amazon.

"On the second day . . . we were almost wrecked in the middle of the river," recorded Friar Carvajal, "because the boat struck a log."

Helen told how Frank solved their problem by overhauling a river boat, "installing a motor, aligning the shaft, putting in electrical wiring. . . . In five weeks our *Amazon Queen* was ready to sail."

Francisco de Orellana had done a similar job, building a brigantine, according to Friar Carvajal, in "such great haste . . . that in thirty-five days it was constructed and launched. . . ." And 35 days exactly equal the Schreiders' five weeks.

By the time they reach the notorious Bay of Marajó at the mouth of the Amazon—"Many a proud ship rides the bottom of that bay," a friend had told them—I know the Schreiders will have the makings of a memorable book about an extraordinary voyage through the world's largest jungle.

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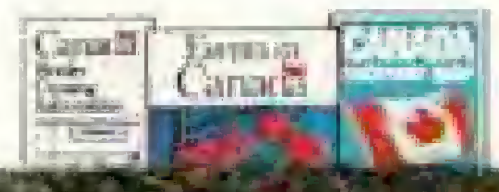

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With a Hudson sprayer, you control:

1. *Pesticide mix.* So you can apply materials at recommended strength.

2. *Spray pressure.* You can use higher pressure for complete coverage of plants. Or use lower pressure with weed-killers to prevent drift.

Admiral Duster

Trombone* Sprayer

Compression Sprayers

3. *Spray pattern.* You can adjust nozzle to just the right pattern, from fine mist to long-range stream.

When to start hunting

Some people spray or dust only when they spot trouble—aphids on stems, holes in leaves, drooping plants.

Trouble is, damage is already done. Besides, many bugs and plant diseases are under leaves. It's hard to spot them.

That's why many experts use an ounce of prevention. They start protecting all plants in early spring. Apply spray or dust—whether there's trouble or not. They follow this routine every week or 10 days all season long.

Now about those trophies

They'll be outside—on display for everyone to admire. Your beautiful flowers. Good-looking lawn. Healthy trees and shrubs.

"Lucky Ladybug" Offer

Ladybugs are lucky. Daisies are in. That's why we're offering this Lucky Ladybug Daisy Pin and Tie Bar. Designed

by Entré, a division of Sarah Coventry. Daisy and ladybug are bright enamel; stem, leaves and tie bar are gold electroplate.

The Daisy Pin is a $3.50 value, yours for only $1.50; Tie Bar a $1.50 value for only $1.00. Get one or both from your Hudson dealer. Or send direct to: Hudson Offer, Box 8401, Roseville, Minn. 55113. Dept. 93.

†Allow 2 to 4 weeks delivery. Offer expires December 31, 1969. Void where prohibited, taxed or otherwise restricted. Good only in U.S.A. and Canada.

HUDSON®

SPRAYERS AND DUSTERS

 *Trademark

The Continental

Now more than ever Continental is America's most distinguished motorcar.
You command the means to obtain fresh, temperature-controlled air. Or make your seat position more comfortable. Or do any of the things a person who sits in the lap of a luxury car should have done for him.
And the interiors offered are inspired ones.
They include materials and designs that might grace any place from a boardroom to a music room.
The excellent riding qualities of this Continental are mentioned over and over again by Continental owners. And who could be in a better position to judge?
This car is powered by the most advanced V-8 engine in the automotive industry: 460 cubic inches big.
Styling is something you can see for yourself.
Take a good look soon at your Continental dealer's.

LINCOLN·MERCURY Ford

Look! The whole Smith family is Polyunsaturating in their backyard

...with a big assist from Mazola. Smart Smiths! They're aware that the growing amount of medical evidence indicates that the average American family eats both too much fat and too much of the wrong kind of fat. The Smiths are doing something about it. They've cut down on total fat, and they're replacing solid fats with the more highly polyunsaturated vegetable oils. And the oil that Mrs. Smith uses for all her cooking and salad needs is Mazola® Pure Corn Oil.

Why Mazola? Because Mazola, besides being the finest oil you can buy, is higher in polyunsaturates than any other leading brand. It's the logical choice for you, too, as an important part of achieving a healthier diet.

Eating indoors or out, the Smiths are on their way to a better balanced diet—polyunsaturating.

P.S. She's using Mazola® Margarine, too. It's made with liquid Mazola Corn Oil.