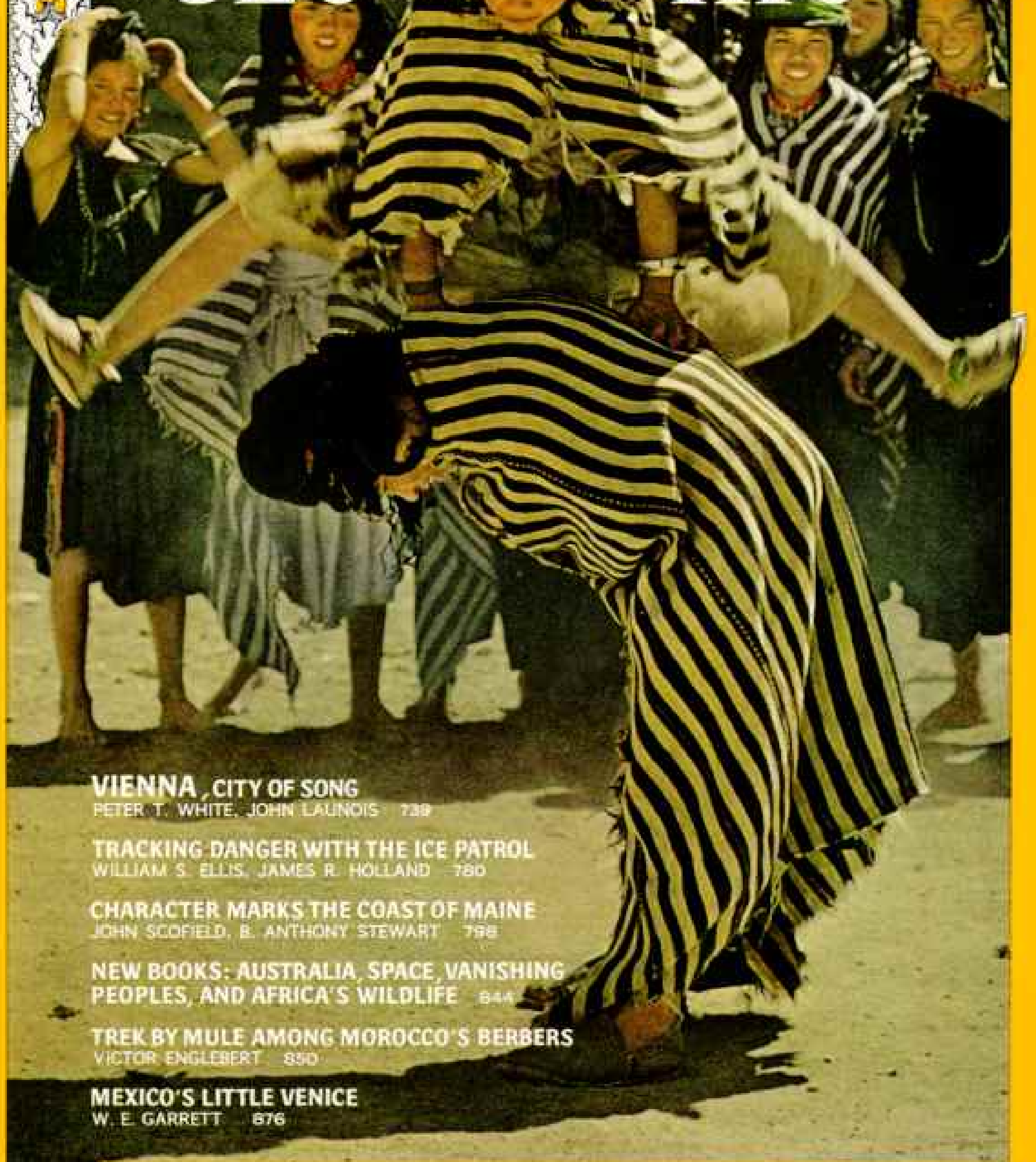


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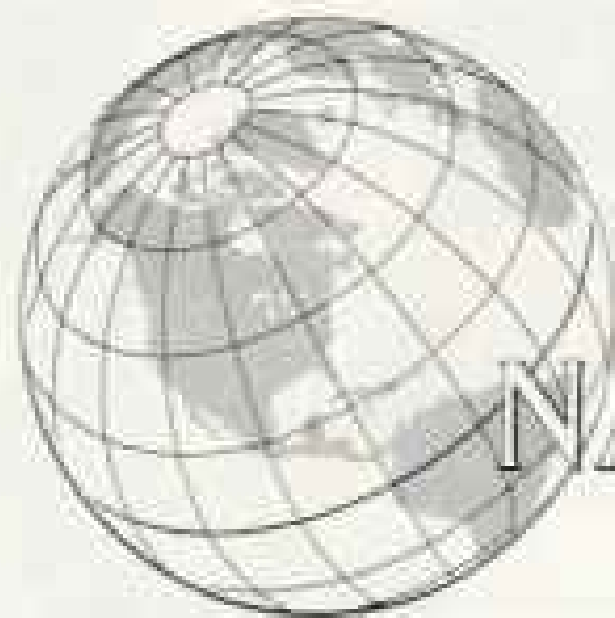
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# Vienna, City of Song

By PETER T. WHITE

National Geographic Staff

*Photographs by JOHN LAUNOIS, Black Star*

“**WE HAVE STONE AXES** used here more than 3,000 years ago,” says the archeologist at the city’s historical museum. A restaurant in the heart of town displays bricks stamped with an X, the mark of the Tenth Roman Legion; also Turkish cannon balls of stone, hurled during a siege in the 17th century. No question about it, this lovely spot now called Vienna, where green hills slope down to the Danube, has attracted men for a very long time.

A century ago Vienna ruled a European domain second only to Russia’s, an empire with 11 languages and as many inhabitants as could then be counted in all the United States.

That empire dissolved in the aftermath of World War I, leaving Vienna the capital only of Austria, a country with fewer inhabitants than New York City counts today.

It was a cataclysmic change. I remember my parents talking about it, for I was born

and raised in Vienna. I went away to America as a teen-ager—long ago, before that word reached the dictionaries—but these are things one doesn’t forget.

Now I sat on the terrace of the Cafe Schwarzenberg with Hans Weigel, a noted Viennese writer. He said, “This city has experienced many changes, but not changed much. Look.”

I looked past flower boxes out onto the Ring, a grandiose horseshoe of boulevards. Ten lanes for automobiles. Four rows of trees, including chestnuts abloom in white. The Ring nearly encloses the oldest part of town, the section called the Inner City (maps, page 750). Blossoms, people, and cardinal-red streetcars basked

in the gentle sunshine, aglow in the soft breezes of May.

My mind drifted back to Vienna, 1945—another time of cataclysmic change. World War II was over, and I had come on furlough from the U. S. Army, soon after 50 Allied air



**Music and dance, soul of a city:** In the splendor of the State Opera House, ballet dancers open the Opera Ball, climax of Vienna’s winter social season. White-gowned debutantes await the first waltz of a joyous swirl that will last until dawn. Socialites from throughout the world rendezvous for the Austrian capital’s *Fasching*, the pre-Lenten gaiety that begins with New Year’s Eve.









attacks, after Russian infantry had routed the last die-hards of Adolf Hitler. I remembered the toppled bridges, the streets full of rubble, the temporary graves in the parks. Of those bitter days no visible scars remain.

Herr Weigel said: "If someone had left a dozen years before the Second World War and came back today, he'd find very little change in the appearance of Vienna. True, the cars now keep to the right instead of the left, and there are many more of them, but most people get around exactly as before—they walk or take a streetcar. Even the population is just about what it was. Last week,

there are some twenty varieties to choose from. With lots of whipped cream. With ice cream. With rum.

The newcomer said, "Remember when the espresso bars first swept over Vienna—rush, rush, gulp and run? Some espressos didn't even have chairs. People said the peaceful old coffeehouses would disappear. No more sitting around with friends or newspapers, or daydreaming for an hour or writing a letter.

"And what happened? Some old cafes really are gone, especially on the Ring, where banks and car salesrooms can pay higher rents. But two-thirds of the cafes carry on as before.



CONFIRMATION BY JOHN LAURIE, BLACK STAR (C) W.S.S.

Light as a waltz, a *fiacre* decked with artificial flowers whisks through the Prater park, a traditional confirmation-day ride in Roman Catholic Vienna. In his special-for-the-occasion blue suit, a lad takes the reins from the derbied driver; his godparents chaperone.

according to the papers, it was 1,634,372."

I emptied my "cup of gold." That's a coffee cup containing a little less coffee than milk. A good half hour had passed since Herr Weigel had finished his "small brown one," which is a demitasse with a little less milk than coffee. Once more the waiter brought fresh glasses of water and another stack of newspapers.

Another writer joined us and ordered a *Melange mit Schlag*—milk, coffee, and a glob of whipped cream. In a Viennese coffeehouse you don't say coffee, please. That would be like going to a jewelry store and asking to see some jewelry. You must be specific, because

Half the espressos now provide newspapers too, and let people sit and talk as long as they want."

The espresso from Italy was becoming Viennese, as generations ago the breaded veal cutlet Milanese turned into *Wiener Schnitzel*. (To the Viennese, the name of their city is Wien, pronounced VEEN.)

I strolled into the Inner City, through sunny squares and narrow, curving streets, looking up at the gracefully carved stone and stucco on the palaces of 18th-century noblemen. Nowadays the palaces contain offices and apartments, but chubby angels still hold up

coats of arms, proudly and playfully. The cramped buildings don't look cramped. Baroque, the embodiment of contradiction, the style that makes mass seem light, still prevails in the heart of Vienna.

On the Josefsplatz, the prettiest baroque square in all Austria, an endless column of cars stops to let pass a single file of snow-white stallions. The drivers don't scowl, they smile. I spot my wife, waiting there with our son Norby, and together we follow the stallions into the colossal hall of the Spanish Riding School.

Chandeliers brighten, horns resound. A thousand eyes fasten on eight stallions, on their scarlet saddlecloths trimmed in gold, on their riders in brown coats and breeches of white deerskin.

### Horses Dance a Graceful Quadrille

The stallions move in incredible ways (page 745). To the slow part of a Mozart symphony. To a march. To a waltz—"Wiener Blut," by Johann Strauss. Their ancestors came from Spain in 1580. Their movements evolved from parading and warfare. And yet, as the school's director takes pains to explain, everything they do is in keeping with movements natural to a horse; this is the key to the *haute école*, the epitome of the classical riding art that these horses so outstandingly represent.

Now they perform a quadrille. Norby's comments are enthusiastic, but so loud that my wife has to take him away. I can't be angry; he's only 3½. I stay, entranced, to see more of the unbelievable. For what is this if not contradiction triumphant—when a half-ton stallion dances, looking light as a butterfly? Here is another expression of the baroque, and today it is strictly Viennese. Elsewhere it can be seen only in old prints.\*

I walked out of the hall with a couple from Minneapolis.

She: "We really must take home some Vienna horses. You know, the famous Augarten porcelain?"

He: "But dear, you just bought six handbags with all that fancy embroidery on them!"

No wonder the lady was so taken by the art of petit point. This stitching in silk of many colors, on bags or compacts or eyeglass cases, reflects exquisite patience. The designs, often taken from paintings, are plotted on graph paper, point by point. Each point becomes a stitch in what looks like a miniature tapestry—as many as 3,000 stitches per square inch. Thousands of elderly ladies do this work at home, as do some elderly men (pages 754-5).

"They don't earn much more than my salesgirls," a shopkeeper told me, "but they are proud to produce such nice things."

Vienna has a history of craftsmanship. Legend tells that Attila the Hun had a wedding outfit made here 1,500 years ago. Recently the master coachmaker Josef Klicmann in the Wurmsergasse built the gilded carriage ordered by the Shah of Iran for his coronation. My wife hinted about bargains in little alpaca-knit suits in the Kärntner Strasse, Vienna's Fifth Avenue. Alas, soon she would discover all the fine leatherwork, all the dazzling glass and crystal.



*Gemütlichkeit*, Viennese call the relaxing atmosphere of a wine garden. A patron savors it as he refills his glass from a *Weinheber*.

For anyone seeking an introduction to Vienna and the Viennese, an outstanding bargain is a bus trip up the Kahlenberg (pages 778-9). Up there—five miles north of the center of town, and 1,000 feet higher—you'll find a church, a restaurant terrace, and a view worth pondering.

You see the Danube River, of course, an ancient west-east route of the salt trade. Here it bisects the ancient amber route, from the Baltic to the Mediterranean. You see into the Alps. Forty-five miles to the southwest a

\*See "The White Horses of Vienna," by Beverley M. Bowie, NATIONAL GEOGRAPHIC, September, 1958.

mountain rises 6,808 feet, with snow enough for skiing in June. You also see into the steppe; 45 miles eastward lies the great plain shared by Hungary and Czechoslovakia.

And in a way you can see into the past—why this city of the river, the mountains, and the plain became a seat of power, and as much of a melting pot as New York.

In the time of Christ, Roman legionaries built a fort here to discourage incursions by Germanic tribes from the north. Charlemagne's horsemen passed downriver in A.D. 791, to crush the powerful Avars. Twice, in 1529 and 1683, the armies of the Moslem Turks flooded from the east as far as Vienna. Both times the city withstood their onslaughts and the starvation of the siege, until relieved by the combined forces of the Christian West.

As for the melting pot, that resulted from Vienna being a seat of empire for centuries, drawing people from much of Europe. The Count of Habsburg, who until 50 years ago reigned here as the Emperor of Austria, was also King of Hungary and Bohemia, of Dalmatia and Croatia—and ruler over many lands that today lie in Italy, Yugoslavia, Poland, Rumania, and the Soviet Ukraine.

Now you see why Vienna's palaces are named not only Liechtenstein and Schwarzenberg but Pallavicini and Esterházy, Kinsky, Lobkowitz, and Wilczek; and why any representative list of Viennese—cabinet ministers, telephone subscribers, streetcar conductors—will reflect a similar mixture.

#### Love of Titles Survives the Years

Today not only the old names survive, but many old values as well. You can see that in the daily governmental gazette, the 265-year-old *Wiener Zeitung*. The imperial double eagle was dropped from the front page in 1918, when the last Habsburg emperor abdicated. A single-headed eagle now surmounts the announcements of medals and crosses and titles, bestowed by the President of the Austrian Republic: Hofrat for the bureaucrat, Kommerzialrat for the businessman, Professor for writers and artists. But now, just as then, who could love his new title more than does a Viennese? Only his wife, who by the grace

of common courtesy is now Frau Hofrat or Frau Professor.

What about the emperor's dashing officers, in tunics of white or powder blue, in trousers of scarlet? Those glorious colors still glitter nightly on the stage, in operettas by Strauss or Lehár or Robert Stolz. But wait, come along to the military tattoo near the Ring and observe a genuine young *Leutnant* of today.

He salutes a comrade and his lady, smiles, faintly clicks his heels, bows, kisses the lady's hand. The uniform is plain and gray, but all the old dash is there.

#### Grim Days Came Often to Vienna

There is something else to keep in mind, however, something somber. In the 50 years since the emperor's departure, Vienna has witnessed a succession of disasters.

After the first World War came hunger, ruinous inflation, depression. I remember men making little speeches in streetcars, to tell of having exhausted their unemployment benefits; then they would play a harmonica and pass down the aisle in hopes of a few pennies. I remember my mother fetching me from grade school in a panic: Civil war had broken out that morning, and around the neighborhood tennis club the Social Democrats, or Reds, battled the Christian Socialists, or Blacks, with heavy machine guns.

Hitler came, bringing despair to many in Vienna, but hope of work and stability to many more. What followed was a regimen of brutality and fear—and World War II, with Viennese dying in the uniforms of Nazi Germany. Hardly a family was left untouched. I learned that toward the war's end a man I had known died by his own hand, afraid of a reckoning for what his outfit had done in Russia.

In Vienna's great gray prison I visited the chamber where Nazis decapitated men and women for hoarding food, for listening to the Allied radio, for making a joke about Hitler. Near the drain where the blood ran down, bronze plaques list hundreds of names—Smatlak, Obermaier, Padaurek. The plaques list no Jews. Most of the Jews of Vienna who did not emigrate in time were transported

Like a statue springing to life, a Lipizzaner stallion lifts from the ground in a *courbette* before the Austrian flag; another rider and mount seem dwarfed in the vast hall of the Spanish Riding School. Descendants of horses brought from Spain four centuries ago, Vienna's white Lipizzaners step to music with intricate promenades, graceful pirouettes, and soaring leaps. To visitors, they hold center stage in the city's rich repertoire of entertainments.







Mellow heart of Vienna surrounds the crescent-fronted Hofburg, right, winter home of the Habsburg emperors who ruled here until 1918. Today the palace contains museums and the famed Spanish Riding School. The Burgtheater, left foreground, faces a tree-lined boulevard called the Ring. The





RENDERING BY JOHN GAUNDEL, BLACK STAR © NELLE

184-foot-wide street virtually encloses the old Inner City (maps, page 750), parent of today's metropolis of 1.6 million Austrians. Beyond the distant Gothic spire of St. Stephen's Cathedral lies the wooded Prater, bordered on the near side by the Danube Canal and on the far side by the storied river itself.





eastward to be murdered, tens of thousands of men, women, and children.

After the Nazi collapse, Viennese women hid in cellars, dreading the Russian soldiery. The daily food ration dipped to starvation levels and black marketeers rode high. For years many a mother, wife, or fiancée met many a train, praying that her man might be among the dazed figures trickling back from prisoner-of-war camps.

#### **Danger Lurked in Soviet Zone**

Postwar occupation lasted 10 nervous years, with the city partitioned into American, British, French, and Russian Zones, with more brutality and fear. A family friend recalls: "If you had to go into the Soviet Zone, you never knew if you'd come back. A lot of people were kidnaped. Some wound up in Siberia."

The occupation troops departed 13 years ago, leaving Vienna the free capital of determinedly neutral Austria. The iron curtain at the city's doorstep no longer terrifies. Viennese soccer fans once more take a bus across the Hungarian border to a big match in Budapest; more and more Czechoslovaks shop in the department stores on the Mariahilfer Strasse; and on weekends one finds Hungarians aplenty in the great open-air market, stocking up on Austrian chocolate and Chiclets chewing gum made in Mexico.

For the Viennese, life steadily improves. The economy, revived with Marshall Plan aid, is boosted by tourists, chiefly from West Germany, the United States, and Britain; today's schilling is among the most stable of currencies. Even the recent touch of recession in western Europe hardly hit the Viennese. It



As if driving into the past, rush-hour traffic wheels toward gates of the massive Hofburg. Heroic statues depict labors of Hercules; signs at left advertise an apothecary shop and ice cream—Eskimo. Though cars multiply and traffic jams abound, travel by foot and streetcar still predominates in Vienna.

*Fräulein Inspektor*, one of the city's 34 police-women, weathers a tide of autos on the Operngasse. At Christmas motorists bring her cakes and flowers.



REPRODUCED BY WILLIAM ALBERT BURNETT (LEFT) AND JOHN LAURIE, BLACK STAR (R.S.T.)

is the foreign workers, the Yugoslavs and Turks arriving daily at the South Station, who find jobs harder to come by.

And yet, despite the calm and prosperity of late, is it any wonder that the Viennese retain a certain streak of skepticism? A coffeehouse acquaintance tells me: "So many dreams have died here—the monarchy of many nations, the first republic, the vision of Hitler. That was a madness, but it was a dream too. Three times in my lifetime, what was preached one day as right was denounced the next as wrong. Now we are cautious; we distrust all appearances of perfection."

From up on the Kahlenberg, on the northernmost foothill of the Alps, one sees all Vienna spread out: the 448-foot spire of St. Stephen's Cathedral in the middle; the Riesenrad, the giant Ferris wheel in the Prater amuse-

ment park (page 774); the squat storage cylinder of the Municipal Gasworks. In the foreground stretch rolling vineyards, and to the right the endless trees and meadows of the Vienna Woods (upper map, next page).

#### Musical Tradition Permeates City

Those vineyards, and the trees and streams and birds in these woods, said Beethoven, helped him compose. His Vienna also basked in a rich musical tradition, nurtured by the affluence and serenity that followed the final defeat of the Turks. Emperor Leopold I wrote opera. His son, Charles VI, loved to conduct, and Charles's son-in-law, Franz I, played in a much-admired string quartet. A nobleman would hire a valet for his skill on the cello.

In this atmosphere a major part of what we call classical music was written in 47



Crossroads of Europe, Vienna flourishes astride trade routes following the Danube and running north and south from the Baltic to the Mediterranean. Site of a Roman fort whose ruins survive, the vast melting pot blends Latin and German, Magyar and Slav. During the Middle Ages, it grew to the boundaries of the Inner City (below), with walls just inside the path of modern Vienna's Ring. Today the Inner City forms one of 23 administrative districts.

**Districts of Vienna:** I Innere Stadt, II Leopoldstadt, III Landstrasse, IV Wieden, V Margareten, VI Mariahilf, VII Neubau, VIII Josefstadt, IX Alsergrund, X Favoriten, XI Simmering, XII Meidling, XIII Hietzing, XIV Penzing, XV Rudolfsheim-Fünfhaus, XVI Ottakring, XVII Hernals, XVIII Währing, XIX Döbling, XX Brigittenau, XXI Floridsdorf, XXII Donaustadt, XXIII Liesing.





years, between 1781 and 1828, by Haydn, Mozart, Beethoven, and Schubert. Through the city's ups and downs, extraordinary enthusiasm for music has survived. Where but in Vienna—and I have this on excellent authority—would Soviet Intelligence try to make friends and influence junior officials by offering them good seats at the opera?

#### American Singers Flourish in Vienna

The Opera! We lived just across from it, in the Hotel Sacher, and I wished I could have lived right in it. *Carmen*, *The Marriage of Figaro*, *Tannhäuser*—whether I found it superb or just passable, I felt happy there as soon as I sat down.

When the Vienna State Opera House was finished 99 years ago, the Viennese criticized it so ruthlessly that one architect hanged himself. Thereupon the other died of the shock. The Viennese often criticize something before they take it to heart.

On March 12, 1945, American bombers struck at refineries and rail yards across the Danube; some of their bombs hit the opera, leaving it a burned-out shell. All Vienna celebrated when it reopened, its exterior restored to look exactly as before.

Americans now outnumber all other foreigners in the boxes, and quite a few Americans can be found behind the footlights too. Hofrat E. A. Schneider, who looks after the artists, named some for me with fatherly pride. From St. Louis, Felicia Weathers and Grace Bumbry. From Detroit and from Gatesville, Texas, respectively, Robert Kerns and William Blankenship. Hofrat Schneider called them Bobby and Blanky. "And we've had Lenny Bernstein conduct *Falstaff*. Next season he'll do *Rosenkavalier*."

Hofrat Schneider went on: "Some singers say that what we here call an A is in fact pitched higher, that our C is really C sharp. The fact is that in our house the sound seems brighter than elsewhere, perhaps because of our orchestra. The Vienna Philharmonic, you know. I can't define their style. Others may play with more precision but none have their spirit, their heart. . . ."

Or their timbre, their tone. At Philharmonic headquarters I consulted Professor Walter Barylli, the orchestra's president and one of its concertmasters. "We aim for the calm and clear," he said. "That's the Vienna sound, unmistakable in the softness of the strings. Or the timbre of the brass. Our French horns, for instance, have uncommonly large bores. That makes them sound fuller, more like the

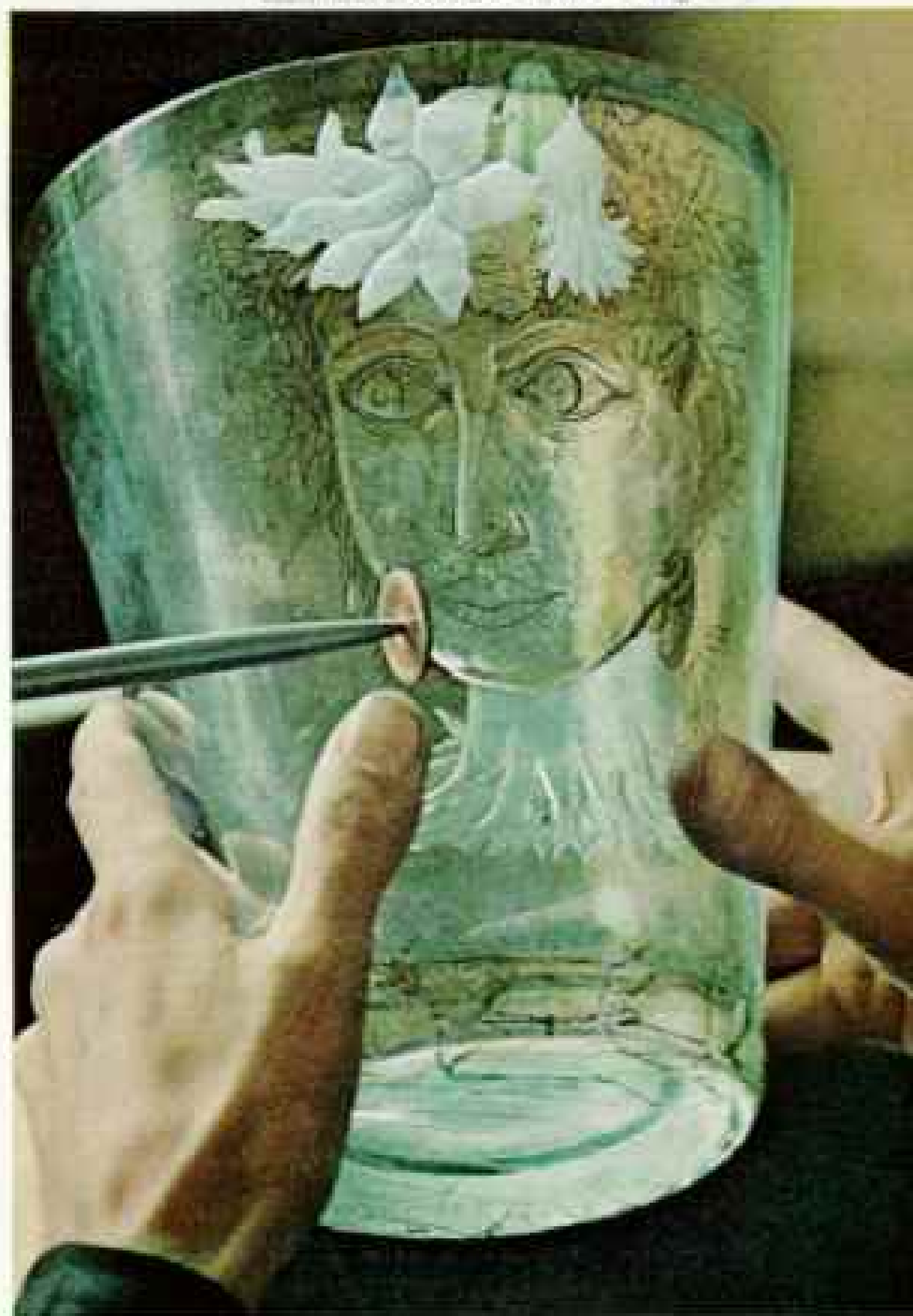
original hunting horn. It makes them harder to play, with more chance of a miss; this strains the players' nerves, but it's worth it."

Professor Barylli took me downstairs into the great Musikvereinssaal, a dazzle of carving and gilding believed by many a conductor to produce the finest acoustics in the world. Crash! Thunder! Earthquake! The gilded ladies holding up the architrave seemed to shake. It was Maestro Bernstein, in slacks and sweater, rehearsing Mahler's Second Symphony—"The Resurrection."

Bernstein came off the podium and wiped his face on a towel, exhausted and happy. "This orchestra, I just love it," he said. "We are very very far behind in rehearsals, but we'll make it." It was Vienna's most eagerly awaited program of the season.

Modern art adorns classical crystal at Lobmeyr, one of the city's fine glassmaking firms. Using 50 different copper engraving wheels, a skilled *Glasgraveurmeister* will spend about 400 hours executing this fanciful portrait by Wolfgang Hutter, a leading painter of Vienna's School of Fantastical Realism. Price of the finished vase: \$1,600.

ENGLISH BY JOHN LAUND, BLACK STAR © N.C.S.





## Holiday in the park

ON A SUNNY DAY IN SPRING, parks and a parade lure Viennese outdoors. Lounging over coffee and a snack, Sunday visitors to the Stadtpark hear a concert played in a hatbox bandstand. Strollers swarm over the neat parklands along the Ring, where the city's fortifications once stood. In peasant blouse, tanned Ine Meister (left) pauses while feeding sparrows. Ready for their marching orders, girls in confirmation dresses fidget before a Corpus Christi procession; an ill-at-ease boy stands like a black sheep among the white. Quaffing from a half-gallon beer stein that passes from musician to musician, a *Flügelhorn* player refreshes between Sunday concert numbers on the Kardinal Nagl Platz. He wears the insignia of the Music Club of St. Marx, a brass band made up of butchers from the slaughterhouses, who add their notes to musical Vienna.

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AGGACHROMES NATIONAL GEOGRAPHIC SOCIETY



Played most often, all over town, was "The Blue Danube"—written 100 years earlier by the waltz king, Johann Strauss the younger, for choir and orchestra. "It's coming out of my ears," a concert manager told me. "But what can you do? This is the big anniversary year. People expect it more than ever."

I timed a performance by a reputable choir—introduction, five parts, and coda. Six minutes, 48 seconds. I compared this with the exemplary recording by the Philharmonic, without choir. Nine minutes, 53 seconds. Whence the difference?

I asked Professor Eduard Strauss, the distinguished conductor and grandnephew of the waltz king (pages 764-5).

"A lot of people today play the waltz too fast," said the professor. "The waltz is an embodiment of liveliness, and many people think this means speed. But liveliness has nothing to do with speed. When people lived at a slower pace, they were just as lively as today, and they enjoyed things more."

It occurred to me that a hundred years ago the Danube itself moved along a good deal more slowly than today. It was a meandering, many-armed thing until, for flood control, a neat new bed was dug. The effect was the same as when a fixed amount of water flows first through several crooked pipes and then through a single straight one. It speeds up.

Professor Strauss excused himself. He had to pack, fast, to be off by jet for his sixth tour of Japan. I went off to the City Hall, to chat with the mayor, Kommerzialrat Bruno Marek.



Mayor Marek stroked his mustache and said amiably, "I warn you, I get mad at people who think that all we do in Vienna is play waltzes and eat schnitzel and strudel. We have a quarter of the Austrian population and we turn out nearly half the national product. We work!"

I assured the mayor that I had seen the great petrochemical plant on the road from the airport, the gigantic breweries, the growing harbor on the river. Each day I awoke to the clanging of hard-working garbage trucks.

Mayor Marek said: "We're building a new plant to burn the garbage in. Out will come steam to heat three hospitals. We build a lot. Seventeen percent of our dwellings were destroyed in World War II, and housing is still scarce. But we also build for the spirit. Each municipal housing project sets aside 1 percent of the cost for works of art. We encourage every school child to learn to play an instrument, all the way up through the conservatory, entirely free of charge."

The mayor looked out through the great window and mused about the Viennese spirit.

"The songs we love to sing usually end cheerfully, but with a touch of melancholy, a thought of death. That's part of the Viennese character. Our native optimism, our sense of irony, our notorious skepticism—all this helps us accomplish the most formidable tasks, by seemingly not taking them too seriously."

#### Why Most Viennese Refuse to Move

Nine out of ten Viennese live in apartments. Nearly half of them live close to a little factory or two, primarily in the tightly packed districts around the Inner City. To change this is the formidable concern of Architekt Georg Conditt, in charge of city planning.

In the 7th District, called Neubau, I had examined a typical block: 160 yards square, a hodgepodge of 41 buildings and 31 courtyards, with 29 small factories and workshops. A printing plant, two carpentry shops, a garage repairing automobiles, factories turning out enamelware and wrought iron.

Herr Conditt said: "Imagine the noise! The odors! The guerrilla warfare between tenants and factory people! The complaints to the authorities, the hairsplitting decisions, the exasperation all around."

Would the factory people consider moving?

Hardly. Where else would they pay so little rent, at rates set long ago? Nor would the tenants budge. How could a man abandon the little restaurant down the block, where he meets his cronies for cards on Saturday

mornings? And his wife: Could she leave the place where she knows the tricks of every shopkeeper, and all the gossip? No, in Vienna one does not move. One stays loyal to the neighborhood, where one feels at home. Why, some districts even evolved their own variations on the Viennese dialect; and mothers in the 10th District, Favoriten, have been known to tell their sons that no good can come of marrying a girl from Simmering, the 11th.

And yet, in Herr Conditt's view, hope lies in precisely such mixed marriages: "Say he's from Josefstadt, the 8th. She's from Meidling, the 12th, and it's a choice of waiting three years for an apartment in either district, or taking one now in the less-built-up 21st, in Floridsdorf. That's across the Danube! Siberial

BOUACHWINE © NATIONAL GEOGRAPHIC SOCIETY



But they'll take it and their children will grow up to be loyal Floridsdorfers."

Architekt Conditt urged me to look in on some salutary innovations in town—he summed them up as the "new Vienna"—and so I set out one Monday morning with Herr Herbert Eckert of the city-planning staff.

#### Old-age Pensions Cut Relief Rolls

We started in the Favoriten District, where the grid pattern had been broken into by plucking out a block, closing off surrounding streets, and planting a park. Housewives pushed baby carriages past a sandbox with toddlers and benches with pensioners. A silver-haired gentleman lit an eight-inch-long, pencil-thin cigar called a *Virginier* and said: "Now it's quiet, but wait till the kids come after school." He looked forward to that.

Herr Eckert explained that one in every

four Viennese is over 60; most of them draw pensions. That's thanks to Austria's social security system, one of the most comprehensive in the world. "Nearly everyone is covered now, and so our relief rolls are down to a fifth of what they were 20 years ago."

I also learned that monthly allowances—granted to all to encourage marriage and the growth of the family—are up. For each child, there's a children's allowance; for every woman with two children or more, a mother's allowance, both via the Ministry of Finance. Rents are rising, hence a small rent allowance via the Ministry for Social Administration.

Back in the car I asked what was being done to discourage traffic congestion. Herr Eckert said, "We decided not to tear down the town for the sake of the automobile. We build underground passages instead."

Under the Südtiroler Platz, once chaotically

**Quarter of a million hand stitches** and months of eye-straining labor produce a purse of petit point, exquisite embroidery that needlewomen of Vienna carry to its highest form. Sewed with 2,330 points to the square inch, this masterpiece won the petit point Grand Prix in Brussels in 1958 and sold for \$448. Frau Anna Rauscher studies the intricate design she copies; a magnifying glass helps guide each stitch.









POBACH/OMER BY JOHN LAURITZ, BLACK STAR © S.A.S.

Sampling her scented wares, a vendor offers bouquets of lavender to freshen her customers' closets. Gathering flowers from hills flanking the city, Vienna's "lavender wives" advertise their blossoms with a lilting, melancholy chant at least two centuries old.

**Neighborhood news** flies from balcony to balcony in a courtyard off the Inner City's Griechengasse—Street of the Greeks. Nine out of ten Viennese live in apartments, and neighbors often dwell side by side for a lifetime. Nearby will stand a little restaurant, frequent retreat of the head of the household; a market where grocer and shopper confront one another every day; and a small factory or two, turning out wrought iron, furniture, tiles, or glassware. Each of Vienna's 23 administrative districts develops a distinctive social and club life, one that commands the pride and allegiance of its residents.

Wine mugs clink as a couple samples *Heurige*—"this year's." The term encompasses both the new wine loved by Viennese and the wine gardens operated by the vintners themselves. These young people meet at the Reinprecht Heurige in Grinzing.

**Gaiety in a grotto:** Wine lovers fill a Vienna cellar named the Twelve Apostles, a news vendor hawks his papers. Destination of many a foreign visitor seeking conviviality, the Twelve Apostles occupies a basement dug when Vienna lived crowded behind the walls of the Inner City.

**Finding a haven from time and change,** ladies share pastries in the ornate recesses of Demel's, once confectioner to the emperor. Here, as if calorie counting were unknown, customers succumb to such temptations as tarts, *éclairs*, petit fours, and coffee *mit Schlag*—mounds of whipped cream.



congested, I discovered three levels of city-planned bustle. Two lanes for streetcars, four for cars, a dozen shops, and a terminal for the new crosstown express railway.

We stopped on the Laaer Berg, or Laaer Hill, where abandoned clay pits and garbage dumps have given way to a huge swimming pool, to acres of lawn and 30-foot-high oaks and firs, transplanted from the Vienna Woods. Wave-making machinery started churning in the pool, and I marveled to see so many adults splash about on a working day.

"Mostly barbers and hairdressers," said Herr Eckert. "Their shops close Mondays."

In another part of Favoriten rose a set of cubes in steel and glass—the People's University of the district. I glanced at the schedule of classes: English, Turkish, Russian; Latin and Ancient Greek; Bookkeeping,

Clothesmaking, and How to Get Along With People. Lectures to come would cover "Peru: From the Deserts to the Amazon Jungle"; "Germany on the Road to Fascism"; and "Shortness of Breath—Symptom of Disease."

#### Auditorium Has Seats on Wheels

In the corridor I bought Coca-Colas for us from a vending machine. I asked who paid for all the improvements we had seen. Herr Eckert said: "You just helped. There's a tax on all beverages. Also on payrolls. Let's go to the Stadthalle in the 15th District, Rudolfsheim-Fünfhaus. It's the most modern auditorium in Europe."

I found a series of halls, for gymnastics, for ball games, for rowing practice, and a main hall with variable seating. Seventeen thousand for boxing bouts, 8,700 for bicycle races,







EXCHAMBE © N.S.A.

**Curtain call!** With a final primp and pinning, chorus member Ingrid Thyringer-Müllner of the Vienna State Opera goes on stage for Offenbach's *The Tales of Hoffmann*. Viennese unite in a love of their famous Staatsoper and its stars.

I looked down at a long lake called the Old Danube—an arm of the river until it was closed off at both ends. Sailboats lolled down there. A wooded island beckoned with grassy beaches. It had lockers for 35,000 swimmers.

"No time for a swim," said Herr Eckert. "We're due at the factory making parts for the prefabricated apartment houses."

And so I watched great steel forms being filled, locked up, and kept under pressure. Out came wall panels six inches thick, sandwiching five layers: outside finish, concrete layer, insulation, more concrete, and inside finish. Close by rose the prefabricated settlement of Neu-Kagran, sleek buildings four and nine stories high, already home to 15,000. I saw a supermarket and a self-service laundry, sculpture in stainless steel, and much greenery, most of it not to be stepped on.

I entered a typical apartment in the newest building. Hall, living room, bedroom, children's room, American-style kitchen, a tiny terrace, and yes, a bathroom.

Wonderful! Two-thirds of all apartments in Vienna have no bathroom. A third have not even a water tap. A single toilet is shared by all tenants on a floor; so is the water tap, out in the hallway.

#### Factory Flees the Parking Problem

Our last stop in the new Vienna was the Karl Kupka handbag factory, Herr Eckert's special pride, the first factory to move out to the 22d District, across the Danube. Herr Kupka said the parking problem did it:

"Imagine dragging 500 handbags a quarter of a mile, just to get them on a truck. Isn't it nice here, next to the wheat fields?"

I admired his bags of many colors and especially the attaché cases, all black. "The James Bond influence," Herr Kupka ex-

10,200 for plays or ice shows. Blocks of seats, mounted on rollers, could be pushed to the side and pulled up, out of sight.

I rested in the cool of the skating hall, where lithe figures flitted over the ice to the tune of "Strangers in the Night," sung by Frank Sinatra. Cold commands came from Fräulein Thea Visser-Wittmann, the trainer. I said her pupils looked promising.

She said, "Thank you. The girl in the green tights is Regina Heitzer, who won the professional world's skating championship in London last week. The young man in the checked shirt is Emmerich Danzer, the men's amateur champion. *Down in the knee!*"

We left and crossed the Danube via the new North Bridge and lunched in a revolving restaurant, 556 feet up in the new Danube Tower.

Woolly stockings help ward off the chill, as prima ballerina Edeltraud Brexner pauses between rehearsals of Tchaikovsky's *The Nutcracker*. Both ballet and opera, federally owned and supported, invariably play to full houses.

BYRON HINE © N.A.S.

plained. "One must move with the times."

But not without the food warmer. There it stood in a corner—a large steam-heated set of perforated metal shelves to warm the covered dishes the employees bring from home. Meat loaf, string beans, apricot dumplings. Just what I had seen in little factories over in the old 7th District. Herr Kupka said, "You can't expect people to live on rolls and cold sausage, can you?"

#### Palace Spans Eight Centuries

Vienna's greatest building boom came just after the city walls were razed a century ago. Its most impressive symbols can be seen along the Ring, the circuit of boulevards that replaced the walls: the Museum of the History of Art, housing one of the world's finest collections of paintings and coins; the Museum of Natural History; also the University, the City Hall, and the restored Opera—each the setting once a year for a festive ball.

Along the Ring, too, beckons the most revealing Viennese building of all, that most mixed-up of palaces, the Hofburg, or Court Castle. Its 18 sections date from the 13th century to the 20th. It was the emperor's winter residence. Now it shelters several remarkable museums, but to me its most remarkable quality is that it is still so full of life. Here are shops, halls for international conventions, two churches and a cloister, the Austrian census bureau and the Spanish Riding School, and a restaurant called the Alte Hofkeller.

I toured the Hofburg day after day. The museum of musical instruments has pianos once played by Beethoven and Schubert, by





Their notes floating on air, an animated quartet plays *Schrammelmusik*, a tinkling, once lost sound that Johann Strauss called "the real spirit of Vienna." When Viennese composers Josef and Johann Schrammel died in the 1890's, true Schrammel music disappeared, as did its distinctive instruments. Then Lois Böck, left, violinist with





REARRANGED BY JOHN LASHOIS, BLACK STAR © S.S.L.

the Vienna Symphony, laboriously tracked down the composers' handwritten scores, copied the old instruments, and founded the Vienna Classical Schrammel Quartet. Here, seen through glass inscribed with bars of Johann Schrammel's "Prater Violets," the quartet performs with two violins, a rare G-clarinete, and a 13-string double guitar.



ENTICHROME (LEROY) BY JOHN LEROY, BLACK & WHITE

Robert Schumann and Johannes Brahms. In the world's richest museum of arms and armor, experts are restoring 725 precious items sent here after the 1966 flood in Florence. The matchless drawings and etchings in the graphics collection called the Albertina—a million in all—include masterpieces by Dürer, Rembrandt, and Michelangelo. The National Library boasts 100,000 Egyptian papyri and two Gutenberg Bibles.

In the museum of ethnology I saw the only surviving feather headdress from the realm of Montezuma. Acquired by Cortés, it is here because a Habsburg once ruled colonizing Castile. The Hofburg's most glittering museum, the Imperial Treasury, guards the crown of the Holy Roman Empire. Habsburgs wore

it off and on during 533 years (page 772).

Vienna supports 39 museums in all, including the rooms where Beethoven lived and the one where Schubert was born; a clock museum; and a magnificent museum of the armed forces. My heart was warmed especially by the museum of technology and its evidence of Austrian inventiveness. Here is the earliest practical ship's screw (Josef Ressel, 1827) and one of the world's first gasoline-powered cars (Siegfried Marcus, 1874).

In this sphere Austria still is a leader. Already a fourth of the world's steel is made by a new Austrian process, and Dr. Ernst Rothausser, working for IBM in Vienna, recently developed an attachment that converts computer output into spoken words.



PHOTOGRAPH BY ZACHARY F. BOWLEY AND JOHN S. FLETCHER © V.S.S.

Vienna's first family of music, Strausses past and present gather in the apartment of conductor Eduard Strauss, center, with his wife and son. In the place of honor stands a bust of Eduard's great-uncle, Johann Strauss the younger, the beloved waltz king, who in 1867 composed "The Blue Danube." Others in the great musical dynasty: Johann's brothers Eduard and Josef and their father, Johann. Among them they wrote hundreds of polkas, waltzes, and operettas.

Little giants of the music world, the Vienna Choirboys sing in Augarten Palace, their magnificent home, studio, and school. Numbering 88 voices, the choir tours in four units, giving 400 concerts a year. Mozart composed for the 470-year-old group and Schubert sang in it.



My wife was impressed by Vienna's neatly kept parks—and beyond, its precious "green belt," including thousands of wild and hilly acres in the Vienna Woods.

In the Stadtpark along the Ring, two old couples walked sedately, the men ahead, the ladies well behind. From his stroller a little boy in an electric-blue playsuit pestered his mother for more rolls for the ducks. She said, "But Christian, they cannot eat more. Eat your orange." Christian threw his orange to the ducks.

At the playground we watched lively youngsters on slides and





treadmills. I said, "Look at their loden jackets and Tirolean hats, typically Viennese." They turned out to be Spanish, Italian, Russian, Iraqi, and Brazilian. It was the kindergarten of I.A.E.A., the International Atomic Energy Agency of the United Nations, based in Vienna. Norby was permitted to join, and from then on he took part in little international expeditions to Vienna's greatest parks, to the Belvedere gardens, and to the grounds of the imperial summer palace, glorious Schönbrunn (pages 770-71).

#### **Youthful Mozart Kissed the Empress**

Many Viennese still recall crowding into Schönbrunn's great courtyard, to pay respect to Emperor Franz Josef on his birthday. There he stood on a balcony amid his archdukes, the wind ruffling his white whiskers and the green feathers on his two-cornered hat.

Inside, Schönbrunn presents 18th-century Viennese baroque at its most exuberant, with sunny gilding in delicate profusion: on the carved wood along walls of crimson silk, on the stucco along the ceilings, on the tall white ceramic stoves. Yet all this magnificence

conveys a warm, lived-in quality—a legacy of that archmotherly Viennese figure, the Empress Maria Theresa. Little Mozart played the harpsichord for her here when he was 6. He felt so much at home that he jumped into the lap of the empress and gave her a big kiss.

With a troop of tourists I stopped before a portrait of Maria Theresa and four of her children—including little Marie Antoinette, whose fate led to the throne of France and to the guillotine. The guide, speaking English as well as German, mentioned that Maria Theresa had 16 children. "Good heavens!" said a lady from Liverpool. A lady from Hamburg said, "She could afford it."

We walked on through history—into the room from which the conquering Napoleon ruled much of Europe in 1809; into the Great Gallery, where after Napoleon's downfall the Congress of Vienna danced, where in 1963 a thousand candles blazed at a banquet for President Kennedy and Chairman Krushchev.

Farther out, in the Vienna Woods, the old imperial game preserve called the Lainzer Tiergarten attracts hikers. Some arrive at the gates in new cars, but many Viennese still ride



Beauty engulfs a sightless beholder in Vienna's Garden for the Blind, an acre and a half of Wertheimsteinpark that brings nature to those who cannot see. Visitors follow guide rails to beds abloom with fragrant or pungent flowers, such as these black-eyed Susans. Running fingers over plaques, they read plant names in Braille (below). One corner holds a zoo where blind children fondle docile donkeys, lambs, and rabbits. An acoustic fountain spraying water on cymbal-like disks fills the air with soft music. So secure do the blind feel that most leave their seeing-eye dogs in a kennel near the gate.

DETROIT: (LEFT) AND REICHSHOF: BY WILLIAM ALBERT HILLARD © N.S.A.



a streetcar to the end of the line and walk, with their lunches in rucksacks. They picnic under chestnuts and beeches, or on a sloping meadow overlooking the city. Then they snooze, Papa with his shirt off, Mama in a bikini, Oma, or grandmother, in her slip, while the kids kick a soccer ball around.

#### Aged Oaks Attract Hungry Birds

"Our oak groves haven't been touched in 400 years," said Dr. Herbert Tomiczek, Vienna's Director of Forestry. "We let them stand until they fall." The oaks were full of fissures and insects, attracting gourmets among all the songbirds of central Europe.

Dr. Tomiczek wore the green cape of a huntsman. He looked after great stags and wild horses, but his heart belonged to the wild pigs. They are pigs of the highest purity, he said, unmixed for centuries behind the 18-mile wall encircling the park.

Wasn't such inbreeding bad?

"They're healthy, because we shoot everything that looks diseased or weak. I just wish people wouldn't feed them chocolate. It makes them sick."

Just after sunset, back in town, a young couple with rucksacks got off a streetcar and walked homeward, past a news vendor in a yellow jacket selling tomorrow's *Kurier*. An early milk wagon rolled by, the horse's hoofs striking orange sparks from the granite cobblestones. I asked the milkman if he'd rather have a truck.

"This is better," he said. Because the cart is slow it needs no sides, and so it's easier to get down the boxes with the heavy milk bottles.

The traditional drink of the Viennese, of course, is wine, and the wine to drink is the *Heurige*, meaning "this year's"—white, young, and full of zip. The place for drinking it is also called Heurige, meaning the garden or establishment of the wine-grower (page 758).

I found Swiss and German buses bunched outside a widely advertised Heurige near the main square in Grinzing. Inside was a crush of noisy humanity, with strolling musicians playing "Arrivederci Roma." I squeezed up to a table occupied by a sizable family from Paris and a Viennese law student who kept ogling the Swedish girls at the next table.

Suburbia burgeons with prefabricated apartments that look down on the Old Danube, an arm of the river that became a lake when the stream was rechanneled for flood control. Long lists of families await vacancies in the modern, municipally owned high-rises. New units include not only American-style kitchens but also bathrooms—a luxury touch in a city where most tenants still share a water closet in the hall. With 17 percent of its dwellings bombed out in World War II, Vienna energetically rebuilds, faithfully allocating 1 percent of each municipal project's cost for the purchase of ornamental art.

Cheerful chimney sweeps make their rounds, slung with brushes designed to reach the remotest flues. Fire-control laws require Viennese to keep their chimneys clean, so sweeps enjoy steady work, good pay, and status. Each year their guild sponsors one of the many balls that enliven Vienna.



The Parisian father said he was enchanted to witness finally the typical and justly famous institution of the *Heurige* of Vienna, although the price of grilled chicken could not be said to be low. "But naturally, I am a Frenchman, not an American."

I also visited another type of *Heurige*, with a different atmosphere, the sort preferred by many Viennese. There might be music, but it would be soft, and the food was inexpensive by anyone's reckoning. You brought your own hard-boiled eggs or cheese or smoked pork.

And above all, the setting would be truly *gemütlich*, as the word is understood in Vienna—that is to say, calm, utterly relaxing;





BOORCHROME (ARIVE) BY JOHN LEONIDE, BLACK STAR; ETTACHROME BY WILLIAM ALBERT ALLARD © N.R.S.

often outdoors, right in a fragrant vineyard, or under a linden tree, with a hazy view of the city in late afternoon, with glowworms in the evening. Such places are plentiful in many outlying parts of Vienna, for example in Neustift, and across the Danube, in Stammersdorf and Strebersdorf.

#### **Never Knock on a Viennese Wine Barrel**

Vienna still has about 600 winegrowers, and if you visit one of their cellars, don't knock on a barrel, for good luck or otherwise. I did, once. Shocked silence all around. Had I disturbed the wine? "People may tell you that, but it's not the real reason. No, it looks as if

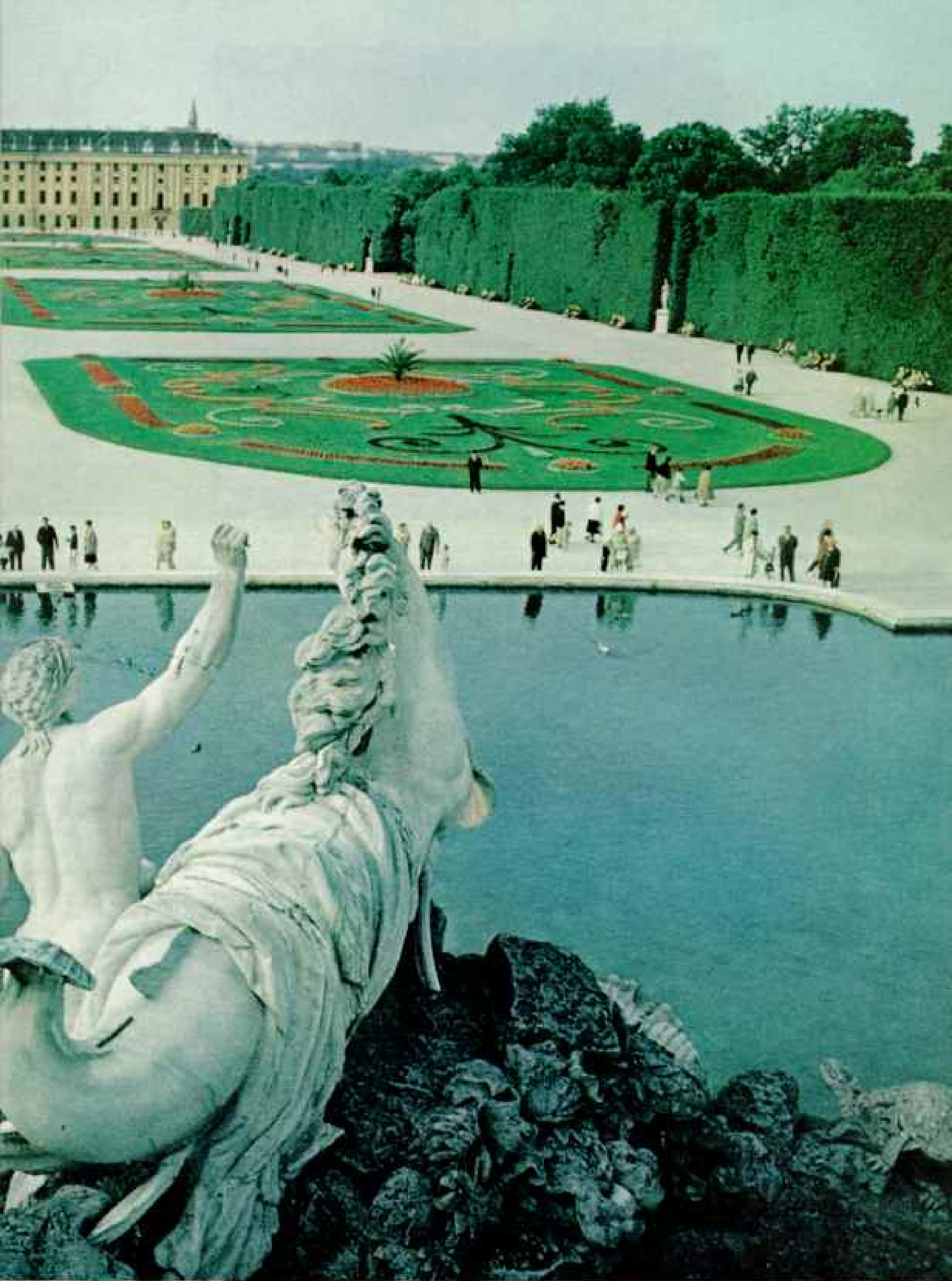
you're checking how much wine a man has—checking his credit, so to speak. It's like looking into his wallet."

Up on the Nussberg, or Nut Mountain, a leading winegrower said: "I had 15 acres and six people to work them, and a dozen extra from March to December. Now I work three times that acreage—with fewer people and three tractors." His vines grew the new way—no longer on sticks, bunched close together, but held up by wires strung from six-foot poles, in rows 8 feet apart, to let the tractors loosen the soil. But a third of Vienna's vineyards still grow the old way.

*(Continued on page 774)*



With grandeur that echoes empire, vast Schönbrunn Palace, summer home of the Habsburgs, looks out on manicured gardens. A marble-hewn member of King Neptune's court salutes a stream of visitors to the 250-year-old residence. The palace complex contains 1,400



REPRODUCTION BY JOHN LAUBKE, BLACK STAR © R.S.E.

rooms, 43 of which are open to the public. Here Maria Theresa brought up her brood of children, among them Marie Antoinette, destined to die on a French guillotine. And from here Franz Josef reigned for 68 years, into the sunset of the Austro-Hungarian Empire.





COURTESY, ETHNOHISTORISCHES MUSEUM, VIENNA

**Gem-splashed helmet,** the 1,000-year-old crown of the Holy Roman emperors glows on display in the Hofburg. Habsburgs ruled the Holy Roman Empire intermittently over a period of 533 years, until its dissolution in 1806. Solomon symbolizes wisdom.



ILLUSTRATION: LARGELY AND EXACTLY AS BY JOHN LAURIN, BLACK STAR © N.Y.C.

**Pinnacle of elegance:** Viennese and their guests gather in the Great Gallery, showroom of Schönbrunn. The 150-foot-long hall epitomizes the baroque style in all its glory, with parquet floors, cream-and-gilt walls, bronze chandeliers, and magnificent ceiling frescoes. Austrians entertain here only on state occasions, such as this reception for the International Congress of Jurists; normally the room is open to the public.

**Death chamber of a Napoleon:** Rich tapestries line Schönbrunn's Napoleon Room, where the emperor's only legitimate son died in 1832. Born of Napoleon's second wife, the Habsburg Archduchess Marie Louise, the young Bonaparte grew up in Vienna, to succumb to tuberculosis at 21. His father took up a conqueror's residence in Schönbrunn in 1805 and again in 1809. Ironically, the Congress of Vienna met in this palace in 1815, when diplomats redrew European boundaries after Napoleon's final defeat at Waterloo.





BOBACH/PHOTO BY JOHN LEONARD, ELDER, SPAN © 1977

Landmark in the Prater, the Riesenrad, or Giant Wheel, fills the sky above a glowing fountain. Lifting its boxcar-size gondolas 210 feet, the Ferris wheel has thrilled Viennese and visitors for 70 years.

On the Steinberg, or Stone Mountain, I watched two women at work. They wore wool stockings, because it had been cold when they started at 6 a.m. Now they put on headscarves, because of the sun. I won't mention their names. They said the name of a woman who is not famous and has done nothing wrong shouldn't be in a magazine.

Frau A. had worked in vineyards since she was 9, hoeing, pruning, harvesting, pressing. Now she was 69, still pulling weeds—down one row and up the next. Frau B. came after, tying the leafy vines to sticks with straw. Carefully she kept the young grapes facing outward, to let them get the sun. Between

the women hopped a red-tailed bird.

"He's a redstart, and he comes when we pull weeds," said Frau A. "It breaks the earth and he gets a worm or two."

Both women worked steadily, constantly bent over. "We're used to it," Frau A. said. "The young ones don't want to do this. They go into a factory. They don't earn any more, but they think it's easier."

Frau B.: "They couldn't keep me in a factory, I'd get sick. I want to be outside. . . ."

Frau A. showed me her hands, grimy and hard. "I wash them in lemon water and put on cream overnight. Hands must be beautiful. If you don't take care of your hands, you can't hold a needle again."

#### A Thousand Voices Unite

By now the annual Festival of Vienna was upon us, 29 days in May and June, bringing a flood of things to see and hear: exhibitions, lectures, 9 operettas, 10 ballets, 39 concerts, 47 different operas, in halls of all kinds, in palaces, in parks.

The second day, after hearing a choir of 1,000 school children in the Konzerthaus, or Concert House, I met Friedrich L. Friedrich of the festival management. "World's biggest festival," he said, "with the smallest staff." By the time it was over his count was 977 events. The staff numbered seven. He sighed. "In Vienna we say 'Let's do something, but spend very little money.' We expect miracles. Somehow things work out."

On the morning of Corpus Christi a colorful procession dominated the Inner City. Along with His Eminence Franz Cardinal König, Archbishop of Vienna, walked Knights of the Holy Sepulcher in white capes, Knights of Malta in black, and university students uniformed in scarlet, blue, and orange, with flags and dueling sabers. Little girls followed with flowers in their hair (page 753). Nine out of ten Viennese are Roman Catholics. The sidewalks were jammed.

Cabinet members and generals followed the canopy held up by tall Boy Scouts. "It used to be stonemasons from St. Stephen's," said a Knight of Malta. "But now their union would insist they be paid overtime."



The marchers dispersed at the cathedral, and I went inside. A headset offered taped explanations in German, Italian, French, and English. "St. Stephen's displays all styles from the 13th century onward... picturesque baroque altars... the most beautiful Gothic tower in the world."

I climbed the spiral of steps to the tower-keeper's chamber, 230 feet up, and looked down on the red-tile roofs and chimney pots of Vienna. Above my head a small falcon came home to roost. "They aren't scarce yet," said the keeper. "Still plenty of mice in the parks."

I began my descent, and stopped. I heard angelic voices: "*Laudate Dominum—Praise the Lord...*"

It was Mozart's "*Vesperae Solennes*," drifting up from a courtyard near St. Stephen's.

I raced down and was swamped by 22 energetic angels in sailor suits—Vienna Choirboys heading for their bus. Their conductor said, "Come see us sometime."

A week later I did. They live in the Augarten Palace (page 765), and when I arrived those 22 were outdoors, divided into two tough little soccer teams. More boys were indoors, in classrooms, busy with math and geography.

"We have four separate choirs," explained the director, Dr. Walter Tautschnig, as he led me through four dormitories. In the first, all the bedspreads were blue; in the others, yellow, pink, and green. The green crew was away on tour: "After three months they come back, so the boys won't fall behind in their schooling. Then another group goes out. And so, one choir is always traveling, in America or Australia or South Africa, earning our keep. Our rent is paid until 1988."

Dr. Tautschnig had been a choirboy himself. Had things changed since his day?

"Children grow up faster than they used to," he said. "When Haydn and Schubert were choirboys, their voices changed at 16. Mine changed at 15. Now it happens at 14—and in some at 13. We have to start them younger than before..."

True enough. Scientists find that increasingly early maturation in man has been a



PHOTOGRAPH BY WILLIAM ALBERT WELLS © N.Y.C.

Captains of untipable tubs sail forth on a pond in the Donaupark. Amid the preserve's 250 leafy acres, a shaft called the Danube Tower supports a revolving restaurant 556 feet in the air, giving diners breathtaking panoramas.

trend for about a century in industrial nations the world over. Better food seems to have much to do with it.

As for myself, I found Viennese food delightful as always, and my appetite for it increased alarmingly.

At the Hotel Sacher I loved the *Tafelspitz*—from the steer's hindquarters, the softest of boiled beef, with chive sauce and a pinch of horseradish. And the *Sachertorte*! That's a chocolate cake with marmalade inside, chocolate icing outside. At Demel's, formerly purveyors of sweets to the imperial household (page 758), the *Sachertorte* presents the marmalade *between* the cake and the outside icing.



The courts have decided that Sacher's is the original Sachertorte. Sacher's or Demel's, I couldn't resist either.

At Kugler's, the old imperial delicatessen, I frequently fell victim to the sausages and cheeses, and at Trzešniowski's buffet, to the multicolored open sandwiches. Tichy's ice-cream parlor offered *Ascino*, flavored with curaçao; and *Fiocco*, which is frozen whipped cream. For adults only, there was ice cream with champagne and whisky. I had to try them all, but I trembled before the reckoning in calories and cholesterol. What bothered me all the more was that the Viennese were eating less and less.

I had discovered that quickly enough. An official suggested that we meet again, and I asked when would be a good time to reach him. He said lunchtime. Didn't he go home to eat? "I don't eat lunch," he said. "Maybe an apple, at my desk."

In the Sacher I ordered a small Tafelspitz for Norby and asked his baby-sitter what she'd like to have sent up. She said: "I don't

eat any supper. I'll have yogurt when I get home." A survey of my acquaintances revealed widespread dietary restraint—except on special occasions, or at mama's.

A psychologist said: "After the war we had a mania to make up for lost eating. For years we stuffed ourselves, but now the trend is the other way. The doctors scared us. We have a new saying, 'You can commit suicide with a knife and fork.'"

But there still is the old *Gabelfrühstück*, or "fork breakfast." Many Viennese, who early in the morning take only coffee and a roll, go out at ten o'clock or so for a small goulash. Or they munch a salami sandwich on the job.

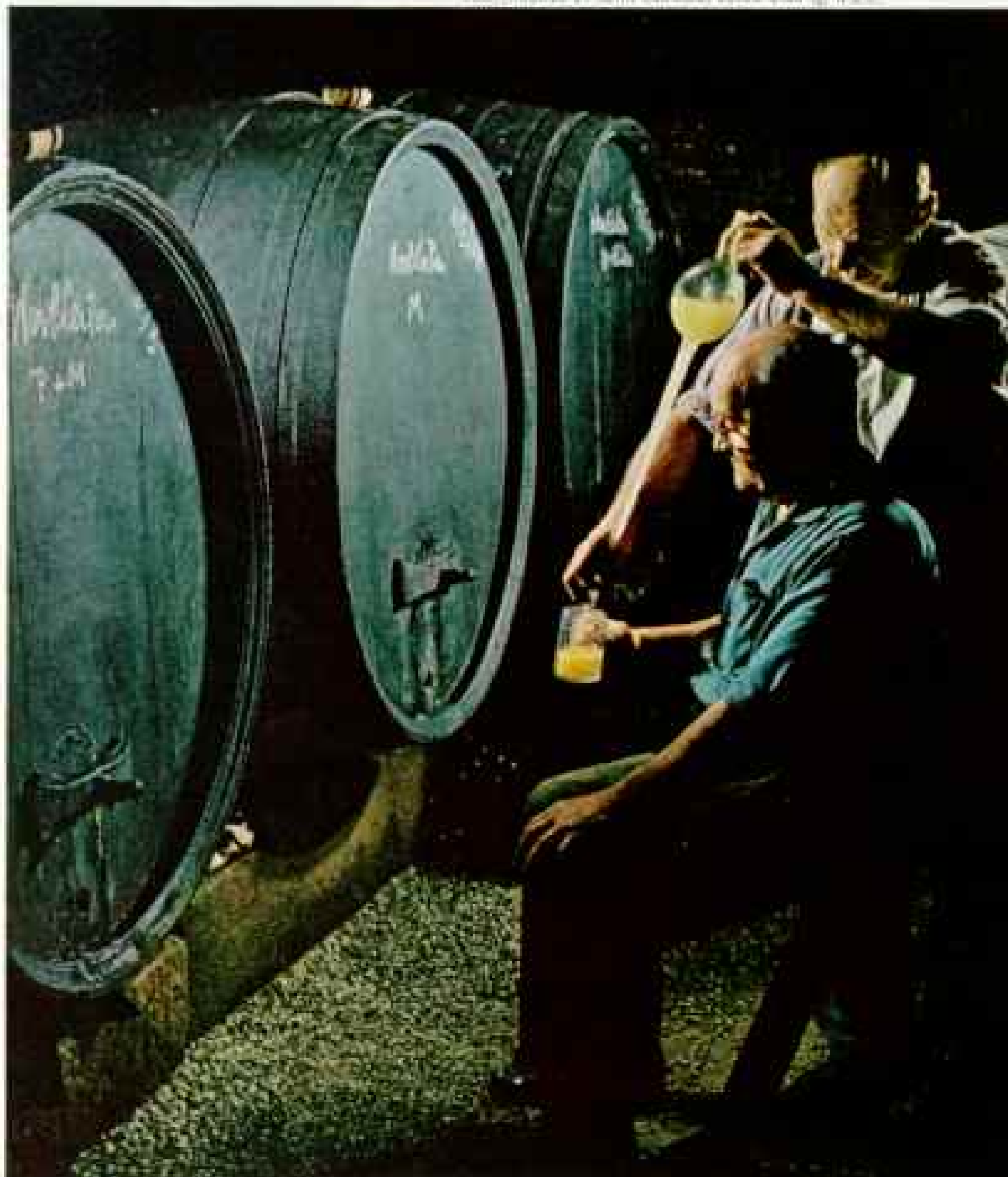
#### Golden Gift for a Boy's Big Day

My wife hated to leave Vienna. She had grown accustomed to her *Gabelfrühstück*, and to having her hand kissed, just as I hardly noticed now when the porter called me Herr Professor. Our time was up, but I had one more engagement, the christening of a friend's son. I accompanied the godfather to the

**Toilers** in a vineyard gather autumn's harvest; an old-timer tamps bunches into a back-pack. Many vintners mingle several varieties of grapes in a single plot, assuring each grower a distinctive wine. With farmlands interspersed among its urban areas, Vienna embraces about 600 vineyards.

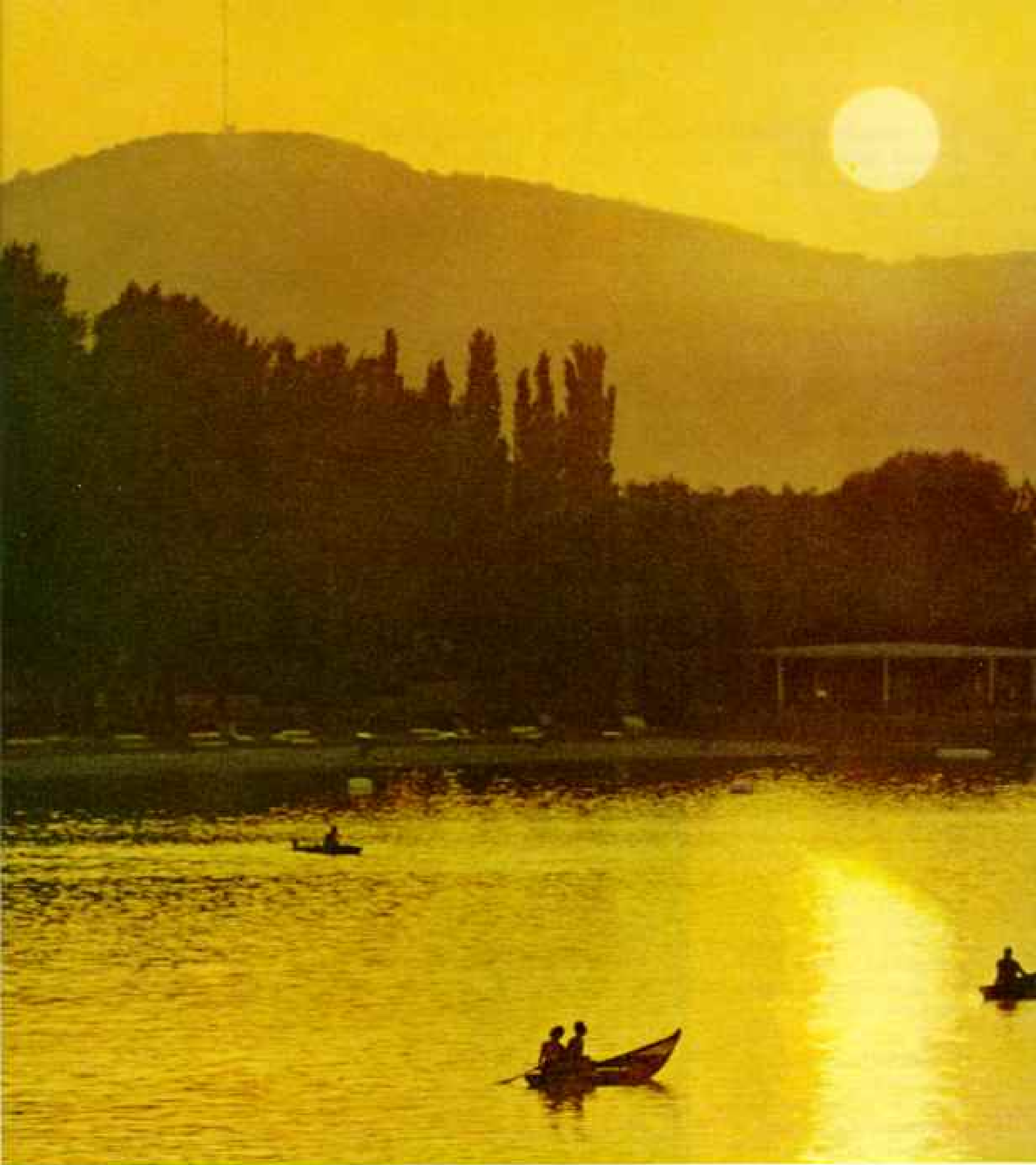
**Settled for business**, wine-taster Johann Nigl samples *Most*, the refreshing juice of unfermented grapes. A workman supplies him from a pipette, drawing from barrels stored in a cool cellar in the Döbling District. Carefully testing each fall's yield, Vienna's official tasters grant labels for quality to about 400 wines each year.

After three months of fermenting, this wine will reach the desired tartness. Then the vintner will put a sprig of evergreen above the door of his *Heurige*, notice to the world of new green-gold wine inside.



PHOTOGRAPHS BY JOHN LUNDEL, BLACK STAR © I.F.A.S.



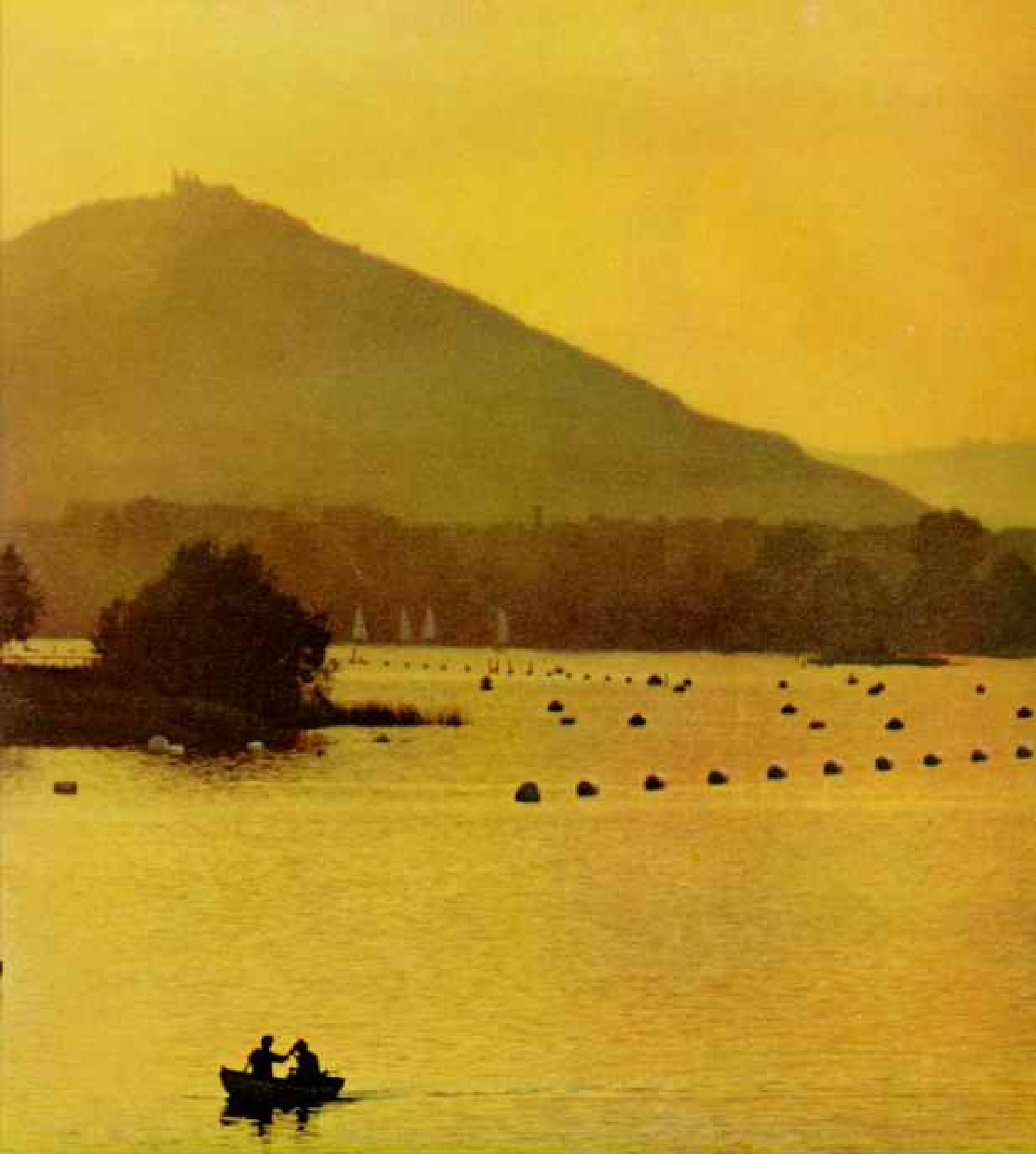


**Paddlers on a pool of gold,** sunset boaters ply the Old Danube. Buoys mark off swimming areas. Beyond, trees of the Vienna Woods blanket the twin knobs of the Kahlenberg and church-crowned Leopoldsberg, northernmost outriders of the Alps. By street-car and bus, families flock to the Woods and mountains, inspirations for many a song.

federal mint, where he bought the traditional present—a golden ducat.

The ducat is a thing of beauty. Double eagle on one side, on the other the fatherly profile of bewhiskered Emperor Franz Josef. The ducat appeals to the sentiments; it also represents a material value unlikely to decline.

The price was 107 schillings, or \$4.10, for 3.490896 grams of gold—half the weight of an average wedding band. But jewelry is usually made of 14- or 18-carat gold, alloys that are only 58 or 75 percent gold; the rest is copper



BOARDSHIPS BY JOHN LAINGIS, BLACK STAR © N.S.A.

and silver. The Viennese ducat is rated at nearly 24 carats. It is 98.6 percent pure—the purest gold coin in the world.

An official showed me through the mint. The gold comes in bars from London, or from old jewelry people bring in. Rows of women check the ducats for looks and weight. In a room by herself, Frau Anna Kaiser bounces them on a stone, checking for sound, which must be high and clear. But one in 15,000 or so sounds like lead. "Could be an air bubble, or a bit of charcoal, or a tiny crack."

Clunk. Frau Kaiser had caught another one. "If you heard one like this outside, it would be counterfeit," said the official. "Our ducats are valued everywhere. We guarantee their purity." The date on them is 1915. "People like it this way. Why change?"

And so I left content, in a glow of golden sentiment: That despite traffic jams, computers, and the cult of staying thin—despite all the changes the old city faces nowadays—Vienna will keep right on not changing much.

THE END



EXTACHROMES © NATIONAL GEOGRAPHIC SOCIETY

*MONSTROUS HOOK OF ICE, a potential killer of North Atlantic ships, hulks beneath its International Ice Patrol watchdog, a low-flying Hercules HC-130B. Crewman (left) checks the berg's size as it drifts south toward death in the warm Gulf Stream. Reports on its position and course, radioed to vessels at sea, will help prevent collisions, thus safeguarding lives.*

# Tracking Danger With the Ice Patrol

By WILLIAM S. ELLIS  
National Geographic Staff

*Photographs by JAMES R. HOLLAND*

**T**HE PILOT'S ORDERS CRACKLED over the intercom as the big Coast Guard plane descended to 800 feet... 600... 300—ever closer to the roof of the mountainous iceberg below. The steely mood of a military mission filled these last moments of the “bombing run.”

Finally, 250 feet. At the open rear door of the plane a young ensign raised his arm, paused for a moment, and on the pilot's signal hurled a gallon mayonnaise jar full of dye down on the berg (page 782). As we climbed up and away, a crewman whooped, “Yahoooo! The Red Baron strikes again!”

Looking back, I saw a vermilion stain spread slowly down the clifflike side of the target. We left it that way, looming like some mythical sea dragon







RETAKING (ARROW) AND REDUCING © U.S.C.

**Syrup for a super-sundae:** Gallon jar of dye, hurled from the open door of a United States Coast Guard plane, will splash color across the white face of an iceberg and thus identify it for a study of drift patterns. Aiming at a lofty steeple (below), a seaman on the Coast Guard's *Evergreen* does the same job with a bow and dye-tipped arrow. Sightings of the color-flagged bergs will help scientists determine their speed and direction.



with flames licking from its monstrous jaws.

The "bombing" I had just seen was a routine United States Coast Guard operation to mark icebergs for quick identification in drift-pattern studies. It is a goggles-and-neck-scarf kind of flying, but the bombardier seldom misses. If he does, the plane circles back for another round. When he hits, the dye—a mixture of rhodamine-B for color, calcium chloride for penetration—spreads a swath of color a yard or more wide down the face of the ice.

### Bergs Meet Death in the Gulf Stream

Below us now, the red iceberg and others were moving south of the 48th parallel. On a heading for the Gulf Stream (map, page 785), they would soon disintegrate, finally vanishing with the gurgling, effervescent litany of glacial ice going back to water.

Such is the fate of these mammoth fragments of glaciers—a fate few mourn. Certainly masters of vessels plying the shipping lanes of the North Atlantic are not saddened by the loss. Nor are the men of the International Ice Patrol, who are charged with riding herd on the towering menaces to safety of life at sea.

The story of the Ice Patrol dates back to 1912. In that year another iceberg passed the same way as those below us, and kept on going until, on a cold but calm night in April, it laid open the hull of the British passenger steamer *Titanic*. More than 1,500 persons perished (pages 792-3).

Out of the tragedy there arose a widespread determination that it must not happen again. Representatives of seafaring nations met in London to draft plans for a permanent service to combat the dangers of ice. Thus in 1914 there came into being the International Ice Patrol. Except for the years of the two World Wars, the patrol has been active each ice season, and not a single life has been lost in its assigned area from a ship-iceberg collision.

The United States and 16 other maritime nations share the cost of the patrol—an average of \$500,000 a year. Because assessments are based on the tonnage moving through North Atlantic shipping lanes, the United Kingdom pays the largest share.

But responsibility for carrying out the assignment rests with the U. S. Coast Guard alone. The service assigns two Lockheed Hercules aircraft and the oceanographic vessel *Evergreen* to the patrol each season.

Spending much of the 1967 season with the patrol, I found that only at headquarters on

Governors Island, in New York Harbor, is the work free of discomforts and hazards. There, in the shadow of Wall Street's skyscrapers, postings on ice conditions in the North Atlantic are maintained around the clock.

In the field the surroundings are bleak, the hours lonely. Still, the duty has a spellbinding quality, for icebergs, like the highest mountains, evoke moods. Getting close to these short-lived behemoths touched me with their fascination. Here was the product of an awesome metamorphosis: taking water silently from the sea by evaporation; flinging it to earth as rain or snow; molding it into mighty glacial rivers; and finally feeding it back to the sea as mountains of ice.

Violent weather—gales plowing the seas for days, even weeks at a time—looms as the greatest obstacle the patrol faces while tracking the movement of ice in the North Atlantic around the Grand Banks of Newfoundland.

Through that area passes the world's heaviest transoceanic traffic. There, too, thick fog, created by the confluence of the cold Labrador Current and the warm Gulf Stream, is present most of the time from early March to late June—the iceberg season (see the double map supplement, *Atlantic Ocean*, distributed to members with this issue).

### Grotesque Ice Sculpture Dots the Sea

Aboard one of the patrol's Hercules HC-130B aircraft on a six-hour iceberg-marking and surveillance mission, we had flown out of the U. S. Naval Station at Argentia, Newfoundland. It was a rare, sunny day in April, with wind not strong enough to blow the fluff off a dandelion. Five members of the 12-man crew worked in the cockpit, while in the darkened cavernous belly of the plane the others stood watches on radar and other instruments. It occurred to me that I made the total 13.

As I watched the coastline of southern Newfoundland disappear, Crewman Jack E. Piehl approached to check me out on the proper use of a parachute.

"Of course we fly so low you probably won't have a chance to use it anyway," he said with a distressingly weak smile.

Along the Avalon Peninsula, icebergs were drifting close to shore. One had gone aground near Petty Harbour (following pages). I knew that it would probably die there after cracking and crumbling with such roars of agony that it would seem at times as if the village were under siege by naval guns.







Held captive in shallows off Petty Harbour, Newfoundland, an iceberg changes shape under the chisels of warm current and springtime winds. Here it resembles an imposing white fortress. Later, after cracking with a roar, it listed like a sinking galleon. Villagers never tire of such shows.

ACQUAINTANCE BY JAMES F. HILLARD © N.A.S.

**North Atlantic icehouse:** Calved from west Greenland glaciers, icebergs usually drift northward, borne on the West Greenland Current. Their route then angles west, until they slip into the southward-flowing Labrador Current. The International Ice Patrol concentrates its activity along the shipping lanes across the Grand Banks. Patrol planes on routine ice-surveillance missions fly north as far as the Strait of Belle Isle. Southern limits of the patrol vary, depending on the position of the southernmost icebergs. Financed by 17 leading maritime nations, the Ice Patrol assigns the performance of its mission to the U. S. Coast Guard.



Before long, the pilot cut two of the four engines and descended to only a thousand feet, the ideal search altitude.

"It may be a long flight and we ought to conserve fuel," Lt. Stephen C. Carrier, the aircraft commander, explained.

We snaked back and forth over the patrolled zone. The sea ice was unusually heavy, rafted in some places like gigantic tepees, and hummocked in other places to form chilly likenesses of yawning hippopotamuses.

Rising up through all this were the icebergs. Some were short and dumpy, others long and lean. There were the so-called "dry dock" icebergs, U-shaped and pocked with sparkling ponds of melt water, and icebergs with pinnacles like exquisite minarets.

The largest iceberg I was to see that day

weighed perhaps 2,500,000 tons. It was a tabular berg, the flat and bulky type more commonly found in Antarctic waters (below). Standing 80 feet high, it was wide enough to hold two football fields end to end. The sun had lent a waxy brilliance to the whiteness of the hulk, and wherever it had cracked, there was a vein of pale blue melt water that had flowed into the crevice and then refrozen.

Like most of the icebergs that drift as far south as the 48th parallel, this one probably came from the west coast of Greenland. It was part of a glacier that had pushed out into deep water and snapped off. The iceberg had drifted north at first, carried along by the West Greenland Current. Crossing Baffin Bay to the west, it turned and was caught up in the swift-flowing Labrador Current. It was



Into the jaws of peril sails the *Evergreen*, a buoy tender converted for oceanographic studies. During most of the stormy ice season, from early March to late June, the ship remains at sea. To study drift patterns, it may ride herd on a single berg for a week at a time. Here it edges between pack ice and an 80-foot-high tabular berg, a type distinguished by its bulky shape and flat top and most often found in the Antarctic. Coast Guard men know the mass of glacial ice shown on pages 780-81 as a "dry dock" because of its deep U-shaped indentation.



then that the long southern voyage began.

Glaciers on the west coast of Greenland calve about 7,500 sizable icebergs each year. An average of 380 get down to the waters off Newfoundland, at the 48th parallel, and of those, 35 to 40 float on past the Tail of the Banks, to the 42d parallel area where the *Titanic* went down. The numbers vary from year to year, and oceanographers still cannot predict long-range trends. In the peak year, 1929, for example, the Ice Patrol sighted 1,351 bergs below the 48th parallel; in 1966, none. Atlantic shipping seasonally shifts southward to avoid the danger areas, and unusually large numbers of bergs may cause further alteration of the great-circle routes.

"An iceberg drifting southward may move five miles one day and forty the next," En-

sign Robert Clasby, the chief ice observer aboard the plane, said as we watched the sea.

It may get sidetracked in a Labrador cove for a week or bang around the fringes of an Arctic island for a month. By the time it reaches its deathbed of warmth in the Gulf Stream, it may have drifted for as long as three years.

#### Berg Rivals Washington Monument

A Coast Guard officer told me that the highest iceberg ever reliably recorded loomed 550 feet above water. "Can you picture in your mind how high that is?" he asked. I recalled the height of the Washington Monument—555 feet. And seven-eighths of the berg's mass was below the surface!

By the time we arrived at Funk Island, our turnaround point, I had counted 63 icebergs



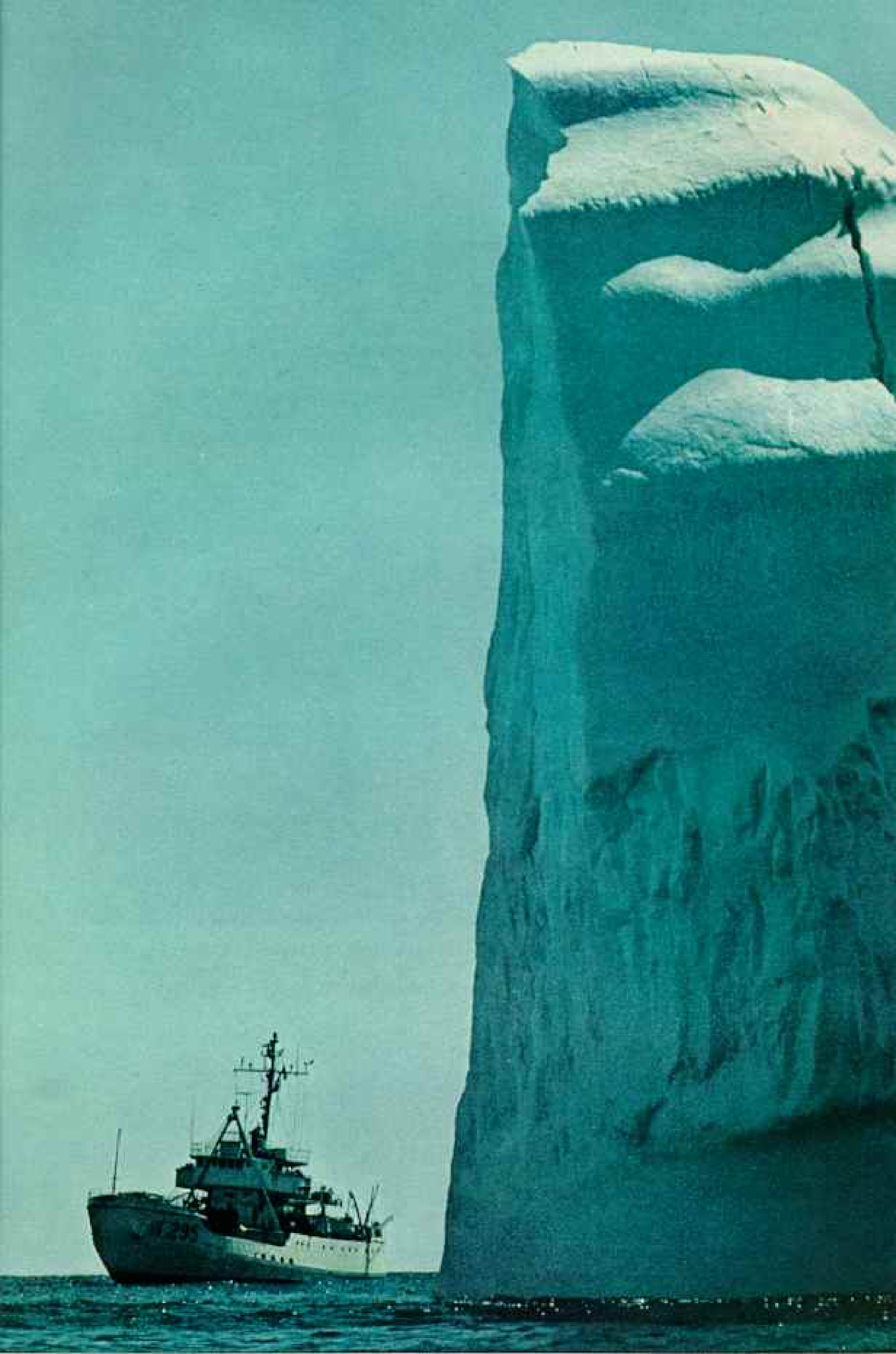
RIGHTS BY CHARLES H. SLOAN; ILLUSTRATIONS BY JAMES E. HOLLAND © N.E.S.

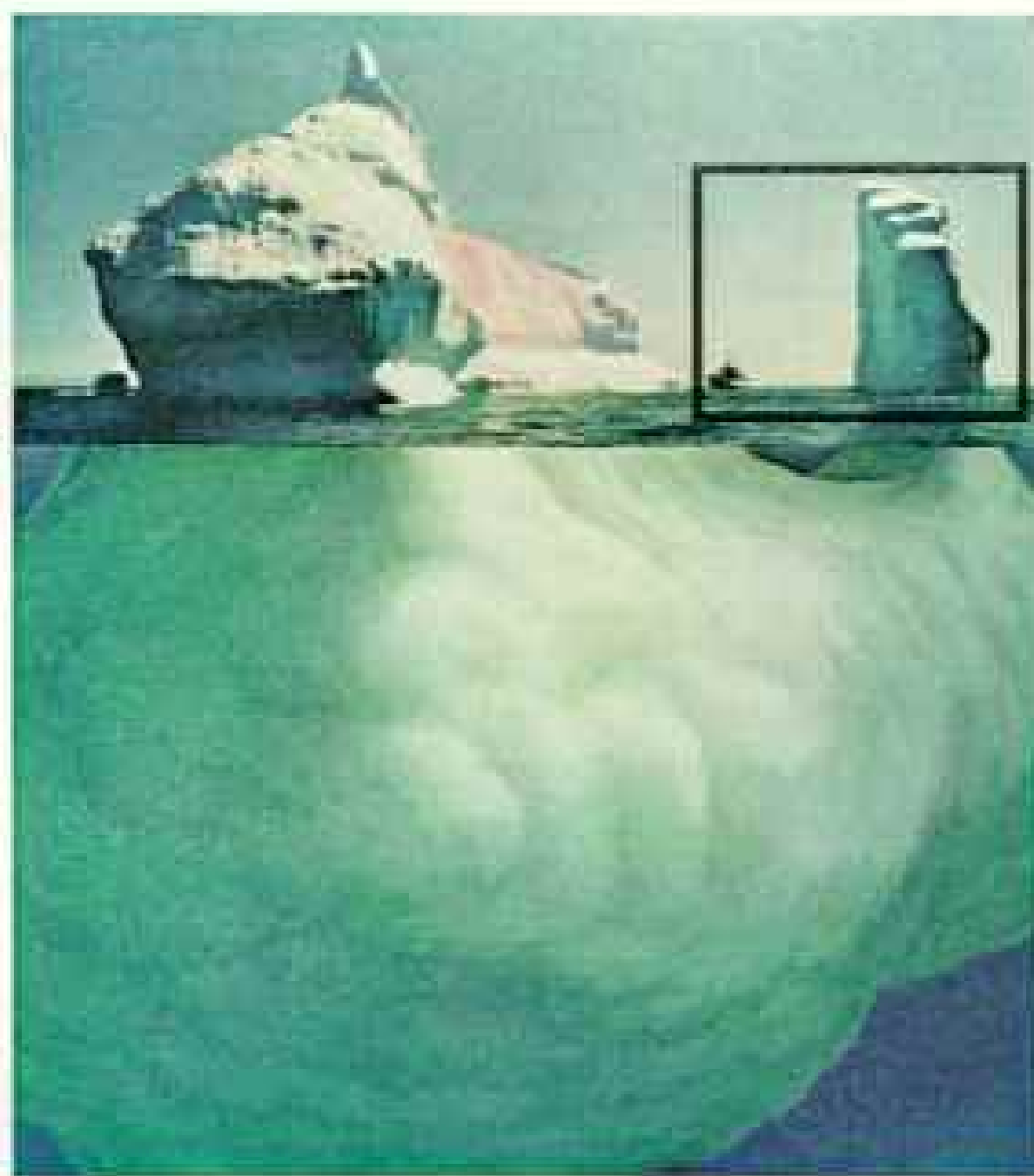
Matching water against a Forel Scale, a seaman checks color characteristics, an indication of the amount of minute marine life. *Evergreen* conducts such oceanographic experiments in addition to its iceberg research.



Dimensions of danger: Lt. Comdr. Kennard M. Palfrey, Jr., a Coast Guard oceanographer, uses a range finder to gauge a berg's size and shape.







RESEARCHED BY JAMES P. HILLARD, WITH ARTIST'S CONCEPTION FROM WATKINS © N.A.A.

An iceberg's awesome tower, its waterline smoothed and polished by waves, dwarfs the 180-foot-long *Evergreen* (left). But the picture above reveals it as a minor peak compared to a mountain of ice alongside, a part of the same huge berg. GEOGRAPHIC artist Robert W. Nicholson conferred with oceanographers to depict the iceberg's hidden dimension: a water-rounded mass seven times the size of both sunlit pinnacles.

—including the one we bombed. It was the ninth berg sighted but the first one suitable for marking, a decision based on size, configuration, and apparent direction of drift. In all, we flew 1,370 miles that day logging icebergs, as well as many berg fragments called "growlers" because of the noise they make when breaking up in warm water.

For most of our six hours in the air, Ensign Clasby trained his field glasses over the expanse of ocean, marking every potentially dangerous piece of ice on a chart. Other crewmen watched radar and an instrument called a microwave radiometer.

Ice is a poor reflector of radar waves. Even with a strong signal, the operator can't definitely identify the target. But most substances give off varying amounts of microwave radiation; the introduction in 1966 of the microwave radiometer made it possible to measure the emissions of targets at sea, thus distinguishing between ice and most ships. Although wooden hulls give readings similar to ice, part of the identification problem was overcome.

The *Hercules*, lighter now by 5,000 gallons of fuel, returned to Argentina, bringing new iceberg data and a sense of urgency to the base. Ensign Clasby made a final tabulation of sightings for dispatch by radio to patrol headquarters in New York.



There it would be condensed, combined with other sightings, and relayed back to Argentina for broadcast to ships at sea.

Coast Guard Radio Station NIK sends ice position reports in international Morse code twice a day. During the broadcasts, mariners throughout the Grand Banks region make it a point to listen.

Pushing my way into the cramped, windowless radio station, I was engulfed in a caldron of activity as Coast Guard men moved about, ministering to banks of clacking, squawking transmitters and receivers. The first of the two daily ice bulletins was being broadcast in a tattoo of dots and dashes.

A radioman gave me a partial translation:

790. "...southernmost bergs estimated at

46°10'N—51°05'W; 46°10'N—49°40'W;  
47°05'N—52°25'W."

"...bergs drifting southward along Avalon Peninsula south of St. John's to Cape Race."

"...close pack ice north and west of 47°35'N—52°00'W."

As I listened, I wondered if, at that very moment, a vessel plying the shipping lanes between North America and Europe was altering its course because of this latest information. Probably so.

On a clear day one can see an iceberg from a ship more than 15 miles away. But under the more normal conditions of spring and summer—when a tent of dense fog is staked out over the Grand Banks—an iceberg is seen only in that final, blinding moment of contact.



As a detector of ice, radar does not work as well from a ship as it does from an airplane. In 1959 a freighter was damaged after hitting a growler in the North Atlantic. The skipper later testified that he had read the radar screen faithfully every 10 minutes.

Even that was not often enough. Marine radar can detect a menacing "growler" some 8,000 yards away. When it is closer than 3,500 yards, however, reflections from choppy seas and spray often obscure the warning signal. Thus, for safety, a small, low-lying berg must be spotted within the intervening 4,500 yards. At 15 knots, a ship can cover that distance in nine minutes.

"There are seamen who cling to the myth that they can detect the nearness of icebergs

by taking water temperatures," a Coast Guard oceanographer told me. "Icebergs do not make the water around them colder. When a sudden lowering of the water's temperature is detected, it usually means that the vessel has moved into the Labrador Current."

In the face of so many uncertainties, it is no wonder that ship captains pay careful attention to the staccato voice of Station NIK.

### "Try Not to Hit Us"

After accompanying the crew of the Hercules on one dye-bombing mission, I went aboard the *Evergreen* and saw another. We were at sea for three days before encountering an iceberg judged suitable for marking. The highest and slenderest of the berg's three



APPROACHES BY JAMES R. HILLARD © R & F

Satellite photographs taken more than 850 miles up help an oceanographer at Ice Patrol headquarters on Governors Island, New York, determine the extent of pack ice surrounding Greenland. But satellite sensing techniques need refining before such surveys from space can distinguish with certainty between ice and clouds.

**Prison of ice:** A ship crosses the harbor of St. John's, Newfoundland, through a chilling white mosaic. Soon heavier ice moved in, closing the port in the spring of 1967 for the first time in two years.

pinnacles towered more than 16 stories. The ghostlike thing dwarfed *Evergreen*. Even veteran members of the patrol stood at the rail of the ship and stared, as I did.

The patrol plane radioed that it was descending to 250 feet for a bombing run on the sharp tip of the highest pinnacle. Lt. Comdr. Arthur Solvang, skipper of the *Evergreen* and a man whose devotion to ships and the sea compels him to fling gentle gibes at flying machines, replied, "Well, try not to hit us."

From the plane's open doorway a speck grew larger and hurtled toward the berg. I heard no crash when the dye-bomb hit, but watched a red streak slowly spread down the 900,000-ton steeple of ice.

"Right on the mark," said Lt. Comdr. Kennard M. Palfrey, Jr., a Coast Guard oceanographer. He and his six-man crew were on the buoy deck, working with instruments to measure the flow of currents. Each spring aboard the *Evergreen* they conduct tests relating the effects of wind and currents to the drift and deterioration of icebergs (page 787).

Information from the tests is fed into a computer aboard the *Evergreen*. Comdr. John E. Murray, Chief of the Coast Guard's Marine Sciences Branch and Ice Patrol Section, sees the time when iceberg tracking will be fully automated. Ice zones will be scanned by satellites, revealing information that computers will use to predict where a certain iceberg will drift and how fast it will deteriorate.

At present, a photograph produced from satellite data cannot offer a clear distinction between a cloud cover and an ice field (preceding page). Until it can, Coast Guard men will continue to hurl mayonnaise jars from Hercules aircraft, and the 180-foot *Evergreen* will continue to log long months at sea in some of the world's foulest weather.

### Bergs Survive Bombs and Shells

"We were out for 27 days on one trip last year, and the weather was so bad we couldn't work for 24 of those days," Chief Warrant Machinist John G. Ryan said. *Evergreen's* officers were seated around the felt-covered table in the wardroom. On a bulkhead hung a replica of a life preserver from the *Titanic*.

There was talk of other storms, including the one we were scheduled to encounter the following day. The officers spoke, too, of the indestructibility of glacier ice. Icebergs seldom survive longer than two weeks after drifting into the Gulf Stream. But they have surrendered to nothing else—not to:

- A massive assault by thermite bombs, as

Amid anguished cries, the mighty *Titanic* sinks to her doom on April 15, 1912.

The ghostly mass of an iceberg had shown itself only in the last paralyzing moment of catastrophe. With muted screech, it slashed into the steel hull of the "unsinkable" luxury liner. Even as icy water cascaded into compartments and saloons, unbelieving passengers refused to enter lifeboats, which could take only about half those on board. The ship's band, legend has it, played "Nearer My God to Thee" as the great floating city upended and slid beneath the waves. More than 1,500 perished.

Loss of the *Titanic* gripped the world with a chilling awareness of an iceberg's potential for tragedy. In 1914 representatives of the world's maritime powers created the International Ice Patrol. On guard ever since—except for the years of the two World Wars—the Patrol has an enviable record; no lives have been lost to collisions with bergs in the area it serves.



was tried in 1959, resulting in a lot of smoke and a few blackened holes.

- Hits by torpedoes and shells from five-inch guns. Again, much smoke, little damage.
- Detonation of land mines, which raised great showers of ice with little effect.

In experiments that appeared promising, lampblack was dusted on the ice to absorb the sun's heat and thus hasten melting. Further tests are scheduled next year.

It was glacier ice that on May 27, 1945, touched off a chain of collisions involving about a fourth of the ships in an 80-vessel convoy. Germany had by then surrendered, but fear of unnotified U-boats held Allied ships together. To avoid an iceberg that rose up in the fog 300 miles off Newfoundland's Cape Race, the convoy made a 90-degree turn to port. Chaos followed, with ships ramming each other and two of them striking the ice. No one





PAINTING BY HARPER GOLF © EQUINE, INC.

died, but several ships suffered heavy damage.

As recently as 1959 a Danish ship, the *Hansa Hedtoft*, struck an iceberg—outside the area covered by the International Ice Patrol—and went down with a loss of all 95 persons aboard.

#### Common Enemy, Ice, Unites Nations

The wind freshened now and *Evergreen* began to roll. We picked up speed to keep ahead of pack ice pushing down from the north.

The ocean had suddenly become a black meringue of swirls and swells. Waves vaulted over the sides of *Evergreen* and crashed down on the buoy deck with shuddering force. And then it seemed that the sea was in the hands of demons; they let it go slack and snapped it taut, sending the ship hurtling up and down in a not-so-funny game of blanket toss.

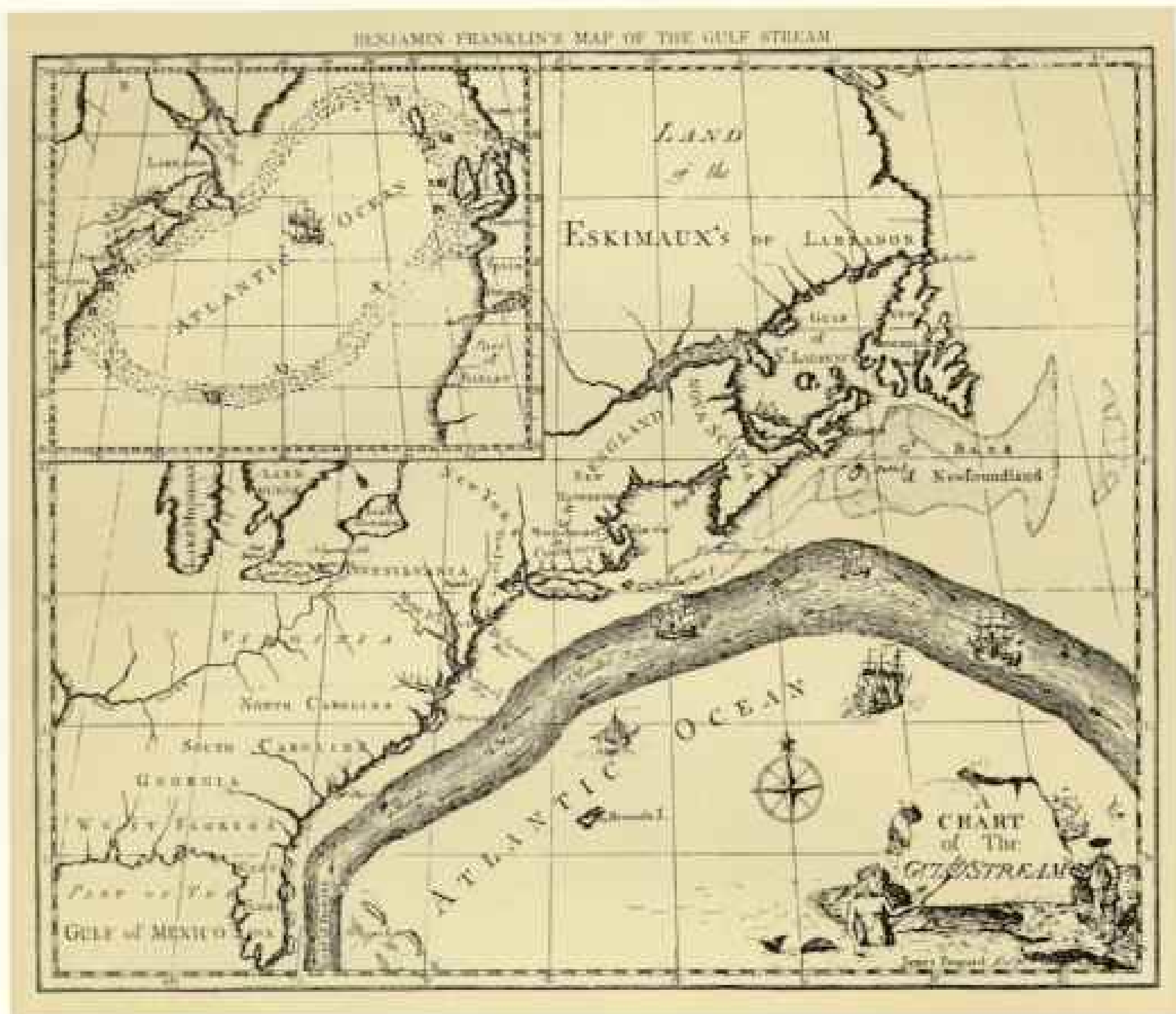
The gale raged for 24 hours, becoming so violent at times that I was propelled from my

seat, like a cork fired from an air gun, three or four times while watching an old Gary Cooper film being shown aboard ship.

On our run back to Newfoundland, I reflected on the efficiency of the operation and the dedication of the men who see it through, year after year. It was easy now for me to understand why the International Ice Patrol has endured; why indeed there has never been a more successful international effort for the preservation of life and property at sea.

I carried those thoughts with me into the ship's radio shack. It was evening and the last ice bulletin of the day was coming in from Argentina. This time there was the annual postscript to the message, a pithy reminder that what happened exactly 55 years ago that day would not go unremembered:

"RMS *Titanic* 41°46'N—50°14'W. 15 April 1912. Rest in peace." THE END



COURTESY COAST AND GEODETIC SURVEY

Don't fight the Gulf Stream, Benjamin Franklin advised captains of British mail packets sailing west to the New World in 1769. As Deputy Postmaster General of the Colonies, he had received complaints of letters taking two weeks longer westbound than eastbound. The American Philosophical Society printed Franklin's chart in 1786 with another member's map of the herring migration (upper left).

## Two Faces of the

**H**AS THERE always been an Atlantic Ocean? Or were Old World and New—Europe and Africa, North and South America—once a single great land mass?

What gigantic forces raised the world's mightiest mountain range down the center of the Atlantic basin? Is it still growing, and the ocean itself becoming wider?

Such scientific enigmas dramatically come to life on the latest and final map of the National Geographic Society's World Atlas Series, a double portrait of the Atlantic Ocean distributed with this issue.\*

On one side of the new map, the visible face of the Atlantic and the lands around it unfold

in a single sweeping view of one-third of earth's circumference. All of South America, nearly half of North America, and much of Europe and Africa appear—rivers, mountains, cities, and nations, including four of the world's youngest: Guyana (rhymes with Diana) and Barbados in the Americas, Botswana and Lesotho in southern Africa.

On its other side, the Atlas Plate presents an unseen panorama, the Atlantic Ocean Floor, a vast and mountainous submarine

\*Additional copies of the Atlantic Ocean-Atlantic Ocean Floor map may be ordered—along with any others of the 55 previous World Atlas Plates—for 50 cents each, plus 10 cents postage, from Dept. 509, National Geographic Society, Washington, D. C. 20036.



Eying earth from 22,300 miles, a U. S. satellite made this TV-transmitted photograph of almost the entire Atlantic Ocean, all of South America (center), and parts of North America, Greenland, Europe, and Africa.

# Atlantic



DETAILS OF (TOP) BY NASA FROM ATS-11 SATELLITE PHOTOGRAPH BY ADAM WOOLFIT © N.G.S.

Renowned panoramist Heinrich C. Berann (right) studies a transparent chart of the South Atlantic. Dr. Bruce C. Heezen (left) and Miss Marie Tharp of Columbia University's Lamont Geological Observatory produced the detailed physiographic diagram.

Teamed with Dr. Heezen by the National Geographic Society, Mr. Berann painted the masterful view of the **Atlantic Ocean Floor** supplementing this issue. The two men collaborated on the **Indian Ocean Floor** painting in the October, 1967, **GEOGRAPHIC**, which won acclaim from geographers.



**Swordfish skewers a submarine:** When the Woods Hole Oceanographic Institution research vessel *Alvin* dived 2,000 feet to the Atlantic floor off Georgia last July, U. S. Navy pilot Valentine Wilson saw what appeared to be a six-foot-long black rock. "Suddenly the 'rock' came to life and charged at high speed," reports Wilson. The 200-pound fish buried its sword in the sub's Styrofoam sheathing, dangerously near vital wiring. Surfacing, the crew subdued the attacker, and all hands enjoyed swordfish steaks for dinner.



FOODCOLOR (ENTIRE) AND EXCHROME (LOWER RIGHT) FROM WOODS HOLE OCEANOGRAPHIC INSTITUTION

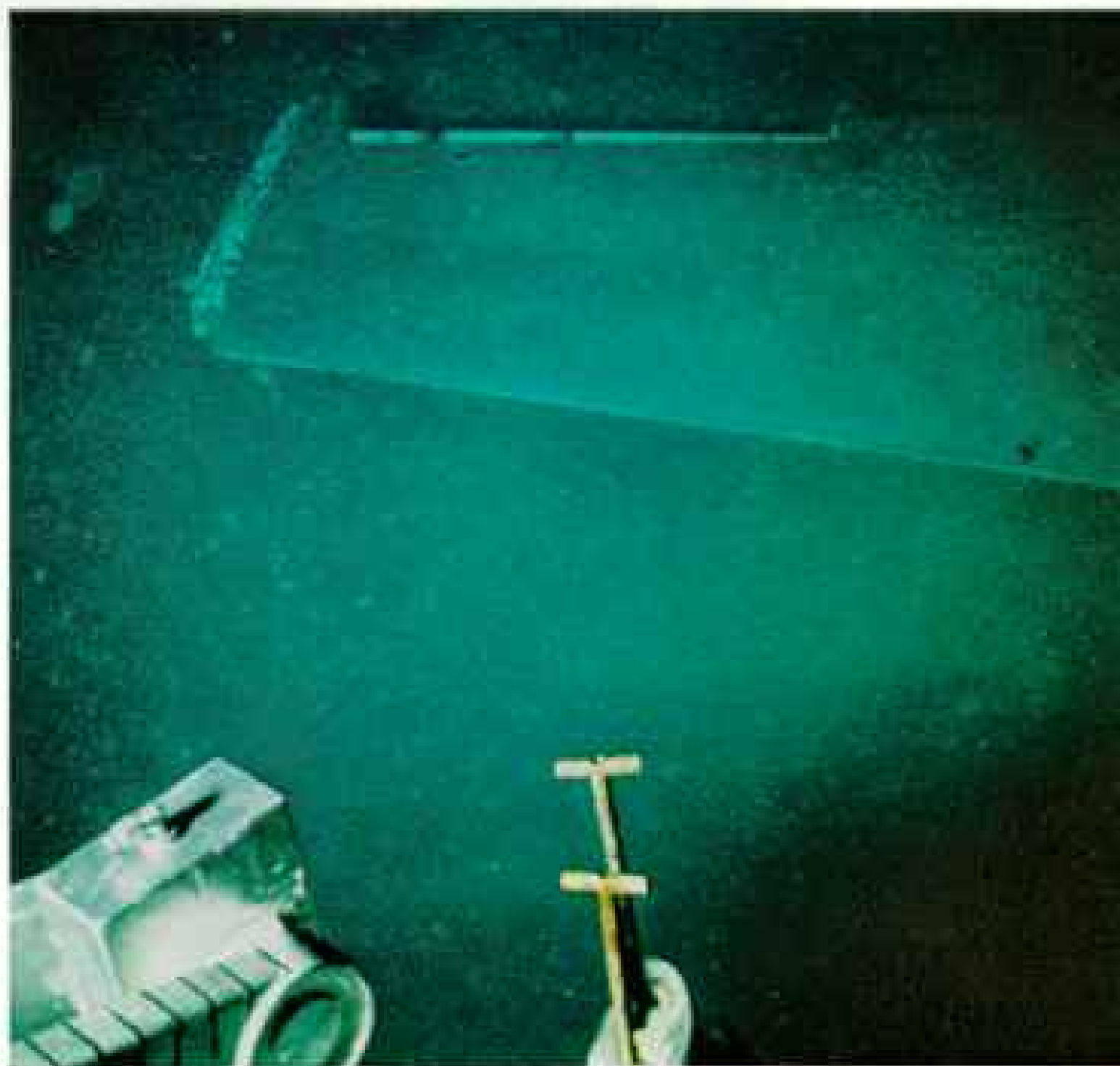


FOODCOLOR BY VICTOR S. BIRDWELL, JR., NATIONAL GEOGRAPHIC STUDY © N.G.S.

**Microscopic diatoms,** the "grasses" of the oceans, form the basis of a food chain that feeds virtually all marine animals, from crustaceans to whales. Each link-like *Synedra puchella* and pencil-shaped *Melosira borrceti* is a single plant.

**Sea diamonds,** sucked by dredges from the Atlantic floor off South-West Africa, average between 1/10 and 1/2 carat. Some are as large as seven carats. Ninety percent rank as gem stones, compared with 20 percent among land-mined diamonds.

EXCHROME FROM DE BEERS CONSOLIDATED MINES, LTD.



**In a mile-deep grave** off Nantucket Island lies a U. S. Navy F6F fighter plane, intact and in near-mint condition after 23 years on the bottom. Discovered last summer by the *Alvin* (foreground), the Hellcat had ditched in the Atlantic the year before World War II ended. Open canopy and empty cockpit indicate the pilot probably leaped clear, but Navy records cannot establish his identity or fate.

expanse covering one-sixth of the world's surface. Here the S-shaped trough of the Atlantic lies unveiled, drained of its 85,000,000 cubic miles of water. As if suspended high above the earth, the viewer gazes down on an infinitely varied suboceanic landscape—on blue-black trenches plunging as far as five miles down; on violet abyssal plains averaging three miles below the surface; and on lighter blue continental slopes and shelves rimming the buff-hued continents.

#### Shelf Edges Match Like Jigsaw Pieces

Half a century ago a German scientist, Alfred Wegener, noted the remarkable "fit" of the four continents facing the Atlantic and put forward his theory of continental drift. He argued that those land blocks must long ago have moved apart, forming the ocean between.

Disputed for decades, Wegener's notion has won much support in recent years. British oceanographers, using a computer, showed that the Atlantic's continental shelves—rather than its present shorelines—fit so precisely as to all but rule out chance. And American geologists in 1967 reported an exact coincidence between rock strata in Brazil and on the bulge of Africa.

Towering along the center line of today's ocean basin stands the massive Mid-Atlantic Ridge, craggy as the back of a 10,000-mile-long crocodile. Totally unknown a century ago, the ridge has been charted in detail only in the past 20 years. Your Society in the late 1940's supported the first precise mapping, made possible by continuously recording depth sounders developed during World War II.

Interpreting millions of such soundings, geophysicists Dr. Bruce C. Heezen and Miss Marie Tharp of Columbia University's Lamont Geological Observatory produced a finely detailed diagram of the Atlantic floor. Their work enabled the National Geographic Society to commission Austrian artist Heinrich C. Berann to create the extraordinary map-painting that backs the new **Atlantic Ocean Atlas Plate**. Publication of this first such double map—with both charts on a scale larger than that of a 16-inch globe—represents a milestone in the Society's long association with oceanographic study, and adds a new dimension in ocean mapping.

Two significant features mark the jagged Mid-Atlantic Ridge. A narrow rift valley slices the great spine lengthwise, evidence of the range's volcanic origin. Here violent eruptions

continue, and unseen by man, molten rock constantly wells up through the rift as the sea floor—and the continents as well—move apart approximately an inch a year.

Second, the ridge is cut by scores of east-west fractures, as if slashed by a gigantic cleaver. Each scar represents an abrupt break in the mountain chain, related in some way to the spreading of the ocean basin. Their exact cause is still one of the Atlantic's unsolved mysteries.

The surface map of the Atlantic likewise reveals the latest knowledge of the visible oceanic world. Seventy miles southeast of Reykjavik, Iceland's capital, a new island appears: Surtsey, cast up by an undersea volcano.\* Three map insets show other islands thrusting above the South Atlantic: Ascension, St. Helena, and Tristan da Cunha.

Color-coded arrows on the new Atlas Plate trace a vast circulation system driven by the Atlantic's restless winds and currents.

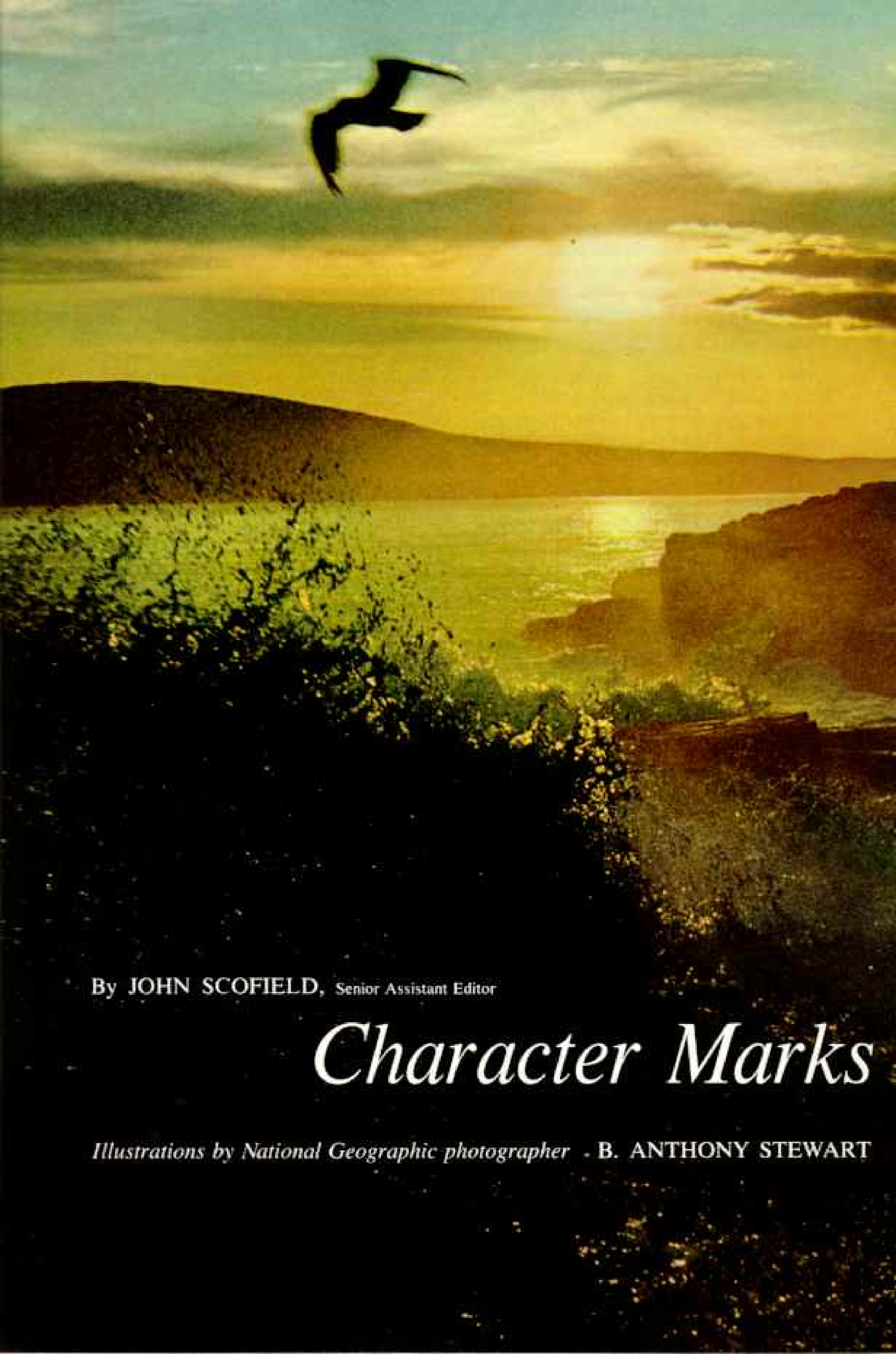
In 1955, on an islet in the Bahamas, a pickle bottle with a note inside was found by a vacationing American industrialist, Frederick C. Crawford of Cleveland, Ohio. It had been cast adrift from the south coast of England 37 months before by two British picnickers. Mr. Crawford added a letter and photographs and, on his way home by plane, dropped the bottle back into the Gulf Stream. Eighteen months later a British soldier from Kenya, on leave in northern Scotland, found the bottle washed up on a North Minch beach—the end of a round-trip drifting voyage of at least 10,000 miles in 4½ years.

#### Ocean's Bounty Comes in Many Forms

On the surface and beneath, the Atlantic still gains in significance to man. Oil and gas rigs drill into rich deposits under the Gulf of Mexico and the shallow North Sea. Off South-West Africa's Orange River mouth, barges dredge up streams of mud and gravel to extract precious diamonds (opposite).

Yet the Atlantic's greatest bounty remains a living one—fish. More than a third of the world's catch comes from this one ocean, mainly in herring, cod, tuna, and menhaden. Thus, on shallow fishing banks as in deeps and rifts, the Society's new two-sided map of the Atlantic charts an arena of exploding promise and knowledge—and a continuing challenge to oceanographers. **THE END**

\*See "Surtsey: Island Born of Fire," by Sigurdur Thorgeirsson, NATIONAL GEOGRAPHIC, May, 1965.

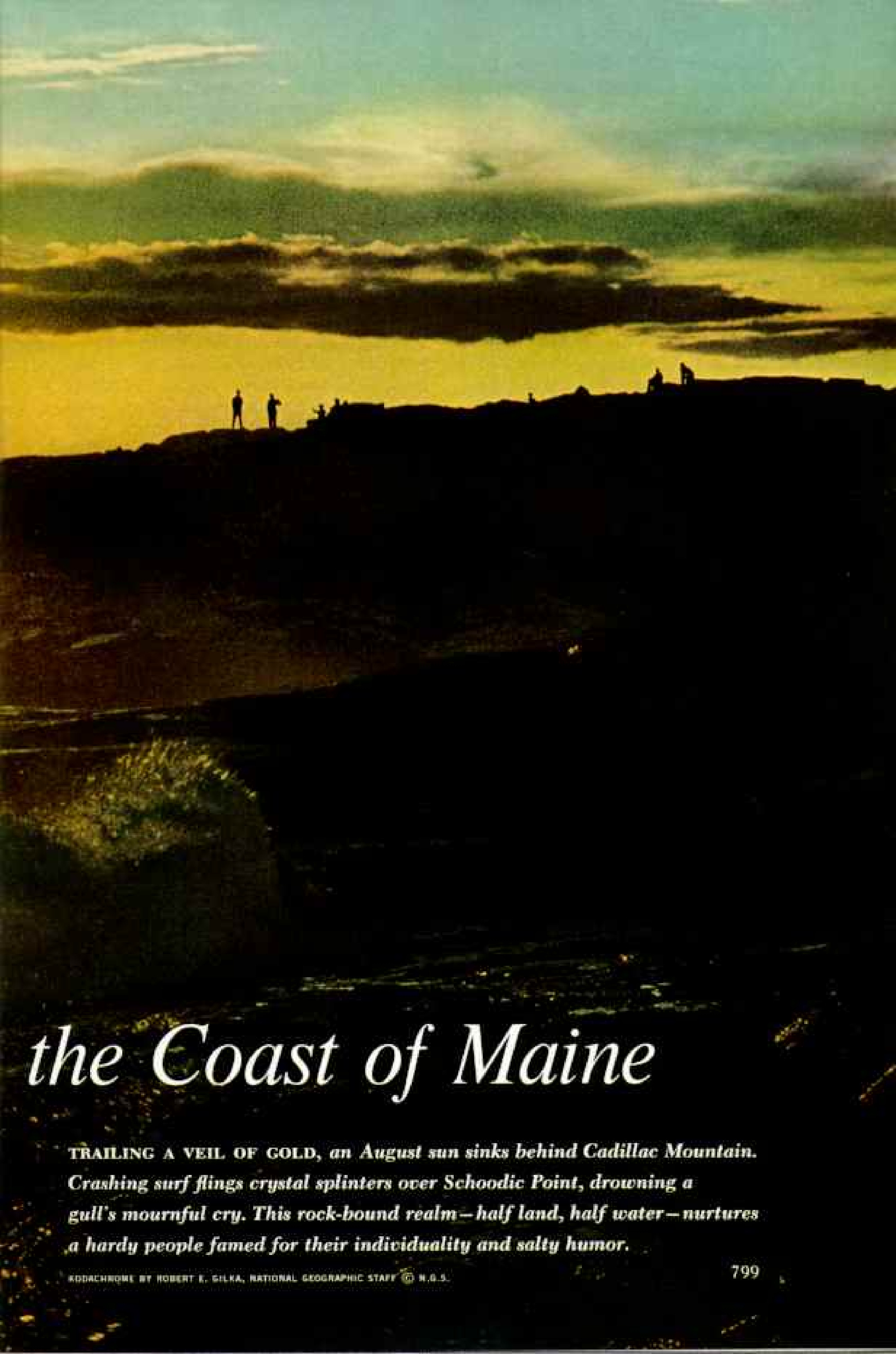


By JOHN SCOFIELD, Senior Assistant Editor

# *Character Marks*

*Illustrations by National Geographic photographer* · B. ANTHONY STEWART





# *the Coast of Maine*

*TRAILING A VEIL OF GOLD, an August sun sinks behind Cadillac Mountain. Crashing surf flings crystal splinters over Schoodic Point, drowning a gull's mournful cry. This rock-bound realm—half land, half water—nurtures a hardy people famed for their individuality and salty humor.*

**S**OME VACATION SPOTS seem to belong more to the folks who visit them than they do to the people who live there. Atlantic City, for instance. But the coast of Maine, now—that's different.

Don't jump to the wrong conclusion. Maine extends as warm a welcome to summer visitors as any place I know. But every time my family and I return to this magical strip of surf-laced seashore, I realize one thing anew:

The Maine coast belongs, first of all, to the good, solid, independent New Englanders who live there and whose ancestors lived there before them. They're "sot in their ways," as a great-aunt of mine used to say, and no tide of July-and-August migrants is likely to change them an eyebrow's worth.

"Which way to Calais," I once asked at a combination grocery store and gas station,

using what I assumed anyone would know was the French way—the correct way—to pronounce the name of Maine's northernmost coastal town: CAL-LAY.

"Never heard of it," the man at the pump said flatly. I pointed to Calais on a map.

"Well, whyn't you say where you wanted to go?" he shot back, exasperated. "Callus," he said, and aimed a finger straight up the road, due north. "It's down they-yuh."

And they-yuh we are, too, face to face with a question that has to be answered before we can even start to explore the coast of Maine. Why do people call it Down East?

The most likely explanation for this curious term, which leads visitors farther and farther northeastward along the Atlantic's edge until they finally end up down in Canada, harks back to the days of sail. Maine ships coasting



home from Boston enjoyed prevailing winds astern—a “downhill run,” in sailor’s parlance. And along a shore where sail is still a familiar and well-loved thing, the name survives.

#### Port of Call for Polaris Subs

The Maine coast begins, for most visitors, when they cross the Piscataqua River from Portsmouth, New Hampshire, and drive on into the little town of Kittery (map, next page). Few even lift their feet from the gas pedal, for the southernmost of Maine’s vacationland attractions—York Beach and Ogunquit’s summer playhouse—lie only minutes ahead. But don’t expect that kind of indifference toward Kittery from Uncle Sam’s submariners. It’s a big name in their lives, almost as big as New London or San Diego.

The reason is an installation called the

Portsmouth Naval Shipyard, and the majority of its 8,300-man force works on U. S. Navy submarines. (Oddly enough, the yard has nothing at all to do with Portsmouth, New Hampshire. It takes its name from Portsmouth Harbor and lies entirely in Maine.)

When I was last there, three undersea vessels were taking shape at once within fantastic cobwebs of scaffolding and lights. Two, the attack submarines *Sand Lance* and *Grayling*, would be propelled by the atom’s magic. The third was an experimental deep-diving craft. But Portsmouth is even prouder of its role as a “service station” for some of the Nation’s 41 Polaris-missile subs, each of which patrols the seas with more fire power aboard than was delivered by all the bombs dropped during World War II.

“They come here for servicing only once in



KIDSCHEMBO BY JAMES H. HOLLAND (ROCK) AND B. ANTHONY STEWART (C) N.C.C.

Fingers work fine, a boy discovers as he tackles his first lobster. Last August, visitors at Rockland’s four-day sea-food festival devoured more than three tons of the succulent crustaceans.

Lazing a summer day away, vacationists at Kennebunk Beach drowse beside a sandy cove amid surf-carved rocks. Youngsters hunt in tidal pools for periwinkles and starfish. Only the hardiest try the water, rarely warmer than 60° F.



about five years," a shipyard engineer explained, "But when they do, it's quite an overhaul. Takes the better part of a year and costs a surprising percentage of what it took to build the ship originally."

Barely awash in a drydock as long as a city block lay the \$110,000,000 U.S.S. *Sam Houston*, scarred and abraded like some battle-weary sea monster. "She's been at sea for 4½ years," her executive officer, Lt. Comdr.

John D. Leonard, Jr., explained. "She was on submerged patrol two-thirds of that time."

Inside, the vessel was a gleaming maze of stainless steel and formica studded with dials and gauges and laced with miles of pipe and cable. I peered down into one of the tubes that had recently held 32-foot-long Polaris nuclear missiles and threaded my way past the *Houston's* two inertial guidance systems, which keep tab on the submarine's position



CONVOLUTED as storm-tossed seaweed, the shoreline of Maine winds for 3,478 miles, though by straight line it spans only 228. A seaside mountain range until the Ice Age, the land was carved by glaciers and half drowned by melting ice. Mountain peaks formed some 400 islands. Massachusetts claimed it all until Maine won statehood in 1820. Sailors coasting downwind from Boston gave the shore its nickname, Down East. Today a third of Maine's 989,000 people cluster within smelling distance of the sea.

moment-by-moment as she prowls the ocean depths. Actually they are complex timepieces, which must operate within an allowable error of only 30 parts in one billion—in simpler terms, 90 seconds in a century!

"If we didn't know where we were at this end," said Lieutenant Commander Leonard, "we wouldn't have much hope of hitting a target 1,500 miles away at the other."

Outside again in the soft sunlight of coastal



## Ocean

Maine, I turned my car north—and within minutes had slipped clear out of the Atomic Age. That's the way Maine is, for the state abounds in a very special kind of museum, the sort townspeople lovingly assemble to capture their own particular and local past. Cases and shelves of simple, everyday objects—knives and forks, lanterns, quilts, scythes, toys, and the like—speak movingly of bygone times. And the buildings themselves are often as eloquent.

In York Village's Old Gaol (and don't, for



## Down East

THE RUGGED, HARBOR-DENTED COAST OF MAINE



County names in red

State Park Lighthouse Ferry Airfield

DESIGNED BY JOHN W. LEITCHER  
 COMPILED BY ROBERT A. NICHOLSON, ESQ., BY U.S. GAZETTE  
 GEOGRAPHIC ART DIVISION  
 NATIONAL GEOGRAPHIC SOCIETY

goodness' sake, spell it J-A-I-L if a York resident happens to be looking over your shoulder) I climbed narrow stairs to a second-floor room and saw carved neatly into the floor 1234567 and so on up to 20, and then the date, 1846, all run together.

"We know exactly who did that," a museum hostess explained. "Town records show only one prisoner who was sentenced to 20 days in that year." The numbers, which have kept alive for so long the gloom and boredom of a man confined day after day to that tiny attic room, were carved by one Edward Grant, a York laborer committed for assault and battery on October 19, 1846.

Another of my favorite bits of the past



© SHUTTER

occupies a stretch of sandy grassland near Kennebunkport. But this one preserves an aggregation that may not mean much to you unless you spent your boyhood in a pre-World War II city. I did, and trolley sounds—the hard clang of a motorman's foot bell, the clunk of an overhead fare register, the shriek of iron wheels against curved and greaseless track—evoke in me an almost painful nostalgia for the Washington, D. C., in which I grew up.

Some 900 trolley-car buffs have united in a valiant effort to preserve at Kennebunkport this all-but-extinct mode of transport. They have succeeded remarkably well. Car barns shelter relics ranging from horsecars to streamliners, and visitors can savor a 15-minute stretch of bumpy track across the salt grass aboard a car that still bears evocative car cards of half a century ago: Beat Germany. Buy a Liberty Bond.

#### Artist's Joke Cloaks Serious Purpose

Along with its vintage trolley cars, southern Maine may one day have an even more peculiar accumulation for its visitors to gawk at: an exhibit of "dumpobilia"—the odds and ends that turn up on municipal rubbish heaps. I asked a dignified matron in Kennebunk if she knew about it.

"Dump museum?" she sniffed. "That's certainly not us! Must be those folks over t'Kennebunkport."

Sure enough, back over t'Kennebunkport (4½ miles away), I found an otherwise perfectly sane artist named Edward Mayo quite willing to take the blame for the Nation's first dump association, complete with a "bored" of







Beloved bard, Henry Wadsworth Longfellow (right) grew up in Portland, where his family home, now a museum, perpetuates his memory. In 1829, at 22, he taught at Bowdoin College in Brunswick. Longfellow's pen immortalized his fellow Americans—the village blacksmith, Hiawatha, Paul Revere—and his popularity spread. He is the only American honored with a bust in the Poets' Corner of Westminster Abbey, London.



PAINTING COURTESY WADSWORTH LONGFELLOW HOUSE, PORTLAND, MAINE

"The thoughts of youth are long, long thoughts," remembered Longfellow, writing about his boyhood in Portland. In Deerings Oaks, a wood the poet knew, a daydreaming child ponders a wild Canada goose swimming with a flock of tame white ducks.

Dark-tempered day sends wintry blasts along Congress Street in Portland, Maine's largest city. Across eight miles of wharves facing Casco Bay, it handles 20 million tons of import cargo a year, chiefly oil on its way from the Persian Gulf to Montreal.

(ABOVE) AND (THIS PAGE) BY B. ANTHONY STEWART © N.Y.S.



In rustic setting, a sophisticated English comedy, *On Approval*, unfolds at the Boothbay Playhouse. Resident professionals, working with young apprentices, perform nine plays—modern dramas and revivals—during each summer season, from the Fourth of July until Labor Day. At intermission time, audiences browse amid a unique collection of theatrical mementos, among them Sarah Bernhardt's headdress for *Cleopatra* and the tunic Edwin Booth wore in *Hamlet*.

directors and an annual poolside beauty contest. The last affair ended, he told me solemnly, with a Miss Dumpy and a 19-way tie for second place.

The association's "credit card" and its jocular threat to create a dump museum hinted at a more serious purpose than poking fun at thrifty Maine folk who make two or three trips a week to the municipal dump so they won't have to pay someone to cart off their household litter. The bearer, says the card, holds "national dump visiting privileges, making it unnecessary to use the roadside."

"Nothing else has stopped the litterbugs," said Mayo, "so we thought we'd try the humorous approach."

#### Pollution Threatens a Maine Delicacy

Ed Mayo's brain child points up a problem, though, that few Maine people find amusing. Here, as elsewhere, abandoned automobiles create rusty scabs on beaches and roadsides, and Maine's independent-minded islanders follow hallowed tradition by taking their trash to the beach at low water; the incoming tide redistributes it, with fine impartiality, over their own property along with that of their neighbors.

An even grimmer ailment has left its mark heavily on Maine's rock-bound coast: urban and industrial pollution. Relentlessly, over the past 15 years or so, waste from cities, paper mills, and poultry plants has forced fisheries authorities to shut down many of the tidal flats that yield the state's succulent steamer clams. Today, the clams you eat on a Maine wharf may have been trucked north all the way from Chesapeake Bay.

While towns and industrial plants try to put their problems in order, hopeful signs have appeared in another direction: the preservation of parts of Maine's coast in the lonely, unspoiled grandeur it enjoyed before the first Europeans came.

Islands and cliffs, strips of wave-lashed shorefront, and a dramatic peninsula already



have been set aside, and the generosity of a beloved summer resident brings the assurance that more will be protected for generations to come. Author Rachel Carson left a trust fund jointly to the Sierra Club in the West and, in the East, to another organization dedicated to preserving wilderness, the Nature Conservancy. The latter's share, Miss Carson's will stipulated, was for the preservation of seashore areas "preferably in the State of Maine."

"Funds from Miss Carson's gift may not be available for some years," says Maine conservationist Charles P. Bradford. "But the Nature Conservancy has already established the Carson Seacoast Project to begin work immediately, before industry and housing developments take from us the very things she wanted us to save."

As so often happens, such happy ideas tend to snowball. For instance, Maine only last



PHOTOGRAPH BY NATIONAL GEOGRAPHIC PHOTOGRAPHERS B. ANTHONY STEWART AND JOHN E. FLETCHER © N.G.S.

year accepted unspoiled Eagle Island, Adm. Robert E. Peary's summer home in Casco Bay. The admiral's daughter, Mrs. Marie Peary Kuhne, also proposes giving the state some of the North Pole discoverer's personal possessions for display in the island's lone dwelling.

#### Canadians Come South for a "Warm" Dip

Not even Miss Carson, of course, would have suggested that the whole Maine coast remain as it was when the Indians owned it—even if that were possible. Old Orchard Beach may look like Coney Island at times, but that's how a great many visitors prefer it. The most enthusiastic admirers of this strand are French Canadians who drive south for a dip. If you try it, though, remember that, except on the rarest of days, only a Québécois could possibly dunk himself in Maine's bone-chilling surf and consider it balmy.

So let's go on to Portland, Maine's largest

city and the hub of island-dotted Casco Bay. Some 72,000 people make their homes in Portland and on the closest-in of the "Calendar Islands" (local lore has it that there are 365 of them) that really count as suburbs. The city is a major port and southern terminus of an oil pipeline that has its other end in Montreal. But most visitors, I think, find it more interesting for its literary associations.

One March night in 1855, Henry Wadsworth Longfellow lay awake musing on his boyhood in Portland. The next day he wrote a poem, "My Lost Youth," and declared himself rather pleased with it. It begins:

*Often I think of the beautiful town  
That is seated by the sea;  
Often in thought go up and down  
The pleasant streets of that dear old town.*

Whenever I wander through this curiously unchanging city, I like to fancy that the poet's



shade still haunts the dark shores and the quiet streets,

*... the black wharves and the slips,  
And the sea-tides tossing free;  
And Spanish sailors with bearded lips,  
And the beauty and mystery of the ships.*

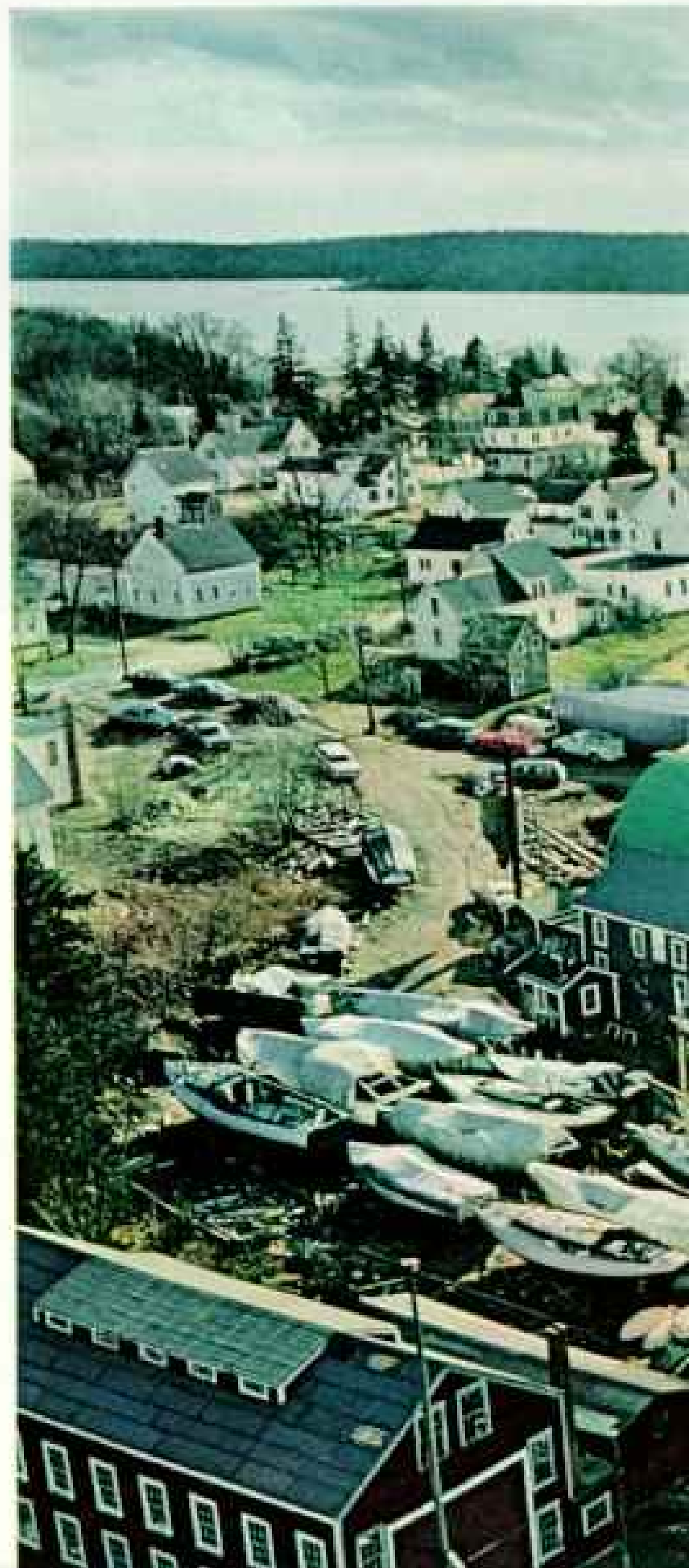
Foreign craft still crowd the docks along Commercial Street, and bearded Spaniards must still come ashore with the Italians and Germans and Japanese and the others who unload cargoes on Portland's doorstep.

Champagne and smiles launch a replica of the yacht that began the *America's Cup* tradition. Brewer Rudolph Schaefer conceived the re-creation; his daughters, Mrs. William H. Combs and Mrs. Peer T. Pedersen, christen her.

"Deering's Woods are fresh and fair," wrote the poet, and fresh and fair they remain (page 804). Portlanders know them as Deerings Oaks and go there to stroll in spring or to skate on Deerings Pond in January.

But Longfellow's voice rings clearest of all in what he called "the peaceful threshold of home," the fine old house at 487 Congress Street that for 115 years sheltered the Wadsworths and the Longfellows. Henry W. grew to manhood in its 15 rooms and warmed himself before its eight fireplaces, which

"Rakish, piratical-looking craft," as the English called the original *America*, could describe her 104-foot look-alike, seen here on christening day, May 3, 1967, at the Goudy and Stevens



swallowed 30 cords of good oak and birch to ward off the chill of one Portland winter.

The memory of Longfellow is green, too, in neighboring Brunswick, a pleasant college town with a main street appropriately named Maine Street. Laid out in 1717 with a width of 12 rods—198 feet—it ends at the town's handsome, white-frame Congregational First Parish Church. Just beyond the church lies the green campus of Bowdoin College, where both Longfellow and novelist Nathaniel Hawthorne were members of the class of

1825. Only one class ahead of them was a New Hampshire lad named Franklin Pierce, who went on to become fourteenth President of the United States.

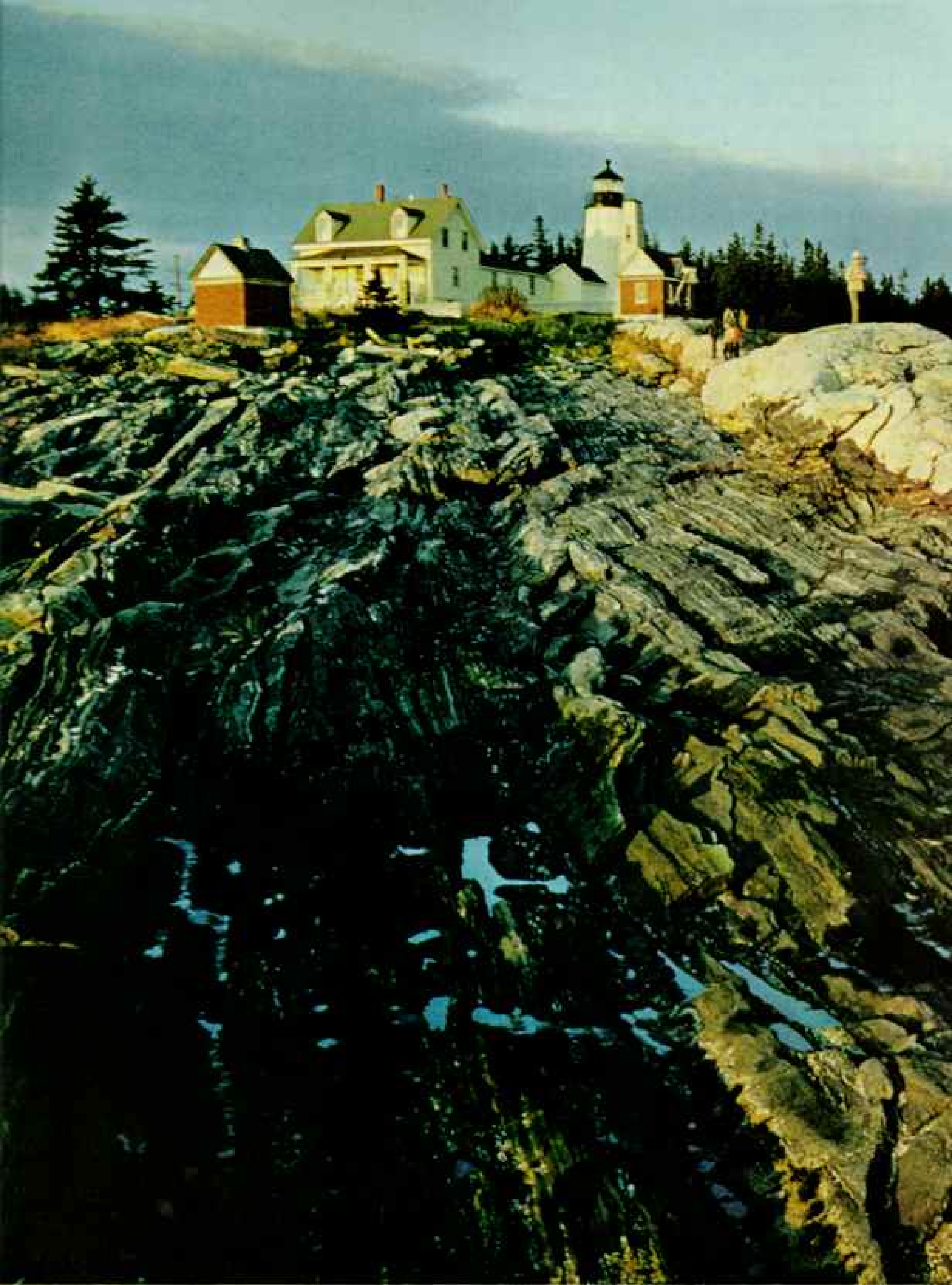
Henry Longfellow and his brother Stephen boarded for their first year or two at Parson Titcomb's house on Federal Street near the Bowdoin campus, and Henry became the college's first Professor of Modern Languages. But the Titcomb house had to wait for nearly a third of a century after the Longfellow boys had left for its fame to be really assured. That

shipyard in East Boothbay. On August 22, 1851, the first *America* entered England's major sailing event at Cowes. Despite jeers, she won the day-long race with minutes to spare. The age of sail brought Maine fame and fortune as her shipyards turned out barques, brigs, sloops, and schooners bound for the far quarters of the globe. With the coming of steam and steel, shipbuilding declined. Today, however, old skills revive as the demand for pleasure craft increases.

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PHOTOGRAPHY (BELOW) AND EXTENDED BY ARTIST. GEOGRAPHIC PHOTOGRAPHER JOSEPH J. SCHERER. © N.A.S.





Jagged rocks and a water-color sky frame the Pemaquid Point lighthouse, built in 1827. Once keepers spent lonely vigils on the peninsula, feeding oil lamps through screaming winter gales. In 1934 an automatic light was installed. Along the coast in the early 1600's, English fishermen





BOOKSHIRTS BY S. ANTHONY STEWART © M.A.S.

settled among the Indians. One tribesman, Chief Samoset, learned enough English to greet the Pilgrims at Plymouth during their first winter in the New World. Today archeologists unearth relics of those early days in the ruins of a 17th-century settlement and trading post at Pemaquid.



**A time for business:** Moderator Stephen Powell auctions a rabbit-shaped cake at the annual town meeting in Dresden. The light moment punctuated serious debate on the school budget, road maintenance, and tax deadlines. Almost 100 of Dresden's voting population of 383 met to decide local issues directly, a privilege exercised since 1794. Portrait shows Colonial Governor of Massachusetts Thomas Pownall.

**A time for friends:** During a winter afternoon in New Harbor, townsmen swap stories and share laughter at Lester Russell's barbershop. Postcards on the wall bring greetings from his "summer trade." Calendar pictures the fishing village in sunny July.



didn't happen until another Bowdoin graduate, Professor Calvin Stowe, moved in with his wife Harriet and their five children.

Harriet's brother was the famous abolitionist pastor Henry Ward Beecher, so it's not surprising that as she sat in the Congregational Church one Sunday morning in 1851, her daydreaming turned to the evils of slavery. A gentle Negro named Uncle Tom appeared to her, as if in a vision. That evening, back in the house on Federal Street, Harriet Beecher Stowe began work on *Uncle Tom's Cabin*.

#### Plaque Marks Best-seller's Birthplace

The novel became an electrifying success, appearing in 37 languages. Stores, restaurants, and streets were named for the book's kindly hero. Abraham Lincoln, Mrs. Stowe liked to tell people, called it the spark that ignited the Civil War.

More than a hundred years after that bitter conflict scarred the Nation, it was a moving experience to walk through fresh winter snow to Brunswick's stately old Congregational

Church, and to sit in the same pew once occupied by Mrs. Stowe. A bronze plaque no bigger than the palm of my hand marks the spot from which, in a way, this Nation's most tragic war was set in motion.

Now let's backtrack for a moment to Freeport, which we skipped when we went straight from Portland to Brunswick. Hunters and fishermen all over the world would be furious if we ignored it. Never mind Mrs. Stowe and the Longfellow boys. Freeport was put on the map by Leon Leonwood Bean. "L.L.," as he was known for most of his life, died last year at 94, but the \$4,000,000-a-year hunting and fishing equipment business he founded goes on in the same rambling complex of frame

buildings in downtown Freeport, and with the same thoughtfulness for its customers.

"We threw away the keys to this place years ago," L.L. used to boom in a voice more attuned to the north woods than to a salesroom. "A lot of our customers drive up from New York. They leave right after work and get to Maine in the middle of the night, so we never close. How else could they buy fishing licenses at three in the morning?"

Which brings us, logically enough, to the Maine character—that admirable blend of honesty, stubborn individuality, and outright thoughtfulness that sets the Down Easter apart from so many of his fellow Americans. But beyond that, please don't ask me to

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Bound for blue-water thrills, the last lady of the Gloucester dory-schooner fleet sails the Maine coast for pleasure. From 1926 until 1953, the *Adventure* plied fishing banks off Newfoundland, carrying grizzled dorymen who filled her hold with record catches of halibut. Now,

define the Maine character. The best I can do, after many visits to the state, is to give you some of its typical expressions.

For instance: An antique dealer I know decided the state's 4½-cents-on-the-dollar sales tax was an imposition on his customers, and refused to collect it. How did he stay out of jail?

"Oh, he wouldn't do anything *dishonest*," his wife explained. "He paid the tax himself."

And here's another: On one of the remotest of the offshore islands, a majority of the year-round residents insist on handing their letters

to the postmaster rather than using a spanking new red-white-and-blue mailbox that stands just outside his door. Why? "We're not unpatriotic," they say, "but that color scheme just doesn't go with the island!"

#### Town Problems Aired in Open Meeting

I think the ultimate expression of the Maine character probably lies in that venerable political institution the town meeting. Early in March, after the sap buckets have been hung on the sugar maples, Maine townspeople gather to chart the year ahead and to argue



EDMUND BYRNE © NATIONAL GEOGRAPHIC SOCIETY

on week-long trips out of Camden, vacationists help haul and set her 5,500 square feet of canvas, eat lobster on quiet island shores, and sleep in cabins that replace fish pens. The yawl boat, carried at the stern, nudges the engineless schooner into port when the winds fail.

spiritedly about how and where they will spend their tax money.

In little Dresden (voting population 383), which has held a meeting every year since 1794, I joined nearly a hundred residents in the shingled Town Hall and Grange building. Outside, under a warming sun, a steady patter of water dripped from snow-covered eaves. Inside, Moderator Stephen Powell's gavel punctuated the decisions (page 812): a new date for payment of taxes; aid to a hospital and to an old people's home; identical sums for each of the three cemeteries to which

Dresden entrusts its dead; a return from secret ballots for the election of town officers to the hallowed and public "ayes" and "noes" of open meeting; appropriations for road maintenance and the fire department.

Article 21 asked if the town would appropriate money for civil defense.

"If we have a bomb raid, I know where I'm going," announced the moderator. A voice from the benches asked where.

"To my apple cellar. There's four barrels of hard cider in there."

A final item: Should Dresden again give



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Wood carver's art embellishes the Page House in Wiscasset. Grapevine tracery topped by a dove imitates iron grillwork of the Victorian era. Edbury Hatch of Newcastle, a 19th-century carver of ships' figureheads, created the portico after work ran out in the shipyards.

abandoned automobiles and a number of tumble-down buildings.

"Then I move we do the same this year," the farmer said, "so long as it don't cost the town."

"What is your pleasure on this, ladies and gentlemen?" the moderator asked. "You have heard it moved and seconded that we appoint the committee as last year, so long as it costs the town nothing. All those in favor signify by saying 'aye.'"

A chorus of assent, and then silence when those against the motion were asked to vote. And so, for another year, Stephen Powell would call on his fellow townsmen whenever trash or an abandoned automobile marred the township's neat roadsides, or snow had to be cleared from outlying intersections. And it would be done without cost to the town, as a matter of the general welfare.

Not far from Dresden, the town of Bath sits beside the Kennebec River, dreaming

of a past compounded of ice and ships. Ice because New England's canny windjammer owners early discovered two things. First, that a half-ton block of ice, cut from the winter-bound Kennebec and packed in sawdust, could be shipped halfway around the world with the loss of only a quarter or so of its weight. And second, that southern cotton planters, Indian nabobs, and expatriate Englishmen would pay almost any price for a way to cool their juleps and gins.

the moderator authority to appoint a committee to study sanitation and fire hazards and "any other conditions that exert a downgrading or blighting influence on the town?"

"Mr. Moderator." A stocky cow farmer in outdoor woolens and rubber-soled hunting shoes rose to ask a question. "What did this committee cost the town last year?"

"Didn't cost the town at all," Moderator Powell explained. "I called on people as they were needed." He reminded his fellow townsmen that volunteer efforts had, among other things, done away with several unsightly

To this day corner markers in Hong Kong still bear the words Ice House Street—a



Lamppost gardens bloom on Camden's main street. A resident brought the idea from Lymington, England, in the early 1920's. A blacksmith made the wire baskets, which the Camden Garden Club fills with geraniums, petunias, and vines. Charles Sturdee tends them.

reminder that it, along with New Orleans, Calcutta, Rio de Janeiro, and Kingston, Jamaica, was once a port of call for New England's world-voyaging ice ships.

Bath has long billed itself as a "cradle of ships." Years ago that title could have been applied to almost any stretch of coastal Maine from Kittery north. Today Bath alone can claim it. At one point during World War II, the Bath Iron Works launched a destroyer every 17 days.

Along with its cargo-carrying vessels, BIW still makes destroyers for Uncle Sam, though not at war-time's frantic pace. Navy skippers deem it an honor to be given command of one. "Bath boats," they fondly call them.

Bath Iron looks back on other notable achievements, among them construction of the fantastic 343-foot *Corsair IV* for the younger J. P. Morgan. It was Mr. Morgan's father, I recalled, who made the classic comment, "If you have to ask what it costs to run a yacht, you can't afford one."

"How much did *Corsair* cost to build?" I asked William Haggett, who guided me through the busy shipyard.

"I don't suppose anyone knows exactly," he said, "by the time she was completely fitted out." He led me to a handsome glass case in a corridor of the BIW administration building. In it rested a scale model of the last *Corsair*, perhaps six feet long and complete to such painstaking details as a tiny carved billethead and teak bulwarks. "This model



BOURONHOMÉ © NATIONAL GEOGRAPHIC SOCIETY

alone cost thirty or forty thousand dollars, so you can imagine what Mr. Morgan must have paid for the real thing."

For all of Bath's handsome vessels of iron and steel, though, it takes a ship of stout timber to snare my heart. And one rainy afternoon last spring, Maine shipwrights resoundingly put it on record that they have lost none of their traditional skills with white oak and Douglas fir, with teak and Sitka spruce. I made a special trip to Maine to see it happen. It marked the coming-true of a dream originated by New York brewer-yachtsman

Paintbox bright, leaves of the blueberry turn a wind-swept autumn field to crimson. Growers burn wood lots and fields in spring to encourage regrowth of the wild bushes. Bridge leads to Little Deer Isle. Beyond sparkles East Penobscot Bay.

Blueberries by the bushel pour into a whirring machine that winnows out leaves and twigs. Hand-raking up to 20 bushels a day, this Micmac Indian from Canada harvests the barrens near Cherryfield in August. Last year's bounty of 29 million pounds made Maine the Nation's wild-blueberry-growing champion. An old law permits Canadian Indians, as native North Americans, to cross into the United States freely.



Rudolph Schaefer and cheered on by every boatman with the common sense to prefer the whisper of wind on canvas to the efficient snarl of an internal-combustion engine.

I'm talking about *America*, of course—the second *America*. The sleek black-hulled schooner, which duplicates her vanished namesake in almost every visible detail, slid down the ways at East Boothbay on May 3, 1967 (pages 808-9). This was exactly 116 years to the day after the launching of the original vessel, which in 1851 carried the New York Yacht Club burgee to victory over Britain's entire yacht squadron and gave her name to the *America's Cup*.

After that first victory, the old *America* came upon evil times. Passed from owner to owner, neglected and abused for nearly a century, she finally died in an Annapolis boat-

yard. And yet here she was ready to take to the sea again, risen phoenixlike and bright with flags.

I confess that, as the shining black form started toward the water in the slow, inexorable way a ship has of moving off the land and into her proper element for the first time, I stood there dumb instead of cheering and felt tears well into my eyes. Sailors will know what I mean. Rudy Schaefer's reborn *America* is more than a ship; she's a living affirmation of her country's long love affair with canvas and the sea.

From East Boothbay, let's backtrack now through Boothbay Harbor itself, with its scads of daytime visitors who stay just long enough to sample a clambake on Squirrel Island or to try their hands at jigging for cod aboard one of the local party boats. The road



PHOTOGRAPHED BY NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART © N.G.S.

winds on past the Boothbay Playhouse (pages 806-7), where on summer afternoons a talented professional company rehearses outdoors on the pine-shaded lawn.

#### Wiscasset's Four-masters Sail No More

Eventually the road coils on into Wiscasset, a lovely old sea captain's town where paintings of tall ships still grace high-ceilinged hallways and two of the ships themselves—the four-masted schooners *Hesper* and *Luther Little*—rot picturesquely on the waterfront.

With considerable justification, Wiscasset residents think of their town as a sort of maritime Williamsburg, and aren't altogether happy that they may become hosts to Maine's first nuclear power plant. The \$131,000,000 project—if it comes to pass—will help supply electricity to much of New England.

Beyond Wiscasset and its sister, Damarscotta, juts a rank of quiet peninsulas, green and water-fretted. Contentment lies over them like a cloak and mantles the little clusters of dwellings that have stood there almost unchanged for generations: The town of Friendship, where possession of one of the sailboats built half a century or so ago by Wilbur Morse probably carries more prestige than ownership of a genuine Rembrandt. Rockport, which claims that in the 1840's one of its long-departed citizens, a sea captain named Hanson Gregory, invented the doughnut. Picture-postcard villages like New Harbor, Christmas Cove, and Port Clyde. And Pemaquid, another of those places where you can take a long detour back through Maine history.

"But not as far back as the newspapers would have had it," commented amateur





Keeping a tradition alive, Edwin F. Conary builds a sheet-metal square-rigger for a housetop. Until his death last year, the retired railroad patternmaker created the elaborate weathervanes at a blacksmith shop in Blue Hill.

No stranger to danger, master river driver Robert Wright of the St. Regis Paper Company loosens logs at the start of the Machias River drive. He later took a tumble and suffered cracked ribs. The pine and spruce, once vital to shipwrights, will become pulp and lumber at a Whitneyville mill.



Mouse with a pedigree helps unravel the mysteries of genetics. By inbreeding mice for generations, scientists at the Jackson Laboratory in Bar Harbor develop strains to study such maladies as muscular dystrophy, diabetes, and cancer. Here Dr. Charles P. Dugg examines a pregnant female injected with a substance known to cause birth defects in laboratory animals. He determines how rapidly her genetic makeup enables her to destroy the drug by measuring its residue in her breath. The lab distributes a million "Jax" mice a year to researchers around the world. Its staff tutors selected students during summers.



archeologist Helen B. Camp. Pemaquid first hit the headlines—to Mrs. Camp's discomfort—when her probings into the remains of a colonial settlement and trading post turned up a skeleton buried in what appeared to be armor. The cry went up—a Viking!

"I should have kept my mouth shut," said Mrs. Camp. "It was an Indian woman, and the 'armor' was her jewelry—plates hammered from pieces of a brass kettle." She showed me some of them in



LOGS AND DEBRIS BY WYATT CAMP (ARROW) AND B. ANTHONY STEWART © S.C.S.

Pemaquid's embryonic museum. I asked about the skeleton.

"Right now," Mrs. Camp confessed, "it's banished to a cardboard box in my attic." And high time, she made it plain, so that people can appreciate the really significant discoveries being made at Pemaquid.

The importance of Pemaquid Settlement, which dates back at least to 1625 and perhaps before that, lies in less sensational finds: trade beads and bits of broken glass, corroded knives and spoons, shattered tankards, coins

and bones and bits of clay pipestem. "As Jamestown tells us how settlers lived in 17th-century Virginia," said Mrs. Camp, "so Pemaquid is telling us how they lived in Maine."

She and her husband, a retired oil-company executive, dream of what a million dollars could do to create a restoration in the style of Jamestown. In the meantime, they carry on amid old Pemaquid's barely visible ruins with high-school student volunteers. Sometimes they even let interested sightseers take a turn with trowel and whisk broom.

When Pemaquid's visitors aren't trying their hands at do-it-yourself archeology or dripping lobster juice and melted butter all over themselves, they're apt to be exclaiming about the beauty of coastal Maine. "It's like a painting," they cry, with more appreciation than originality. Indeed, the state's soft-focus fogs and crisply delineated rocks have attracted artists for years. Winslow Homer's canvases uniquely capture the ocean's shifting moods at Prouts Neck. And mention of John Marin evokes not only water colors of sea and wave-lashed stone but a mailbox on a woodland road with the artist's name painted boldly on it by the master himself.

Today another name stands beside these two. Andrew Wyeth has created a world of silence and soft colors from the materials

closest at hand: his Pennsylvania birthplace and a piece of the Maine coast, where he has summered since he was six, near the little town of Cushing.

"I love the feel of rocks and grass, the textures of trees and wood," the artist said when I visited him in the simple frame house that stands amid the substance of so many of his paintings.

#### Error of Direction Dooms a Painting

Before I came, I had stopped in Rockland, a few miles from the Wyeth home, to see the Farnsworth Museum's treasured "Her Room." It cost \$65,000, the highest price ever paid by a museum for the work of a living American artist. And now, with a little shock, I saw in the artist's living room the raw materials of





that painting: the weathered chest, the door, the row of sea shells neat upon the window sill, the pink curtains and, beyond, the grass and the sea. Familiar bits of the artist's surroundings, they were of the painting, and yet they were not the painting itself. It had taken the transcendent skill of a great craftsman to give meaning and emotion to these worn and simple objects (following pages).

I had brought with me a small stack of NATIONAL GEOGRAPHICS, issues from the 1920's that included paintings done for the magazine by Andrew Wyeth's father, famed artist-illustrator N. C. Wyeth. Mr. Wyeth accepted them graciously and then added, almost as an afterthought, "You know, I did two paintings for the GEOGRAPHIC myself."

Jogged by his description, I remembered

one, a gouache of Gen. James Wolfe at Quebec, in an issue devoted to Britain's contributions to the world.\* But the other, a water color of Lord Nelson at the Battle of the Nile, rang no bell in my memory.

"That's not surprising," said the artist. "It was never published."

As every GEOGRAPHIC contributor learns, to his occasional sorrow, each statement in word or picture undergoes the most intense scrutiny for accuracy. Nelson opened fire, a researcher discovered, when his flagship lay to starboard of the French *Spartiate*.

"I showed *Vanguard*," said Mr. Wyeth ruefully, "engaging the French ship from the wrong side!"


#### Windjammers Still Ply Penobscot Bay

From Rockland you can just glimpse the low and lovely Camden Hills beside Penobscot Bay. The town of Camden calls itself "the prettiest town in Maine," and it would be hard to find one prettier, especially on a Sunday morning in summer when crowds of worshipers spill from its white clapboard churches, the flower boxes on its lampposts spout blossoms (page 817), and a fleet of windjammers bobs in its hill-encircled harbor.

Don't look for the windjammers during the week, though. They'll be out island-hopping; and if you're lucky enough to be aboard one of them on a crisp day in a good breeze, you'll be pretty close to sailorman's heaven. At least I was the morning I sailed aboard *Adventure* with Capt. Jim Sharp and his pretty wife Louise. Their ship is the last of the Gloucester dory-fishing schooners, and she'll do an honest 12 knots under sail (pages 814-15).

I ate fish chowder on deck and roast pork covered with Mrs. Sharp's own onion-and-peanut sauce in the big dining saloon, which is the sort of thing *Adventure's* paying guests do six days a week. We let the century-old Hudson River schooner *Stephen Taber* and the new windjammer *Mary Day* join us in a game of tag, and once we glimpsed the biggest of them all, the three-masted *Victory Chimes*, which is another one-of-a-kind, the last of the big Chesapeake Bay lumber schooners they called rams. Then Jim Sharp put me ashore in Castine across Penobscot Bay.

Tree-shaded Castine vies with Camden for the title of prettiest town; I plan to go back to



Armored monarchs of the ocean, lobsters—steamed with clams over hot rocks and seaweed—will satisfy appetites whetted by the salt air of Pemaquid Point. Indians made such feasts a high point of summer. Off nearby Monhegan Island, English explorers in 1605 netted 30 huge lobsters that "sheweth how great a profit fishing would be." Maine men have ever found it so, taking *Homarus americanus* from a shore-bottom home that stretches from the tideline to 1,000-foot depths.

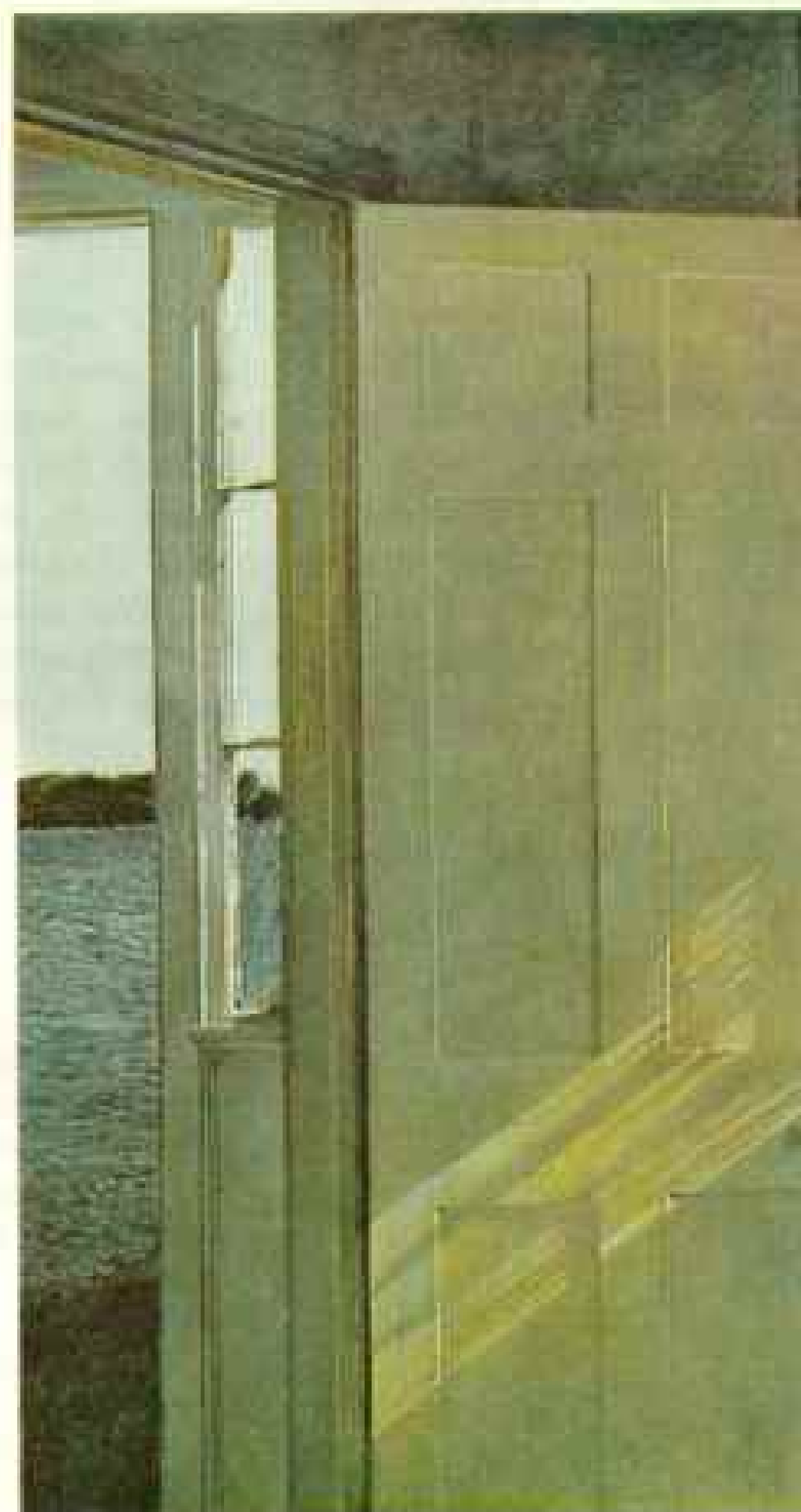
Once plentiful, lobsters sold for two cents a pound in 1880, and sometimes did duty as codfish bait and garden fertilizer. Now they bring \$1 or more a pound at seaports; prices may quadruple when the crustaceans are shipped by air to restaurants across the country.

\* "The British Way: Great Britain's Major Gifts to Freedom, Democratic Government, Science, and Society," by Sir Evelyn Wrench, GEOGRAPHIC, April, 1949.

Poet of the familiar, painter Andrew Wyeth portrays the places he knows best—his birthplace, Chadds Ford, Pennsylvania, and his summer home near Cushing, Maine. His dog, Rattler, often a subject, joins him on a painting trip.



"Her Room" distills the essence of a Maine summer, with sunshine striking a knobby wheel atop an old sea chest and shells lining a



both, so I'd rather not get into that argument! Castine, too, plays a major role in keeping the state's seagoing traditions alive. It's home port to the Maine Maritime Academy, which uses the big gray-hulled *State of Maine* as a floating university in which to train Merchant Marine officers (page 833).

#### Maine Coast an Island Hunter's Paradise

On Penobscot Bay, as on Casco Bay, only the densest of fogs can blot from sight the myriad islands that dot the dark water. Maine-born poet Edna St. Vincent Millay cherished these bits and pieces of sea-washed land; a Rockland girl, she spent her summers for many years on Ragged Island, near Portland. But even without her, the island cult would probably have appeared.

The island bug eventually bit me. Try as I would, I couldn't resist dropping in on the

real estate brokers. "Any new islands today?" I'd ask, and they'd tell me about a little \$3,000 dream that lies barely awash at high tide, or a quarter-mile-long paradise for \$100,000, with its own dock and float and two houses designed by a famous architect.

I didn't buy one, but the dream still haunts me. If my island didn't already have a name, I would give it one like some of those I've seen on charts. There's an East Brown Cow, for instance, and an Eastern Ear among Maine's nobody-knows-how-many islands. There's a Crumple and a Mistake, a Great Spoon and a Little Spoon, and others called Junk of Pork (I wonder why) and Pound of Tea and Hells Half Acre, which lies within hooting distance of Devil Island.

The bigger islands have their appeal too, and they weren't always quiet havens for refugees from the cities. Once Vinalhaven

window sill. Wyeth depicted his own front room in tempera and titled the work for his wife. He learned to get "that fleeting character of the thing" in the studio of his father, famed illustrator N. C. Wyeth. The elder Wyeth created a series of five paintings, "The Romance of Discovery," for NATIONAL GEOGRAPHIC four decades ago. Andrew's son Jamie, an accomplished artist at 21, follows the family tradition.



PRINTING COURTESY WILLIAM S. FARNSWORTH LIBRARY AND ART MUSEUM, ROCKLAND, MAINE; COURTESY BY D. ANTHONY STEBERT © N.G.S.

rang with the many tongues of European stonecutters and the creak of galamanders, odd high-wheeled carts used to transport blocks of granite from the quarries. Today swimmers splash in summer in the rain-filled pits, and piles of paving stones cut half a century ago still lie abandoned, not worth enough for anyone to carry away.

"Quiet? 'Course it's quiet!" an elderly Vinalhaven shopkeeper rose to my comment. "Concrete and macadam," he said angrily, and stamped his foot first on the sidewalk and then on the village's blacktopped main street. "Folks started building everything with concrete and macadam, and then there wasn't no more use for Vinalhaven granite. Before you knew it all those fine clean-looking Swedes and Eytalians and Irishmen had moved away, the quarries was flooded, and this whole island went to sleep."

One proud relic remains: a 3-ton granite eagle salvaged from New York City's now-demolished Pennsylvania Station.

"You know something?" my friend went on. "After we got that big thing set up here in the middle of town, turned out it hadn't been cut on Vinalhaven at all." He couldn't suppress a hint of scorn as he told me where it had been quarried: in Milford, Massachusetts.

#### Curfew Tolls for Vinalhaven Teen-agers

Happily, Vinalhaven took its disappointment in stride, and the massive bird will likely continue to dominate the waterside business district of the island's one somnolent town. When I was last there, a sign in a store window hailed the carving as a reminder "of the days when granite, quarried on this island, was built into public buildings throughout our country."





"Leaning against the wind, he grows lean himself." The words of Maine writer Robert P. Tristram Coffin come to life as lobsterman Zoeth Rich brings in two traps for repair during a midwinter blizzard. From Long Island in Casco Bay, a few fellow fishermen put out to



ETCHING BY S. ANTHONY STEWART © N.E.S.

sea the year round, but Mr. Rich waits for warmer weather. Then he fills the old metal life-boat, left, with salted bream for bait and anchors it in the harbor. Loading his lobster boat with enough bait for a day, he chugs out to sea, dropping traps and marking them with branded buoys.







BOISACHROMES © NATIONAL GEOGRAPHIC SOCIETY

"The mail's out." After checking post office boxes, people-watchers man their lookouts on the main street of Vinalhaven. The Memorial Hall rose in 1895, paid for by veterans of the Grand Army of the Republic. Granite curbing recalls the arrival of stonecutters on the island in the 1870's. Its quarries yielded material for paving, gravestones, and churches—the most famous, New York's St. John the Divine. But demand for granite as a building material shrank and companies folded; today youngsters use the rain-flooded quarries as swimming holes.

Teakettle hums and conversation flows while churchwomen of Long Island complete a crazy quilt for a summer raffle. Thus, where the community spirit is strong, long winter evenings pass in useful activity. Neighbors help the sick, and see that school children reach the ferry to nearby Portland.

Another notice, not far away, makes it clear, though, that Vinalhaven has no intention of going back to the busy, noisy ways of its heyday: "Curfew will blow at 9:45 p.m. All children 16 years and under must be home at 10:00 p.m. until school starts. Police."

Does it mean just that? "Well, I guess probably!" Vinalhaven's chief of police said firmly. "I put that ordinance in seventeen, eighteen years ago. Didn't enforce it until a couple of years ago. Now we give 'em a short blast on the fire whistle, and every kid has to be off the streets in 15 minutes."

And after school starts?

"An hour earlier," the chief said. "To do their homework."

#### Students Pass Test Tied Hand and Foot

Not far seaward from Vinalhaven and its even quieter twin, North Haven, lies Hurricane Island, where the ring of the stonemason's hammer once brought the same kind of now-vanished prosperity. Today Hurricane rings with noise again, from May to October at least, but the sounds are young voices and the commodity its rocky shores and flooded quarries yield is not stone but self-reliance.

On a plank walkway that reaches nearly to the center of one of the island's abandoned pits, I watched uneasily as an instructor tied a blond teen-ager's arms behind him and looped another rope tightly around his ankles. Then the boy hopped awkwardly to the edge of the walkway and splashed into twelve feet of cold, clear rain water.

He sank amid welling bubbles, then rose gently like a jellyfish, back barely awash, his face below the surface. Perhaps half a minute ticked away before he made a slow movement, straightening his back to bring his head above the surface just long enough for an exhalation and a deep lungful of new air.

For 10 minutes I watched as the student hung there above the quarry's jagged bottom, rising as a turtle might, every few seconds, to breathe. Then the instructor dropped into the water beside him and loosed his hands and feet so he could climb out.

"That was the graduate test of what we call drown-proofing," said instructor Reagh Wetmore. "When these boys come to Hurricane Island we have to teach some of them to swim! When they're ready to leave 26 days later, we feel they will be able to save themselves under almost any circumstances."

Hardship, excitement, authentic adventure—though without foolhardiness—make up the curriculum of Hurricane Island's Outward Bound

School, one of five such in the United States. The idea originated during World War II, when young British sailors were being lost to Nazi U-boat attacks because they didn't know how to go about saving themselves.

#### Outward Bound's Goal: Self-confidence

Hurricane Island makes "instant men," as one graduate expressed it, through a challenging program of rappelling down sheer cliffs, braving icy water and seemingly impossible obstacle courses, navigating through fog and storm, and surviving alone on an island for three days with only the food and shelter each student can improvise for himself.

"Outward Bound is not easy," school director Peter Willauer told me. "The idea behind it is to give the students experience in

back, for Maine law protects these submarine Methuselahs as breeding stock. Out of it all the fisherman kept only three lobsters, totaling perhaps four pounds.

"Could we buy some lobsters?" the captain of my rented boat shouted.

The lobsterman said "Ay-yuh," which is a Down East way of saying "yes." Then he shifted his cigar to the other corner of his mouth. "But they'll be dawd-blammed expensive!"

The old man doled out 10 generous pounds, weighing only by heft and eye, and charged a dollar a pound—just what he would have received that evening for them from the buy-boat back in port. Then the skipper felt his way out through the fog past Seal Island and Wooden Ball and around an assortment of



PHOTOGRAPHY ABOVE BY E. ANTHONY STEWART; PHOTOGRAPH BY N. LEON LOPEZ © W.E.B.

Contradictory signs confuse an antique hunter in Rockport. Shops along the coast also offer Maine-made ceramics, fabrics, driftwood curios, polished agate and jasper, and moccasins.

Elbow-deep in antiques, Mrs. Myrtle Gascoigne in Newcastle sells treasures gleaned from city attics and farm cellars. The large framed drawing shows a bilgehead, a carving from a sailing vessel's bow.

tackling really difficult and challenging problems and overcoming them. That's how self-confidence is acquired."

Beyond Hurricane Island, I watched a grizzled lobsterman tending his traps. Working alone, with a bright-red steadying sail aft to keep his boat headed into the wind, he fished a yellow-and-white buoy aboard and tossed one end of the pot warp, twenty fathoms or so of nylon line, onto the drum of his automatic hauler. Then, as a slatted lobster pot broke the surface of the sea, he hoisted it over the gunwale and spilled out its contents.

Most of the take went back into the water: several dozen sea urchins, a covey of "shorts"—lobsters too small to be legally marketed—and one huge old lobster that weighed, I would guess, close to six pounds. It too went

nameless ledges that foamed just below the surface until we could tie up in the snug harbor of Matinicus Island. Photographer Tony Stewart dipped a bucket of sea water for the cookpot, and we ate boiled lobsters and crisp potato chips and stared thoughtfully out at the fishing boats bobbing in the harbor.

Next morning the fog lifted, but the seas grew lumpy under the lash of an offshore wind as we tried to reach the most remote of Maine's islands. Charts label the 32-acre bit of granite, with its 90-foot-high lighthouse, as Matinicus Rock; Down Easterns call it simply "the Rock."

Even on a mild day boatmen can approach only by lowering a dinghy and hoping that a member of the Coast Guard crew can snatch it up the landing ramp to safety before it





capsizes in the surf. We had to content ourselves with the sight of storm-hurried puffins careering toward the light and the knowledge that we would not have to risk meeting the ghost of Matinicus Rock, alleged to be the specter of a lighthouse keeper who committed suicide here by hanging many years ago. His appearance is believed to presage all sorts of trouble in the operation of the light.

There's a generous supply of such grisly folklore. My favorite example is this:

A grave in Bucksport holds all that's mortal of Col. Jonathan Buck, who founded the town a couple of hundred years ago. He also served as the local judge and once sentenced a man to be hanged on the evidence of a female body that turned up minus one leg.

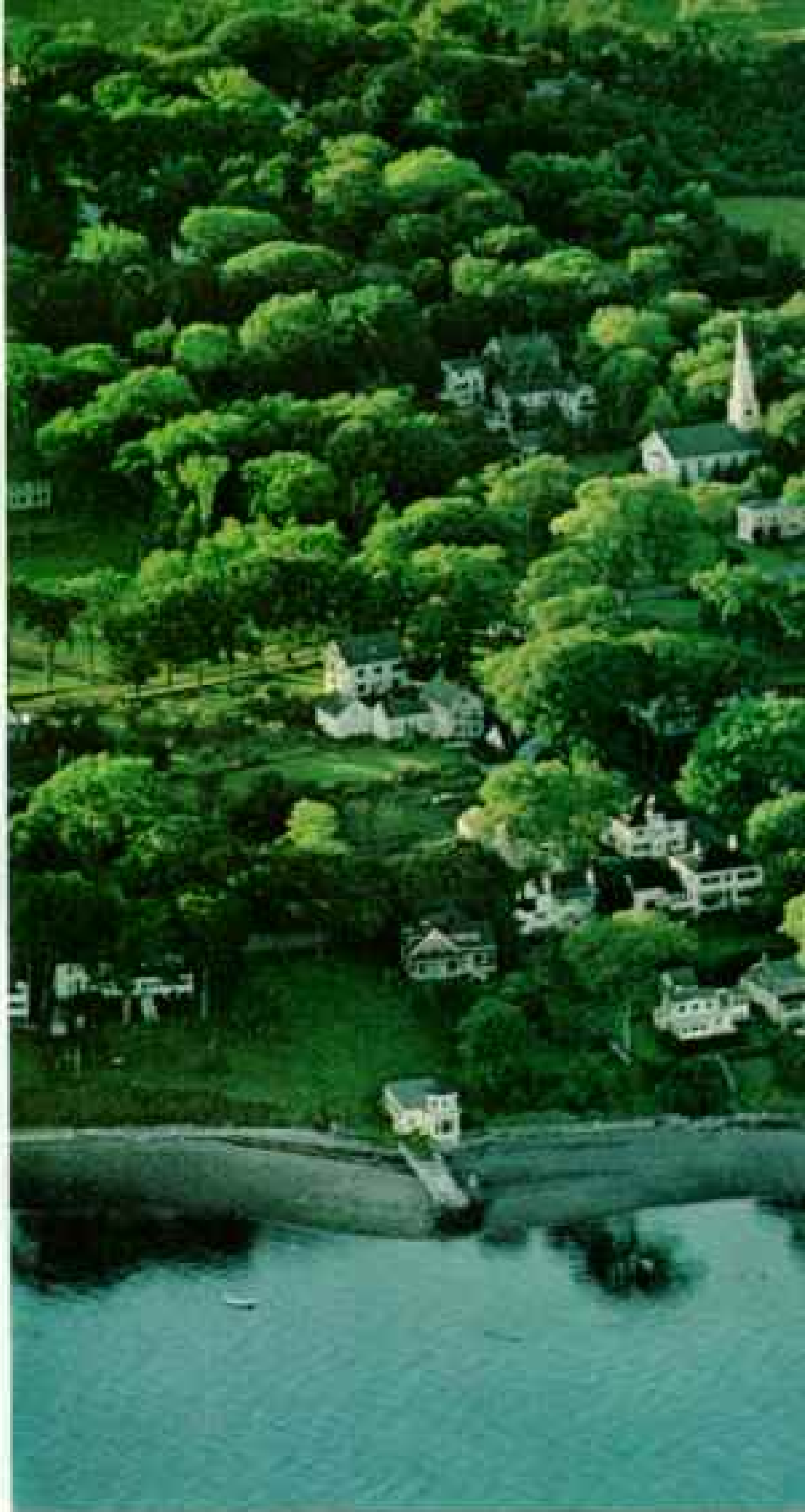
The poor man roundly cursed Judge Buck and faced the hangman still shouting his innocence. When the judge died in his own turn, a tall granite marker was placed above his grave. To the consternation of the townspeople, a dark stain in the shape of a woman's leg promptly appeared on it.

I can't vouch for the story, but there's no question about the stain. It's still there, and the monument stands right beside the road where Route 1 goes through Bucksport. You can see the stain without even getting out of your car.

#### Acadia in Winter Offers Fresh Charms

But let's get back to our islands. There's no contest, of course, as to which one enjoys the greatest popularity. Most visitors, naturally, come to Mount Desert Island for a tour of Acadia National Park. They come in summer, when it's many degrees cooler than New York or Boston, and crowd so densely around Anemone Cave that you can barely squeeze your way to the tide pools where the flower-like creatures live. Bar Harbor's streets are jammed, and so is the road that coils to the top of Cadillac Mountain, a 1,530-foot grandstand from which you can see a dazzling 360-degree panorama of sparkling water and glacier-carved rock (pages 798-9).

But people are beginning to realize that Acadia has another face—one that an increasing number of them prefer. The park's ranger staff keeps Ocean Drive open now throughout the year. Photographer Stewart and I threaded it one snowy afternoon with Chief Park Naturalist Paul Favour, Jr. Driving snow all but obscured the surf pounding in from the open Atlantic as we watched a bald eagle wing its stately way across Otter Cove. Then, next morning, in bright winter



sunlight, we joined a party of Bar Harbor residents on snowmobiles and clawed our way over a foot of untrodden snow to the top of Cadillac Mountain (pages 838-9).

The town of Bar Harbor, too, puts on a different face in winter. The lavish "cottages" of the wealthy stand shuttered and empty. The crowds and the bustle, the music festivals and the antique auto parades are seemingly forgotten. Darkness comes early and snow mantles half-deserted streets. Only a couple of restaurants remain open, catering largely to year-round residents. Prices are down, and the local people have time to linger and chat with you over a mug of coffee.

The talk is apt to turn to serious things—to the great fire of 1947 or to the mice at the Jackson Laboratory. In Bar Harbor, conversation rarely touches on one without having the other one come up.



PHOTOGRAPHS BY M. LEON LOPEZ (SHIP) AND CHRISTOPHER G. KNIGHT © M.A.C.

Shaded by elms, shadowed by history, Castine quartered British soldiers during the Revolution. Later, near the Unitarian Church, right, an abolitionist sheltered slaves escaping to Canada. Smoke rises from a dockside building of the Maine Maritime Academy, whose cadets train aboard the gray-hulled *State of Maine*. In 1945, as the *Ancon*, she served as press headquarters for the Japanese surrender in Tokyo Bay.



Proud moment comes to Dr. Richard D. Bush and his family at Bowdoin, a liberal arts men's college in Brunswick. Here during last June's commencement—the school's 162d—Mrs. Bush pins second lieutenant's bars on her graduating son, Edward, one of 20 officers commissioned at ROTC ceremonies. Later, 92-year-old Donald B. MacMillan, last survivor of the Peary polar expeditions, was guest of honor at the dedication of Bowdoin College's Peary-MacMillan Arctic Museum.



Silver harvest, tons of herring thrash in their prison, called "the twine." Fishermen strung the net across a cove on Matinicus Island, where the young herring shoal in summer. Here a huge hose aboard a carrier sucks water and squirming fish from the gathered net. The fish go into holds; the water goes overboard again, but sieves catch every loosened scale. Collected in birch baskets, left, woven by Passamaquoddy Indians, the scales produce a lustrous ingredient for imitation pearls, nail polish, and lipstick. In packing houses on the mainland, women clean and pack the fish for sale as Maine sardines.

"When an egg begins to divide, genes determine whether it will become a man or a mouse or a dog or a race horse," Dr. Earl L. Green, director of the laboratory, told me. "Genetics—basic research into the effects of genes—occupies us here at the Jackson Laboratory."

And mice are its tools. Precisely controlled inbreeding over hundreds of generations has produced mice with leukemia and mammary cancer. Some are compulsive eaters; others inherit cleft palates or half again the usual number of toes. Staff researchers study many of them; others are shipped to laboratories as far away as Tokyo and Moscow and Melbourne (page 820).

#### Mice and Mansions Perished in Fire

Jackson's founder, Dr. C. C. Little, who had served as President of the University of Maine and later of Michigan, worked for nearly four decades to create these unique strains of mice. Then, on the evening of October 23, 1947, fire swept the drought-parched island. A shift in the wind spared Bar Harbor's business center, but flames engulfed hundreds of homes—including some 40 of the island's palatial summer places. Gone, too, within half an hour of the time the fire reached it, was the Jackson lab—mice, records, and all.

Shortly after the fire, a heartening thing happened. Shipments of mice began to arrive in Bar Harbor from laboratories all over the world—two of this strain, four or eight of that. Without prompting, geneticists returned offspring of mice they had originally procured from the Bar Harbor laboratory, so that the strains could be re-established. Today "Jax" mice are again mainstays for genetics research. All the old strains have been re-established and others developed. "Old Funnyfoot," in whose





descendants researchers study the genes of muscular dystrophy, appeared in a 1951 litter.

Across the island from the laboratory, winter visitors may glimpse the steel-hulled vessel *Sunbeam IV*—if she isn't out breaking ice somewhere so that lobstermen can tend their traps, or dropping in on a Sunday to bring church services to an island without a pastor.

#### "God's Tugboat" Serves Offshore Islands

*Sunbeam* belongs to the Maine Sea Coast Mission, and Down Easters affectionately call her "God's Tugboat." Her visits are eagerly anticipated, except for those sad occasions (which may come at the height of an Atlantic gale as easily as on a sun-spangled day in spring) when she has to transport everything necessary for a funeral—casket,

undertaker, grieving mainland relatives, and sometimes even a massive concrete vault—to a lonely island whose shrinking community has lost one more member.

Beyond Bar Harbor's prosperous township, coastal Maine goes on for another 85 miles. But it is a different Maine, a land tinged with the sadness of vanished prosperity.

"Used to be," an old-timer in Eastport reminisced, "captains of sardine boats'd get paid for their catches in gold. So much grease around the packing plants, paper money'd darken from handling until you couldn't tell one bill from another.

"Now look," he said, and pointed through a window of the unpainted building we stood in, with its cardboard for-rent sign streaked and faded by months of winter rains. Along Eastport's main street I could see a dozen

835

PHOTOGRAPHS BY NATIONAL GEOGRAPHIC PHOTOGRAPHER B. BRIDNEY STEWART © R.G.S.





Flood of yellow washes a street in tiny Wiscasset, once a thriving New England seaport. School children wade through leaves of American linden, or basswood. Some 150 years ago, youngsters of the shipbuilding and lumber center dreamed of the sea. Boys eagerly anticipated the day





KIDACRORE © NATIONAL GEOGRAPHIC SOCIETY

they would glide down the Sheepscot River in cargo-laden clippers, bound for the West Indies or the Orient. Women waited and watched, often from "widows' walks," the observation decks atop their houses. Distinguished mansions from the heyday of sail still line the streets of this quiet village of 950.





**Fog-bound square dancers** hold to their Fourth of July tradition regardless of weather. They greet dawn atop 1,530-foot Cadillac Mountain, highest point on the eastern coast of the United States.

more stores standing grimy and tenantless. I asked Eastport sardine packer Moses Pike what had happened. "The population explosion hasn't meant much here," he said. "In 1850, Washington County had 39,000 people—nearly half as many as California. Today California has close to 20 million—and we're down below 33,000.

"First of all, the supply of timber ran out," he explained, "and a lot of the county's younger, more capable people left with it. And then, too, distance hurt us. While railroads and good highways were bringing the rest of the country closer and closer together, we seemed to get farther and farther away from our markets."



**Sun-blessed pathfinders** guide snowmobiles up Cadillac Mountain in Acadia National Park, which embraces half of serene Mount Desert Island. American artists

Hope came to Washington County once like a bursting sun. In 1935, as the United States struggled out of the Great Depression, Army Engineers brought \$7,000,000 and a plan for harnessing Eastport's 15- to 22-foot tides to create electricity. Planners in Washington sketched the new world that would open for eastern Maine: inexpensive power to attract new industry, rising land values, a new deepwater port, jobs for everyone.

#### **Eastporters Still Cherish Quoddy Dream**

For a year Washington County lived a heady dream. A new village rose to house the workers who would create the Passamaquoddy Project. Two small dams were built



RECREATION (ABOVE) BY E. ANTHONY STEWART; EXCERPTS BY DON CARL STEFFEN © N.Y.C.

discovered the beauty of the area in the 1840's. Soon wealthy families, called "rusticators" by the natives, arrived for summer holidays with yachts, servants, and stables of horses. Many of their palatial "cottages" around Bar Harbor fell to fire in 1947. Today Acadia, created by donations of land half a century ago, opens spectacular vistas to visitors the year round.

and a third started. Then the money ran out and Congress failed to appropriate more. Eastport slid for a time into bankruptcy and dependence on state aid to stay afloat.

Unless a future Congress revives Quoddy—and most Eastporters still cherish that dream—Washington County must continue to pin its hopes on the sea. Mackerel and tuna packing occupy many hands, and so does canning of local shrimp. But all must bow before the sardine as an income producer.

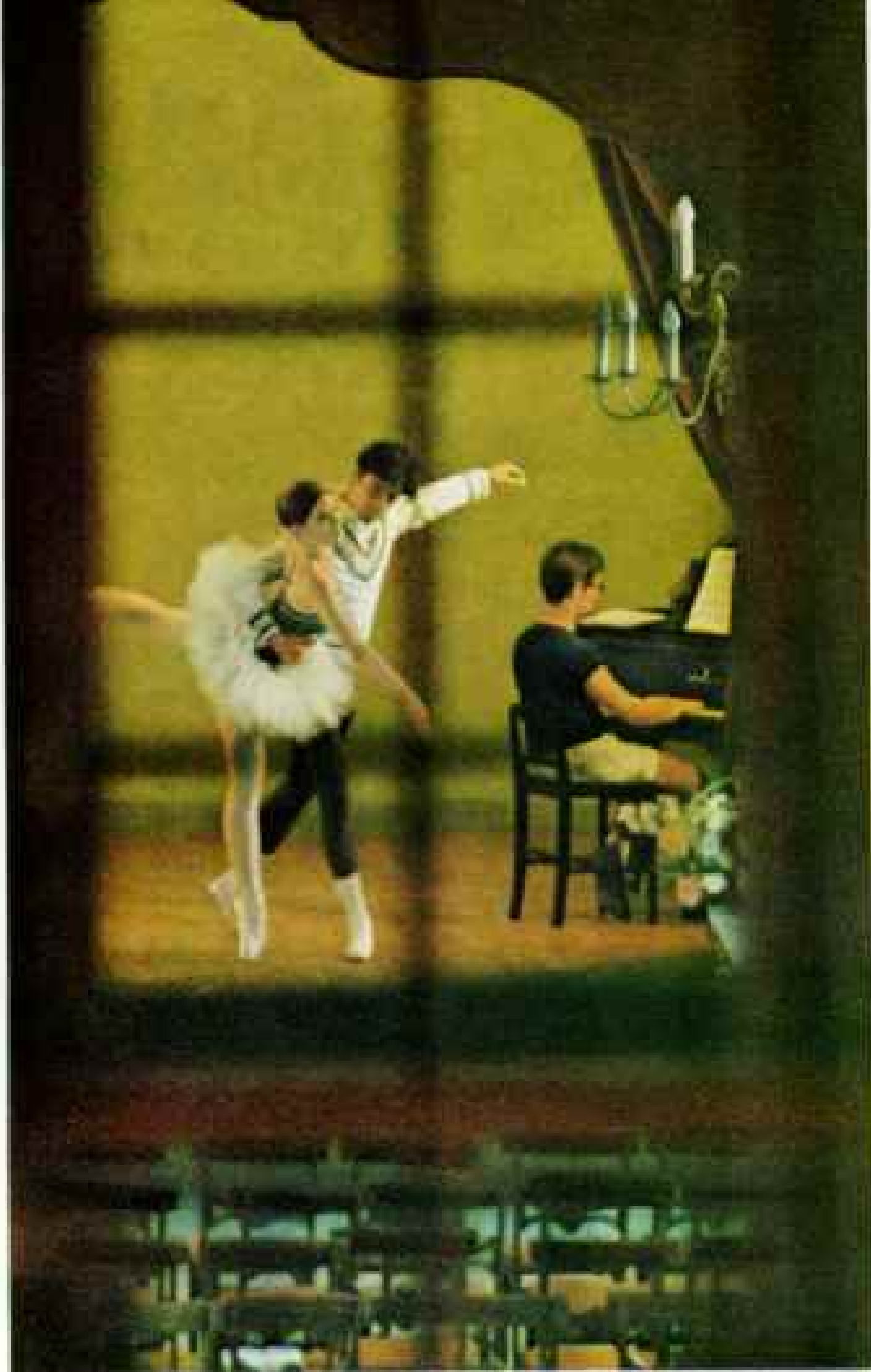
If you want to be technical about it, of course, no real sardines are ever taken in Maine waters. But there are abundant schools of herring, which scientists know as *Clupea harengus*. They're cousins of the European

sardine, and thrifty Maine packers find a use for everything—including the wiggle.

The herring thrash off most of their own scales as they're pumped aboard the big, efficient sardine carriers that take them from net to packing plant (pages 834-5). The fish flow into the holds, but the shimmering flood of scales pours into yellow-birch baskets made for the fishermen by the state's surviving handful of Passamaquoddy Indians.

#### Herring Scales Give Luster to Lipstick

The scales are tumbled to float off the iridescent platelets that yield "scale essence," which cosmetic manufacturers use to give lipstick and nail polish their pearly sheen. After



**Prelude to a performance:** Ballet dancers rehearse a pas de deux to a Mozart minuet at the Bar Harbor Club. A week-long arts festival last August featured concerts and painting and photography exhibits.

**Food for a cause,** a pancake breakfast at Ellsworth raises money for the First Congregational Church, background, and Rotary Club. Justice William S. Silsby, right, and Sheriff Merritt Fitch serve the blueberry flapjacks.

**Rock-and-roll swingers** lure youngsters into a Fourth of July parade through Bar Harbor. Antique cars, marching bands, and floats also entertain. Fireworks and street dancing on the pier cap the day's festivities.



that, the bare scales are ground up for use in airport fire extinguishers; mixed with air and water, they create a fire-smothering foam by swelling almost instantly to some 300 times their dry volume.

The scaleless fish go to packing houses, where scissors-wielding women snip off heads and tails, then arrange what's left neatly in flat tins. After soybean oil has been added and they've been sealed and cooked, they're ready for labeling as Maine sardines. The heads, tails, and insides wind up as fish meal for fertilizer or animal feed.

#### **Campobello Enshrines FDR's Summer Home**

No visitor should leave Washington County without at least a glimpse of Campobello Island. Of course, Campobello isn't really part of Washington County. It belongs to Canada's province of New Brunswick (map, page 803). But the island lies only a few yards away from the sardine canneries of Lubec, in Maine. And unless you come by boat, you can get there only from Lubec over a new international bridge named for Franklin Delano Roosevelt.

Geraniums added spots of flame to dark spruce and darker water when I joined a line of summer visitors waiting to walk through Campobello's show place, the red-shingled,





ARRANGED BY PROPERTY OF M. L. LINDSAY; PHOTOGRAPHS BY ROBERT E. SILVER (APRIL) AND DON CARL STEPHEN (MAY)



rambling cottage that holds so many memories of FDR. Under the joint care of Canada and the United States, it retains a pleasantly cluttered, lived-in appearance, as if the President and his gregarious family were waiting in the next room to welcome us.

As we moved out onto a screened porch that overlooks Friar Bay, everyone ahead of me fell silent, as if on cue. Each had seen the same thing—the improvised litter on which the polio-stricken Roosevelt had been carried about the grounds—and had been reminded once more of what FDR's warmth and vitality had so often made us forget: that, for much of his life, his legs had been all but useless.

#### Dawn Comes First to Quoddy Head

After Lubec there's only one stop left in Washington County—in the whole United States, for that matter. For most of the year, dawn comes earlier to the folks who operate West Quoddy Head Light than it does to any other family in the country, except in Arctic Alaska—and nightfall, too, comes sooner. Evening had barely settled over the dark Atlantic when I visited this easternmost tip of the Nation. On a graveled path between the keeper's home and the lighthouse itself, a small boy pedaled back and forth on a tricycle.

"What time do you go to bed?" I asked as he crunched past.

"When it's all dark," he yelled. He made a tight turn and pedaled back.

"That's too bad," I suggested. "Makes you the first little boy to go to bed in the whole United States."

He cocked his head in thought, then raced toward the house. I left too, in the other direction, when it occurred to me that his mother might not appreciate the joke.

And so we've come to the end of the Maine coast. That's Grand Manan Island across the way there, down in Canada. Time to head back. Time, too, to make plans for another visit. People nearly always do, once they've caught the Maine coast fever. THE END

Sailor's dream come true. "Hundred-harbored Maine," in poet John Greenleaf Whittier's words, promises coves, channels, and bays where yachts can cruise beyond the turmoil of the savage main. The yawl *Nirvana*, owned by a summer resident—New York's Governor Nelson A. Rockefeller—slips past the Bear Island Light after observing the start of the first day's run of the Northeast Harbor fleet's August cruise.





BOATHOUSE BY W. SEAN LOPEZ, NATIONAL GEOGRAPHIC STAFF © N.G.S.



ANNOUNCING FOUR NEW  
GEOGRAPHIC BOOKS:

# Australia Space Exploration Vanishing Peoples African Animals

By GILBERT M. GROSVENOR, Associate Editor

**O**N ONE SIDE of our whirling planet, the world's most sophisticated men and machines blast off to explore the new realm of space. At the same time, in the earth's remote corners, primitive tribesmen still cling to the Stone Age ways of mankind's youth.

But theirs is a losing fight. In Ceylon, for example, my wife Donna and I searched the hot scrub jungles for the shy Vedda, Ceylon's fast-vanishing aboriginal people—and finally found one family of these elusive, wiry hunters.

In Australia we saw something of civilization's impact on the aborigines of the continent's desolate heartland. These nomads today are making the painful transition from desert to ranch and town—and losing the age-old skills that place them among the world's greatest trackers of game or man.

The jet age is rapidly sweeping many peoples—Indians, Eskimos, Lapps, Bushmen, Ainu—into the main currents of civilization. We may debate whether they are beneficiaries of progress, or its victims. But one thing is certain: We are the losers whenever their folkways flicker out forever and leave no record.

For this compelling reason the National Geographic Society has produced *Vanishing Peoples of the Earth*—a richly illustrated 200-page volume that literally could wait no longer. It is one of your Society's exciting new series of

In *Man's Conquest of Space* you relive such dramatic moments as Maj. Edward White's walk 100 miles above earth on June 3, 1965, tethered to Gemini 4 (upper); Col. John Glenn's first orbital odyssey in 1967; and the successful rendezvous in space between Gemini 6 and 7 in 1965.

*Vanishing Peoples of the Earth*, another of the Society's new titles, portrays primitive cultures threatened by the rush of civilization. Facing change (from left to right): Finnish Laplander, grizzled Australian aborigine, Amazon Indian, and New Guinea tribesman wearing cassowary-quill whiskers and a discarded tin-can top.





SPACEWALKER: BY JAMES A. MURPHY; GALEA ROACHWINGS (FROM LEFT) BY GEORGE F. WOLFE, CHARLES ALLEN, HAROLD SIMPSON, AND JOHN BOYFIELD (C) W.A.S.





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A PROMPT REQUEST will bring you first editions of these four clothbound books:

*Australia*, by Bruce Brander, Mary Ann Harrell, Hector Holt-house, 220 pages, ready now.

*Man's Conquest of Space*, by William Roy Shelton, 200 pages, available in August.

*Vanishing Peoples of the Earth*, 200 pages, available in November.

*African Animals*, by Dr. Louis S. B. Leakey, 200 pages, available in February, 1969.

Send no money with your order. You will receive a bill with each book for \$4.25 and postage. Address reservations to National Geographic Society, Dept. 512, Wash., D. C. 20036.

Like a ship under sail, the partly completed Sydney Opera House soars above the harbor. From empty outback to sophisticated cities, the fascination of the only nation with a continent to itself unfolds in *Australia*.

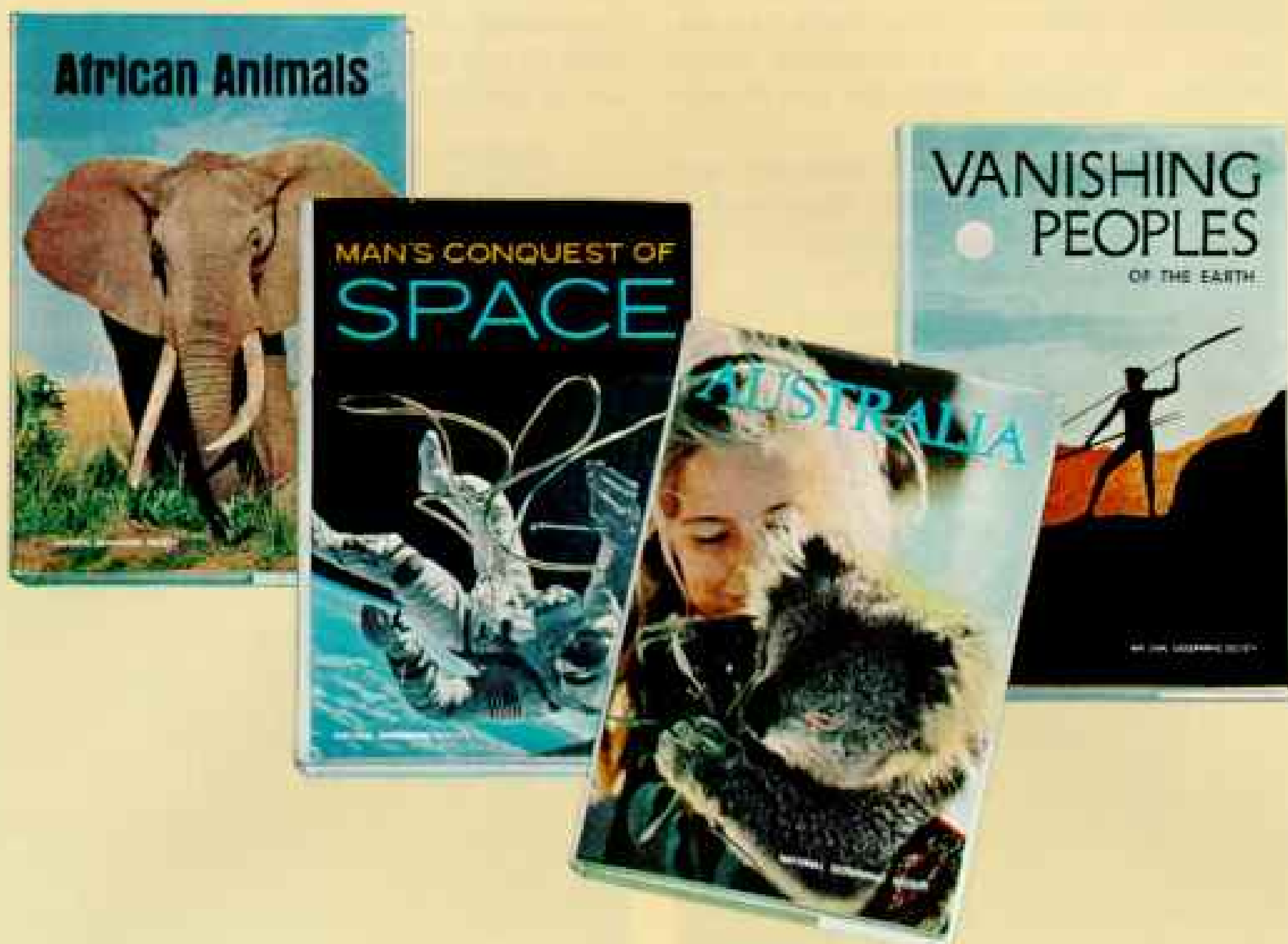
Special Publications for 1968-69. The others: *Australia*, *Man's Conquest of Space*, and *African Animals*.

More than a million and a half copies of the eight books thus far published in this enormously popular series are treasured possessions of Society members. Yet none exceeds in interest and importance the four now offered.

In *Vanishing Peoples of the Earth*, leading authorities on primitive societies describe their studies in "urgent anthropology"—research among peoples who may no longer exist as distinct cultures even five years from now.

By the time a child born today grows old enough to read Sister Mary Inez Hilger's account of life among Japan's "Hairy Ainu" on the island of Hokkaido, their number will have dwindled to the vanishing





BOOKCOVERS (COURTESY) BY BRUCE BRANDER © N.S.S.

point as they are assimilated by modern Japan. Only about 300 full-blooded Ainu survive—and most of them are over 60.

With color photographs which will soon be impossible to duplicate, *Vanishing Peoples* carries us in person to the varied scenes of these urgent studies. Among others, we visit the African Bushmen of the Kalahari Desert with Elizabeth Marshall Thomas, who has lived among them for months at a time. The Stone Age hunters she calls "the harmless people" once ranged southern Africa from what is now Tanzania to Cape Town. Today they are vanishing into a constantly constricting patch of the harsh Kalahari wasteland.

#### Island Continent Still a Pioneer Land

Almost half a world away, civilization slowly extends its beachhead across earth's oldest, smallest, flattest, driest continent—Australia. Harsh and remote, the arid outback resists settlement; nearly 200 years after the first Europeans came to stay, most of the 11,500,000 inhabitants live in a quarter of their land's 3,000,000 square miles.

In many ways, Australia recalls our own country's expanding, pioneering past. Rugged,

friendly, much like our own Westerners, Australians radiate youth and vigor—a spirit reflected in the first of the new series of Special Publications, *Australia*.

For the book, Geographic staff writers Bruce Brander (author of *The River Nile*) and Mary Ann Harrell and Brisbane journalist Hector Holthouse circled and crisscrossed Australia for more than 16,000 miles. The book's writers and photographers ranged the island continent from the great cities of the east to lonely Perth on the Indian Ocean, and from the island state of Tasmania to the forests, mineral-rich scrub, and Great Barrier Reef of tropical Queensland in the north.

With Mr. Brander you will make the "stations run" in a hedgehopping DC-3—almost the sole link between remote ranching outposts. At one stop the pilot drops off a sack of potatoes and a bag of onions; minutes later he lands on another dirt airstrip to deliver six cans of beer, some oranges, and a correspondence course, then flies on through the heartland of the world's most air-minded continent.

Here, in a country of change and contrast, cattle drovers, herding thousands of head of beef across the arid plains, sit in camp under

the stars and bet on the passage overhead of the latest communications satellite. Here ultramodern urban complexes border an outback so remote that one Australian airline advertises, "Holiday where the first human footprint could be yours!"

*Australia* serves as both reference and guide, indexed and profusely illustrated in color. A detailed political and physical map of the continent comes with the book. But more than that, it is an adventure, a romance with one of the world's most unusual, dynamic, and fast-changing lands.

Real romance and adventure, however, are

no longer confined to the earth. Anyone who has felt his flesh tingle, as I have, to the thundering vibration of a rocket blasting up from its pad at Cape Kennedy knows that we are on the threshold of fantastic events.

#### Ancients Envisioned Lunar Flight

In *Man's Conquest of Space* you will learn—often in an astronaut's own words—how it feels to speed through the soundless environment beyond gravity; how weightless man will live aboard spacecraft on interplanetary voyages; the mechanics of rocket propulsion; and what keeps a satellite in orbit.



PHOTOGRAPH BY WELLSVILLE BELL/ARND BRONKHORST

**Remarkable rapport with wildlife** earns Dr. Louis S. B. Leakey the trust of a skittish young wildebeest, orphaned by marauding lions. Dr. Leakey, whose fossil discoveries have traced man's past hundreds of thousands of years into prehistory, rescued the infant and raised it with other motherless animals at his camp near Olduvai Gorge in Tanzania. In a spectacularly illustrated new book, *African Animals*, the brilliant scientist shares with readers a lifetime of adventure. Across the 200 pages march the residents of the continent's unfenced zoos: thirsty zebras and wildebeests crowding a water hole (right, above); a shy terrier-size dik-dik; wildebeests locking horns in battle and milling on a dusty plain.



Eyewitness to 48 major rocket launchings and author of four books on space exploration, writer William Roy Shelton tells us of a lunar landing envisioned by Greek satirist Lucian in A.D. 160—and details scientists' plans for travel to the moon and later to our sister planets.

Between these two extremes, the book vividly records milestones of rocketry and space investigation: the Chinese "arrows of flying fire" used to repel Mongol hordes in the 13th century, Dr. Robert H. Goddard's 1926 launching of the first workable liquid-fueled rocket; the record-breaking balloon flight of *Explorer II* in 1935, sponsored by the National Geographic Society and the U. S. Army Air Corps; Germany's wartime V-2 missiles; today's orbiting clutter of "space junk," the result of 800 successful launches.

Today's rockets, of course, are the covered wagons of the Space Age. My guess is that a future edition of *Man's Conquest of Space* will contain a chapter recording an actual landing on the moon. Meanwhile, this edition will be essential for comprehending that great event when it comes.

### Cucumbers Slake Anteaters' Thirst

As stirring in its way as the lift-off of a rocket is the roar of a lion in the African night. I heard it first as we sat beside a campfire at Olduvai Gorge in Tanzania with Dr. Louis S. B. Leakey, the brilliant anthropologist-paleontologist whose discoveries of prehistoric hominid fossils have excited the scientific world.

It was toward the end of our memorable stay with Dr. and Mrs. Leakey, and Donna and I had all but exhausted ourselves setting some sort of record for round-the-clock animal watching: 55 species in three weeks. We listened long into the evening to the chorus of lions, hyenas, and nocturnal insects as Louis Leakey talked of his experiences with African wildlife over the years: of hyenas that attack humans; of flies that kill lions; of anteaters that cannot lap water, but slake their thirst by eating cucumbers.

Fascinated, Dr. Melville Bell Grosvenor, Editor-in-Chief of the GEOGRAPHIC, suggested that Dr. Leakey distill his intimate knowledge of the subject into a book. Thus was born the idea for *African Animals*, fourth in the new Special Publications series.

In this exciting book, Dr. Leakey draws on 65 years as a native of Kenya and adopted member of the Kikuyu tribe. He writes of his encounters with east African mammals, from tiny ground squirrels to the great elephants of Uganda.

You trek with him into the legendary game preserves of the Serengeti Plain, Ngorongoro Crater, and Lake Amboseli. You learn how the lion stalks the antelope on a tangent, so his prey will think he is only passing by. The cheetah, you discover, spurns meat older than one hour, but his leopard cousin eats carrion. And you read the colorful legends of the Kikuyu hunter: how, once upon a time, the chameleon won his race with the swifter hare by holding onto its furry tail—thus being the first to sit down at the finish line.

Brilliantly illustrated in the style of Jane Goodall's *My Friends the Wild Chimpanzees*, this book presents Africa's remarkable wild creatures as observed by a versatile scientist who has lived most of his life among them. It is this quality of personal participation that pervades all your Society's Special Publications and, with their beauty of illustration, accounts for their extraordinary and lasting appeal to readers of all ages.

THE END



Slant-eyed, carnel arches tufted ears, a graceful gerenuk forages at a blossoming bush. *African Animals* captures these timid creatures on film.

ILLUSTRATIONS BY THANE DANIEL © 1982







Smile for a stranger lights the tattooed face of a Berber mother in Morocco's High Atlas. Her people, their origins a mystery, have lived in northwestern Africa since before the time of Egypt's pharaohs. Though conquerors long ago brought change to coastal tribes, mountain Berbers retain much of their ancient way of life.

Snow-ribboned, treeless mountains tower above the village of Imilchil. Donkeys and mules bear the burdens of its hardy people. Thus the author trekked the High Atlas, crossing snow-clogged passes with a companion and two mules to visit little-known tribes.

# Trek by Mule Among Morocco's Berbers

Text and photographs by VICTOR ENGLEBERT

**A**LTHOUGH ONLY A HUNDRED MILES from the baking Sahara, I am floundering in deep snow, nearly paralyzed with cold, and dangerously fatigued. I am nevertheless happy. Snow is one of the things I came into the High Atlas of Morocco to see and to photograph.

My four companions do not share my happiness. The first, whom I shall call Ahmed, is a product of the teeming streets of Marrakech, a young man old in the knowledge of how to cajole tourists. He flaps uselessly about, for journeying into wilderness is new to him.

Saïd—mountain man, Ait Haddidou tribesman, and my guide on this crossing of a rocky spine almost 10,000 feet high—casts anxious looks at the overcast heavens. The third and fourth companions, a large mule and a small one, do nothing, for they are stuck in snow to their bellies.

"Oh, curses upon the foreigner who has brought his friends to their deaths!" wails Ahmed. He says this in French so that I may understand, but diplomatically mouths the curses themselves in the curious babel of many tongues he has learned in the Marrakech marketplace, the Djemaa el Fna.

"The city boy is right for once," says Saïd, who is tugging at the head of the large mule. "If it snows soon, we will all die, for here snow falls rapidly and in great flakes and quickly buries men and mules."

"Therefore go behind the mule and push," I tell Ahmed, beginning to feel fear. So we push and pull and shout and at last struggle onto clear ground, although 20 times I think the mules will break their legs or fall over the cliff.

Descending the rocky trails, we leave the snow. We cross wind-swept



grassy plateaus and come in inky darkness to the village of Ait Ali Ou Ikkou. Here the district sheik invites us into his house. The Berbers of the High Atlas make us welcome.

As I said, snow was one of the things I came to see. But mainly I came to explore a remote Berber region of Morocco, and to visit people who have lived in almost complete isolation from the beginnings of recorded history until well into the present century.\*

#### Old Ways Survive in the High Atlas

The low country of Morocco I already knew well. But of the Atlas ranges, which bisect the nation, I had caught only tantalizing glimpses—once on a motor-scooter journey over the whole length of Africa, and again on my way to ride a camel with a Tuareg salt caravan across the bitter southern Sahara.†

852 These fleeting sights of mighty snow-capped peaks and frowning mud-walled forts had stimulated my explorer's appetite. From these

fastnesses the mountain tribes had fought their neighbors and later, with equal fury, the French in the 1920's and 30's. I had resolved to visit these isolated people one day.

So I returned to Morocco, going inland to Marrakech. There, in a crowd of fortunetellers and snake charmers, I met and engaged Ahmed to journey with me into the mountains. I can converse with the Tuareg fairly well, but in Tamazight, the Berber tongue of the Atlas, I am far from fluent.

"My Tamazight is perfect," Ahmed assured me as we bargained over salary. "I am an expert driver of mules. And I will leave Marrakech when you wish, for Zuhra, my sweetheart, grows ever more possessive."

Alas, only Zuhra's importunities were the whole truth! Ahmed spoke a mere smattering

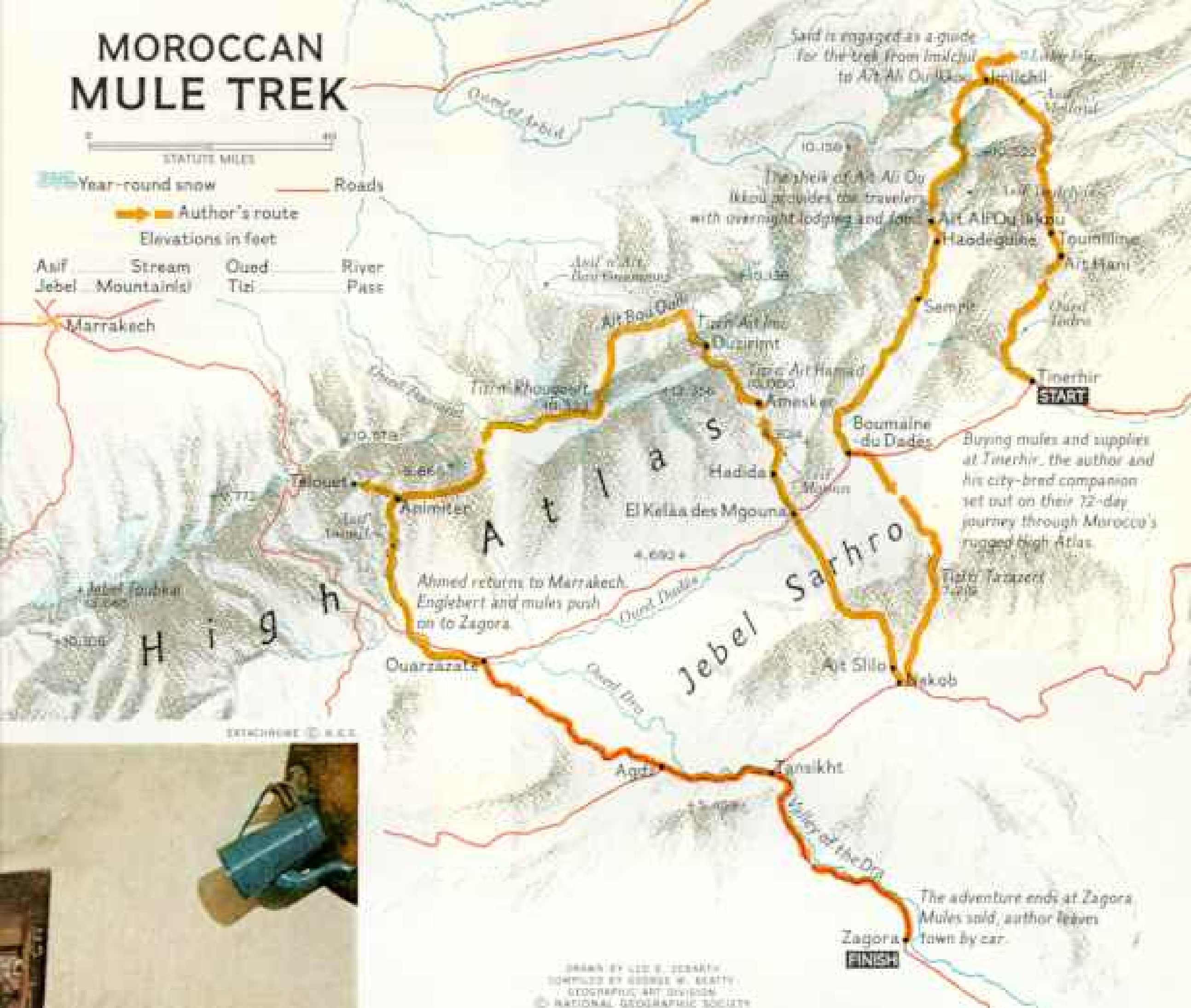
\*Jean and Franc Sbor described Morocco's rich mosaic of peoples in the February, 1955, *GEOGRAPHIC*.

†See "I Joined a Sahara Salt Caravan," by Victor Englebert, *NATIONAL GEOGRAPHIC*, November, 1965.



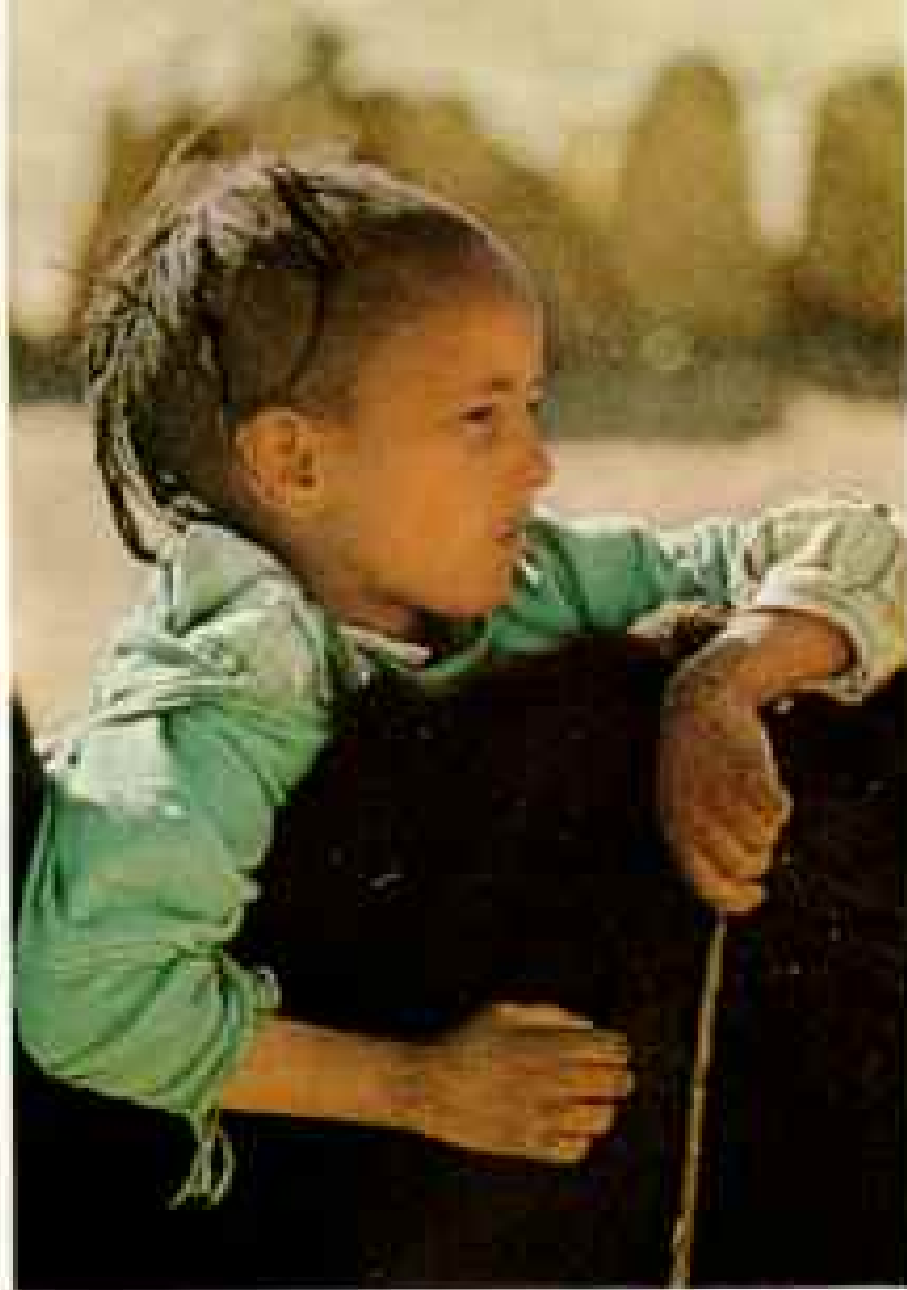


# MOROCCAN MULE TREK



In search of north Africa's past, the author traveled a 500-mile zigzag course through Morocco's mountain fastnesses. Foreigners ventured into the region at their own risk until the French Foreign Legion finally quelled the last Berber resistance in the High Atlas in 1933.

After business—pleasure! In Tinerhir the bearded merchant who sold the author his mules entertains Mr. Englebert, seated at far left. Observing Moslem custom, he eats with his right hand. Mint tea accompanies bread, honey, and almonds. Morocco's flag adorns the wall.



Tangled topknot crowns an Ait Haddidou boy. At manhood, he will shave his head completely.

Remnants of a lost script mark Berber women. Chin tattoos, the last symbols of a tongue still spoken by the hill tribes but no longer written, identify one woman (bottom left) as a member of the Ait Haddidou tribe, another (below) as Ait Morrhad.



KETHCOURNER © NATIONAL GEOGRAPHIC SOCIETY

Proud and independent, an Ait Morrhad tribesman reflects the Berbers' warrior past. Blood feuds marred mountain life for centuries, but now law proscribes such vendettas.

of Tamazight. As for mules, he knew how to curse them and, when I was not looking, to beat them with a stick.

Yet he proved a valuable companion. With much waving of arms he communicated with all he met. Eventually he so terrified the mules that they trotted at the mere sound of his voice, causing the mountain people to believe he possessed some special gift.

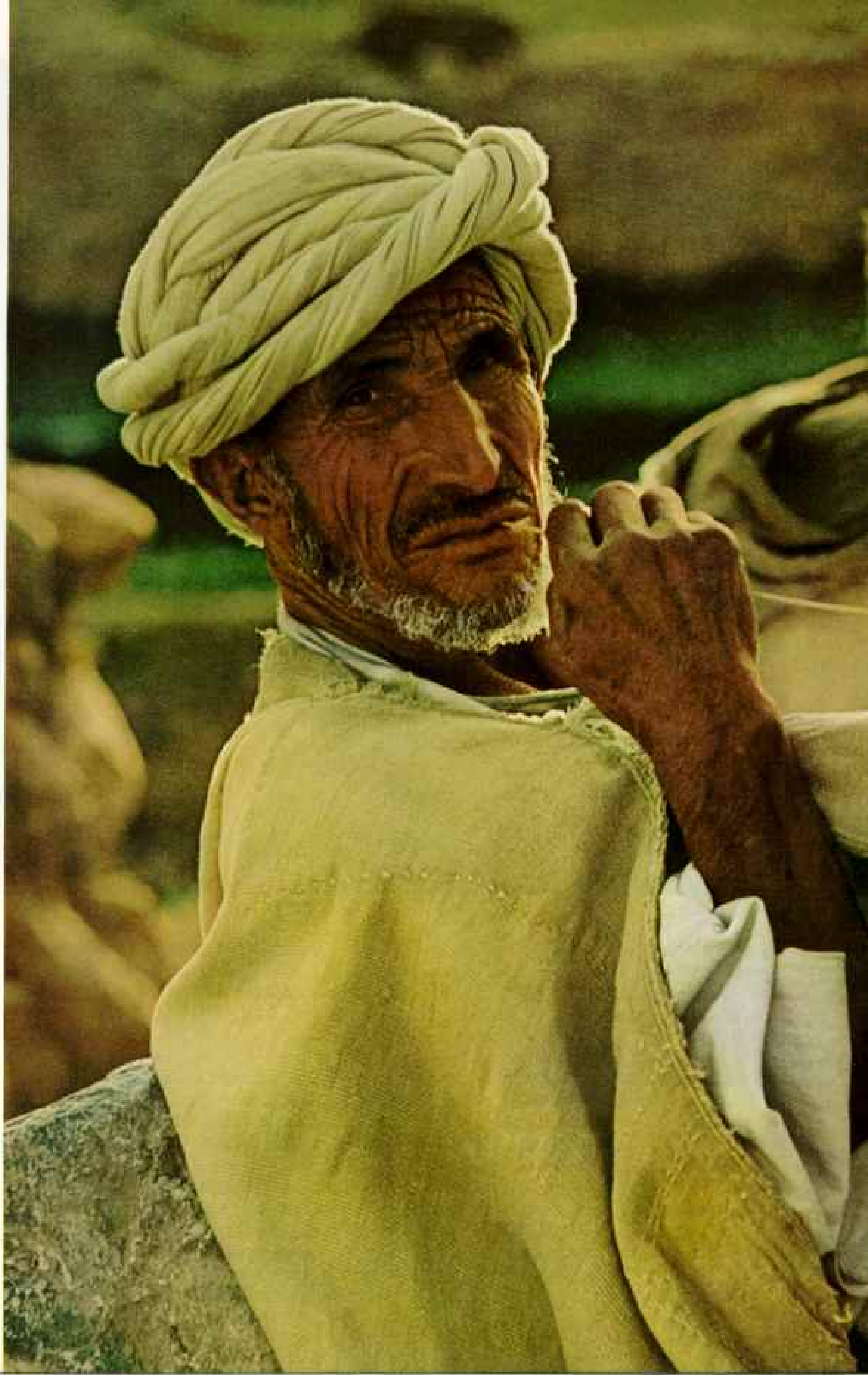
I planned to set out from Tinerhir, a village in the foothills of the High Atlas halfway between the Moroccan Atlantic coast and the Algerian border to the east (map, preceding page). To get there, we bounced east in a bus.

At Tinerhir we bought the large mule and

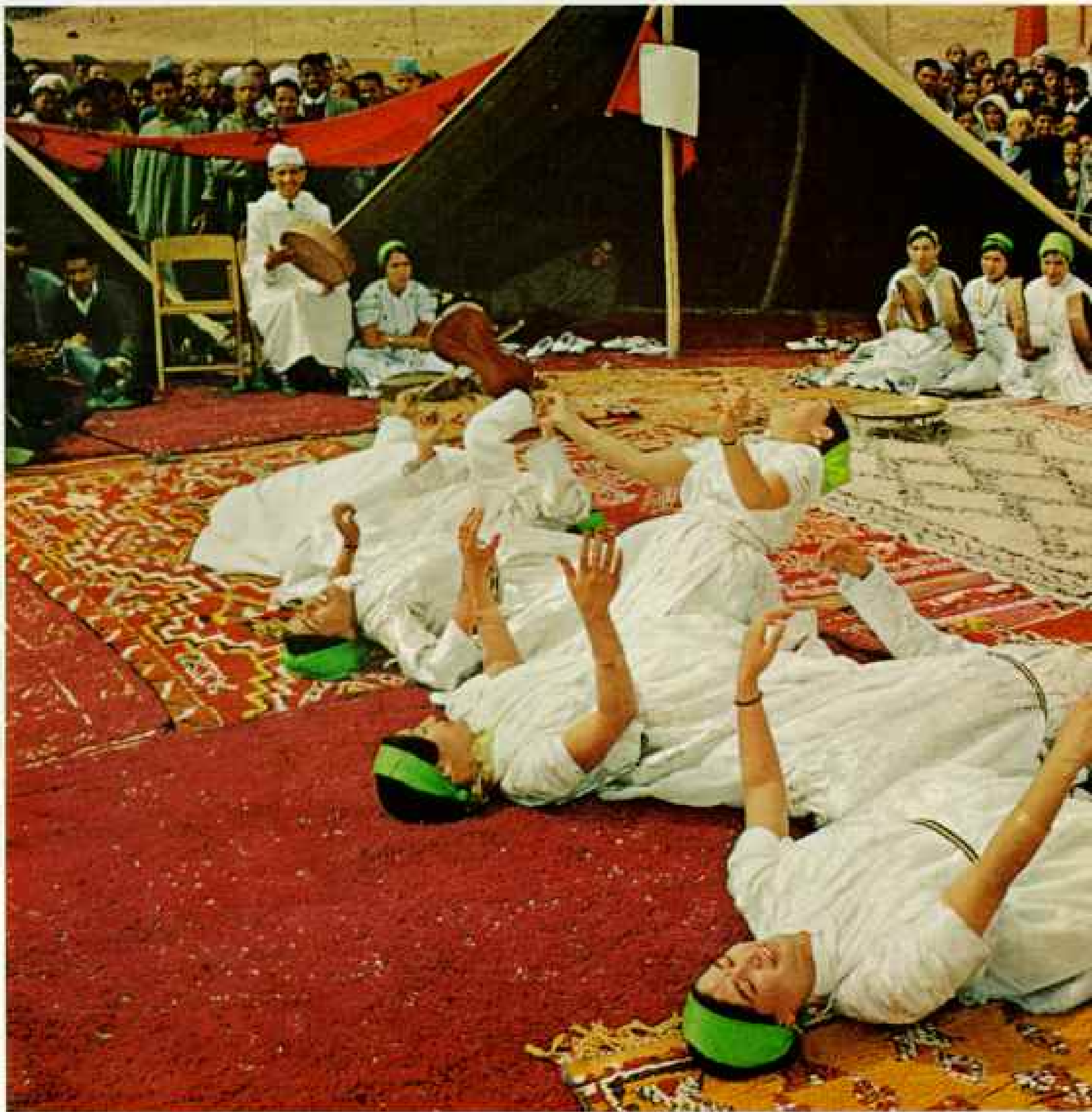
the small one. When we had mastered the arts of loading them and coaxing them into forward motion, we set out for the High Atlas.

The countryside through which we passed was one of extraordinary beauty, especially now in March with winter nearing an end. Streams swollen with melted snow from the hoary peaks all around us raced through pleasant valleys. Unveiled women in clothes of bright colors worked in the grain fields.

The people of the smiling valleys belonged to the Ait Haddidou and Ait Morrhad tribes (above and opposite), two of more than 200 Moroccan Berber groups. Speaking a tongue distantly related to that of the desert Tuareg,







these mountain Berbers are believed by anthropologists to be descendants of the original inhabitants of the Atlas.

At Imilchil I engaged Saïd as a guide for the next part of the trip. The route I had chosen would be innocent of trail for more than 20 miles, and devoid of any shelter.

"Why do you not take the easy low road the people use when the snow is in the passes?" Saïd asked. "I will lead you, yes, but it is a foolish thing thus to select the way of danger."

And I could answer only that I wished to make photographs of snow. Shaking his head, Saïd led forth upon the trail. We followed. Then came the time when the silly mules stepped blithely into deep snow—but about this I have already told.

That evening, in the home of the sheik of Aït Ali Ou Ikkou, ten guests sit on the living-room floor drinking the mint tea that precedes every Berber meal. They enlarge their circle to let us in.

We are lucky: The mountain people do not eat until 9:30 or 10:30 at night, so we are in time for dinner. Saïd is very hungry.

He had eaten little on the trail. A devout Moslem, he had declined the sardines, cheese, and oranges I offered him because they had been touched by unclean hands.

Many questions precede the meal.

"Who is this strange youth who assassinates our language and wears his hair to his shoulders?" the sheik asks Saïd, nodding in Ahmed's direction. These Berbers shave the skull.



ETHNOGRAPHY BY FREDERICK S. BRADY © H.A.R.

To honor the king, dancing girls entertain the townspeople of Tinerhir. Throughout the country, feasting, dancing, and singing celebrate the anniversary of the coronation of Hassan II of Morocco on March 3, 1961. Supple as willows beside a river, the dancers sway to the beat of *alluns*, Berber hand drums.

Delighting in singing and dancing, Berbers compose music strange to the Western ear, but with a resemblance to Arab and flamenco rhythms. Reveling in storytelling, women recite legends of sorcery while men recount tribal history and lore.

Said explains the strange speech and mixed Arab-Berber customs of faraway Marrakech, even accounting for Ahmed's American-style blue jeans.

The sheik turns to me. "Now whence comes this blond foreigner traveling with a mule, as we do?" he inquires. "He carries nothing to sell. He does not ask to buy anything. Why is he in my village?"

I came originally from Belgium; I live now in New York City—this much I manage to convey to him. But how do I explain what it is that drives me into unknown places, heedless of discomfort?

#### A Way to Travel Fast, and a Way to See

I think back on my journey across Africa by motor scooter. In my greedy youth, I hurried to swallow the kilometers, raced without patience to reach my goal of Cape Town.

Then a feeling of futility had overwhelmed me. I realized there was nothing more fruitless than the drunkenness of kilometers and the lightning-flash crossing of continents. Prisoners of our speed, of the noise of motors, we isolate ourselves from the countries we cross as surely as if we looked at them through the glass of museum cases.

As the scooter's exhaust shattered the serenity of the Atlas, I saw it was the season when the Berbers leave their villages to set up their tents in the high pastures among their sheep. What was their life among the cedar-clad mountains, I wondered as I raced down into the Sahara?

And then for the first time I met the Tuareg, the men heavily veiled and mounted high on their magnificent white camels. I saw them crossing my trail, appearing suddenly from nowhere to vanish into nothingness as if snatched away by the horizon, and I thought that the shimmering point where earth met sky must hide fabulous treasures.

I did go back to the Tuareg, and the horizon did hold treasures. I found beauty, alike in the sands of the desert and in the hearts of the proud, dignified people of those sands.

Now I have returned to the mountains to seek such treasures among the Berbers, but I cannot say this to my new friends. I remain silent. The sheik of Ait Ali Ou Ikkou accepts my silence with a smile, a nod, and a command to serve the meal.

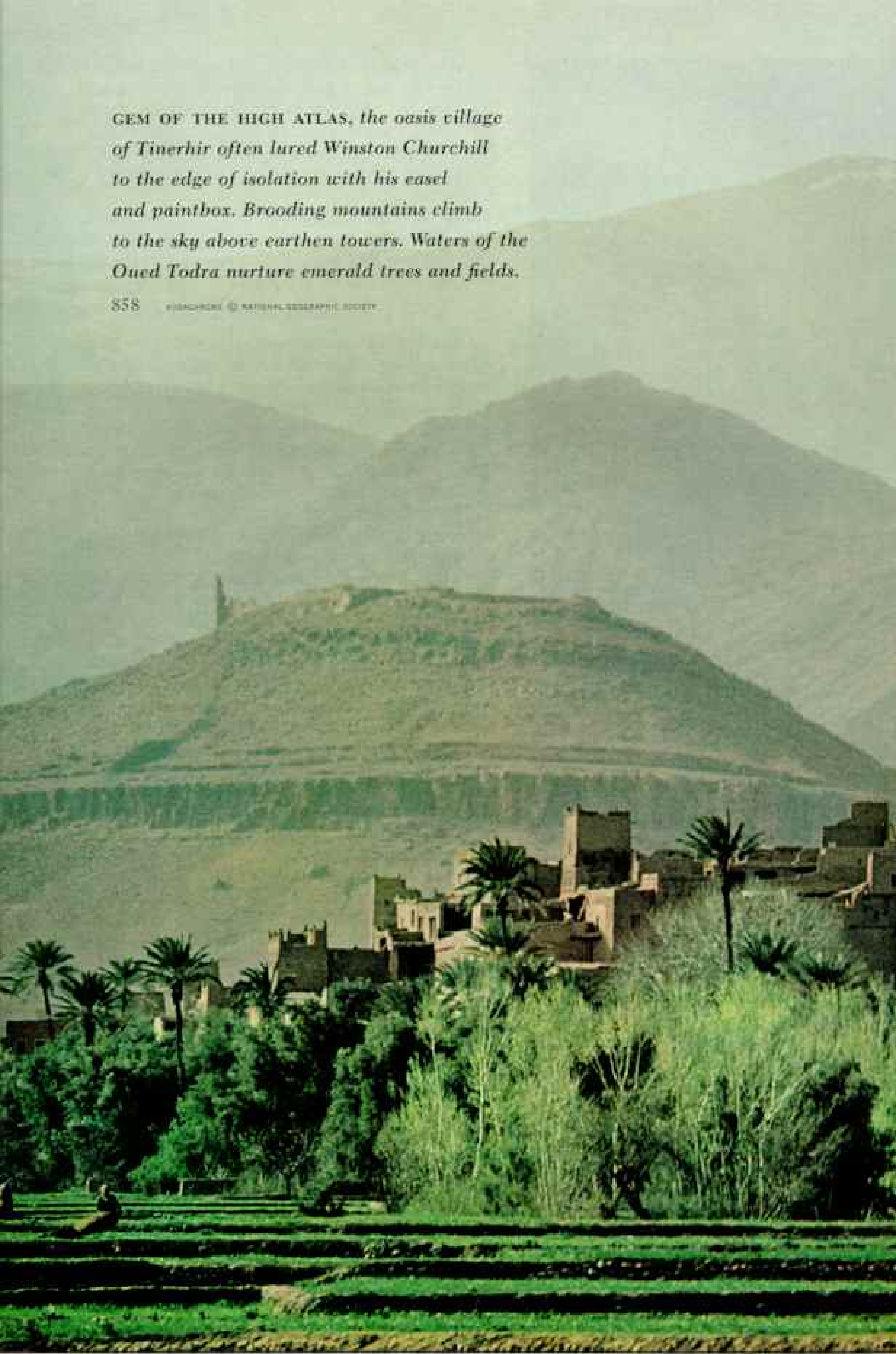
This man of the mountains has understood that I am immersed in thoughts difficult to express even in my own language. If his understanding is not treasure, I do not know what is.

In the morning Ahmed, as always, is virtually impossible to awaken and prod into preparing for the trail. "Oh, Zuhra!" he groans. "Why did I ever think I tired of you? Oh, to be with you now amid the comforts of Marrakech!"

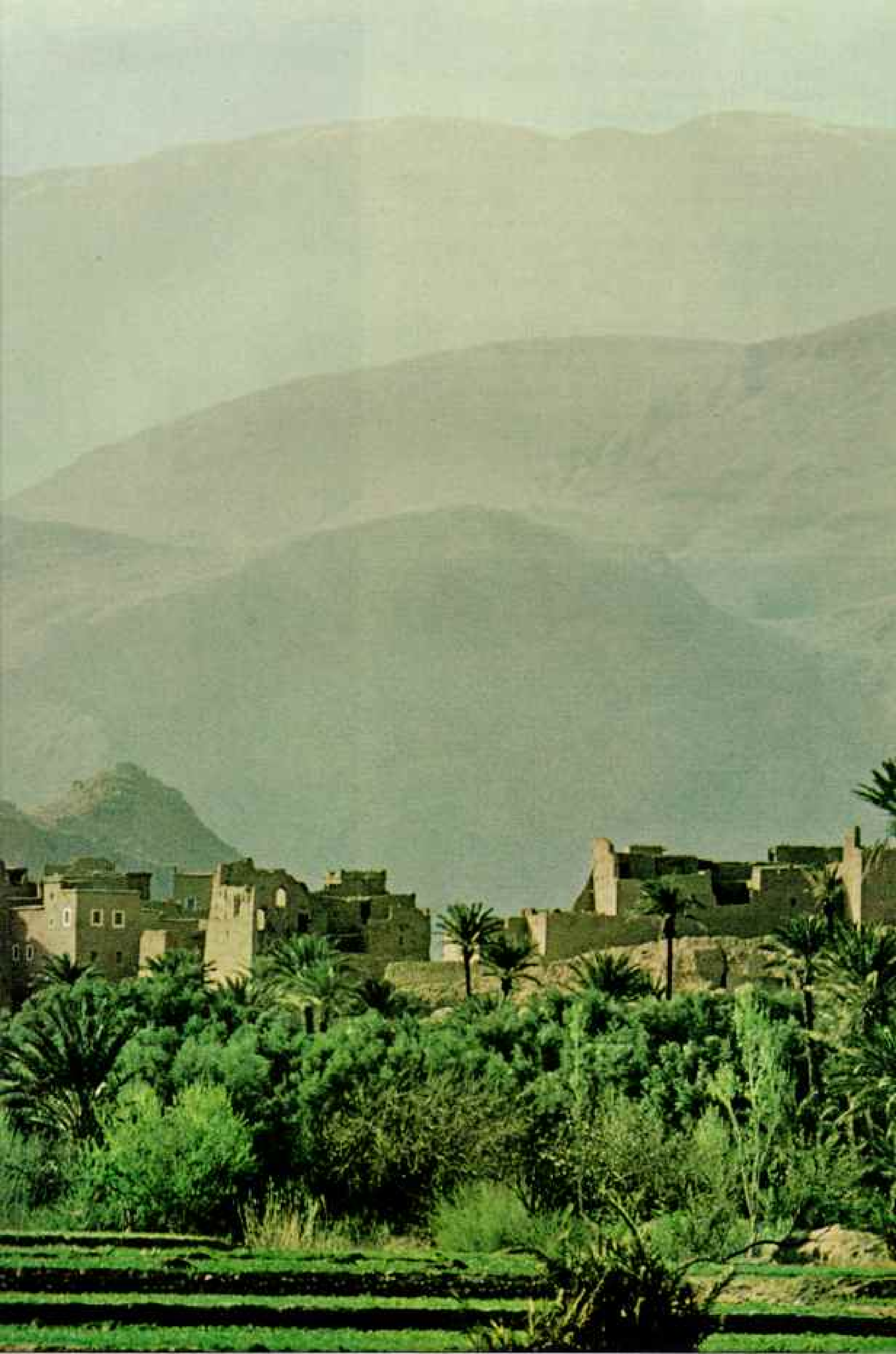
He does not wash. Among other things, he abhors cold water. He goes to feed the mules. When I join him, he is surrounded by people of the village, who

GEM OF THE HIGH ATLAS, *the oasis village of Tinerhir often lured Winston Churchill to the edge of isolation with his easel and paintbox. Brooding mountains climb to the sky above earthen towers. Waters of the Oued Todra nurture emerald trees and fields.*

858 VISAGE/REX © NATIONAL GEOGRAPHIC SOCIETY







listen to him respectfully and address him as "Si Ahmed—Mr. Ahmed."

They call me Victor. No Mister. It is easy to see that Ahmed has told them I am his servant. Ah, this Ahmed!

I tear him away from his admirers, and we take the trail, bidding Saïd good-bye. Within an hour we reach the village of Haodéguine.

Often from a distance, in this cold season, an Ait Haddidou village appears deserted, for the people remain hidden from the biting wind. Haodéguine seems no exception. But I enter, and what do I see? A ball game in full career (right).

A group of young men is playing in the central square. One of them catches a ball made of rags and sends it into the air with a great kick. A member of the other team fields it and kicks it back up. The team that first makes ten catches in a row without dropping the ball wins.

As night falls the game ends. Quietly the people move together. Men arrive with shallow drums. The people start to chant. This is the beginning of a *haïdou*,



At day's end, a time for play: Men of Haodéguine kick and catch a rag ball in the lavender light of evening. Women and children gather about a village threshing floor, marked by a circle of stones.

Mansion of mud rises in the Atlas. Within a wooden form, a workman pounds dampened earth that hardens quickly. Layer upon layer creates a multistory dwelling. Central Asians use the same method; European and North American builders have experimented with rammed earth.



INTRODUCTION: ILLUSTRATION BY VICTOR ENLILIST, BACKGROUND BY DAVID HIGGS © N.A.C.C.

the traditional dance of the region, accompanied by singing and hand drums.

Standing shoulder to shoulder, turning slowly, balancing first on one foot, then on the other, the singers face each other in a circle. One group chants a sentence, another improvises an answer.

Ahmed tells me it is a song of unrequited love, but his translation seems so unlikely I do not believe him. Several months later, in Marrakech, I run across a slim volume of poems by Mririda n' Ait Attik, a famous Berber poetess, and in it find a song so like Ahmed's

version I think it may have been the same:

*My heart is smitten with the son of Sidi Daoud! Why has he not looked at me?* runs the first line of Mririda's song.

There comes the response: *Because he was accompanied by his father!*

Then the question anew: *Her heart is smitten with the son of Sidi Daoud! Who will say why he has not looked at her?*

A girl sings another reason for his shyness: *Because a wasp made him a nose like a fist!*

Once the answer is inelegant: *Because he had just been carrying manure!*



For two hours one song follows another. Rhythmic, they are also monotonous to European ears, but somehow so moving I do not note the passing of the hours. The people, a few at a time, drift to their homes. We are alone with the village chief, whose title in Berber communities, as in much of the Moslem world, is *moqqadem*.

He leads us to his own house, for it is one of a *moqqadem*'s duties to render hospitality to passing strangers. We have a splendid meal—a *tajine*, or stew, of goat with turnips. The *moqqadem* retires to his bedchamber. We fall asleep in the second-floor living room, lulled by the sound of sheep ruminating below, like the distant grumbling of rapids.

#### Berber Woman's Day Starts Early

To see village life, and to rest, I decide to remain a few days in Haodéguine. Here a winter day begins well after the sun has risen—for the men, that is; often the women are up and working before dawn.

I have seen them weave until 2 a.m., take a nap, and then at 4 begin grinding barley in their primitive hand mills for the midday meal.

The men who are shepherds leave for the small winter pastures about 8 o'clock; those who plow the fields, an hour later. The plowmen are back at noon and work for the rest of the day only at such small jobs as crushing date pits for animal feed.

Ahmed speaks no more of Zuhra. The girls of Haodéguine are driving him out of his senses with their beauty. They are not shy with him; Berber women have more freedom than their Arab sisters.

"Are you a man or a woman?" they tease, pointing to his long hair. For reply, he waggles his upper lip and twirls his mustache.

He grows indignant because the girls do the hard work, while the men only watch.

"You are barbarians!" he scolds the proud mountain men. I fear he will anger them, but they only smile at his tirades while the *moqqadem* throws me sly winks, as if to say, "One day this city boy will learn how women should be treated."

The good chief shows no annoyance at our extended stay in his house. To ease my conscience, each day I buy a chicken for dinner. With this and edibles from our saddlebags, Ahmed concocts stews that send the *moqqadem* into ecstasies.

"I shall never again be able to eat my wife's cooking," he says one evening, belching politely. "The man of Marrakech must stay here.

"You also," he continues, turning to me. "You must remain and marry an Ait Haddidou girl."

"This would be a great honor," I reply, "but I am already married and the father of two children."

"Two children? What is that? One of our girls would give you six!"

"Yes, perhaps. But have I not heard it said that Berbers never marry outside their own tribes?"

"Ah, this is indeed true of the Ait Haddidou; we have no need of our neighbors' women. Compared to ours, the girls of the Ait Atta are ugly, while those of the Ait Seddrate have displeasingly dark complexions."

Firebrand crusts a loaf of bread in a primitive brazier. This Berber housewife places her dough on a hot stone to form a crust on one side, and sears the other with a piece of flaming wood. Thus protected from dirt, the loaf is baked in glowing coals for half an hour. The baker wears a necklace of amber, a favorite of Berber women.



"And yet," I persist, "you would permit me, a stranger and an infidel, to marry one of your pure and beautiful girls?"

"Yes," says he. "I have become quite fond of you. And now that it is all settled, shall we go out and pick a flower for you?"

"Thank you again," I say, rising hastily and heading for the door. "I have still a long journey to make. Might we not discuss the matter when I return from my travels?"

Berber girls of the Atlas marry by 15 or 16. Parents choose the partners, and many alli-

ances fail. Often the newlyweds part and return to their parents after two weeks. No one reproaches them, and they are then free to marry according to their own inclinations.

A man may divorce a wife simply by announcing the fact before witnesses. She leaves his house, and is then free to take another husband three months later.

The day before we are ready to depart, the villagers celebrate the Feast of the Sheep. This Moslem religious festival commemorates Abraham's willingness to sacrifice his

ILLUSTRATION BY VICTOR ENGELBERT © 1988





Like a patriarch of old, Haodéguine's religious teacher leads the men into the hills to pray at the start of Aïd el Kebir, the great feast that commemorates Abraham's sacrifice of a sheep in place of his son. The

son to God, and Allah's command to slay a sheep instead.

The people wash their best clothes. The men pile their great white burnouses on flat rocks beside the stream that runs past the village. Wetting and soaping the garments, they dance on them, marking cadence with cries (page 869). Among the white burnouses I see several white dresses. A man would lose face by helping a wife carry wood, but it is quite all right for him to wash her clothes.

Ahmed, too, washes his shirt and accompanies me, grumbling all the way, to the outskirts of the village for the religious ceremony with which the feast opens (above).

After prayers the sheep are slaughtered. Those that must die have been carefully washed, and each is served some barley, as one gives a last meal to a condemned man.

The people sing and dance. Ahmed, his shirt gleaming like snow, is surrounded by girls in their best dresses and finest ornaments.

In the afternoon the sheep come off the spits, and we begin to eat. From glass of tea to glass of tea, the day spins along to the hour of the ball game, then to the songfest.

Afterward, Ahmed comes to me in such a trance that I am alarmed. "Are you drugged or ill?" I demand, shaking him.

"Victor, I am in love," he replies. "And I need your assistance."

I have seen the girl. She is 15, fat, and not very pretty.

"She has promised to run away with me," Ahmed continues. "I told her she could ride your mule, on which you do not often ride in any event, for you are always taking pictures."

By this time I know my Ahmed very well.

"Of course your beloved can ride my mule," I say. "But not immediately. We will first complete my work in the region, then we will return on a dark night and steal her."

We leave the village at dawn the next day. Even I, who have not fallen in love, am sad to go, for I am leaving good friends.

Ahmed lags far behind, casting dejected looks over his shoulder. After an hour I turn back, and find him assisting a strange young girl to mount his mule.

"This jewel of the Aït Morrhad people happens to be going our way," he says. "Is she not beautiful? When I learn her name, I will tell it to you."

The plump flower of Haodéguine will await her lover in vain.

#### Goat Meat Gets Stronger Day by Day

Descending from the High Atlas, we go south in the valley of the Oued Dadès. Signs of spring increase: the wheat bursts from the soil. Once we cross a true sea of grass the color of emeralds, from which rise red





RODOLPHE M. NATIONAL GEOGRAPHIC SOCIETY

Berbers, though less orthodox than Arab Moslems, ceremoniously observe Aid el Kebir. After prayers, men return to the village to kill the sheep. Women cook the meat, and for three days the town feasts.

buildings with lofty crenelated watchtowers.

The jewel of the Ait Morrhad leaps from Ahmed's mule and runs inside one of these. We do not see her again; I am never to know her name. Ahmed is again despondent.

We begin climbing anew, bound into the Jebel Sarhro, to the east of the Anti Atlas range (map, page 853). A rough and wild region, it lacks water and has few settled communities—only tents and an occasional poor dwelling. As there are no sheiks or moqadems to feed us, we run low on food and buy a goat from a herder.

For the first two days the meat is delicious. Then the sun and flies begin to win their battle with us for its possession, the taste grows in strength, and on the eighth day we are just able to choke down the last of it.

One night it rains heavily. We improvise a tent by sewing our saddlebags together. This homemade shelter leaks like a sieve, for the bags are porous rug material. In the morning we look like two mud statues.

Angry because I cannot awaken Ahmed, I leave him to follow with the mules and set out on foot at first light. We have turned north again, heading for the village of El Kelâa des Mgoûna, where we must replenish our supplies. I do not think Ahmed can miss the way.

After some hours I sit down to wait for him, but he does not come. I go back to look

Festival finery bedecks a girl of Haodéguine. She covers her everyday headdress with scarlet cords and clusters of silver spangles.



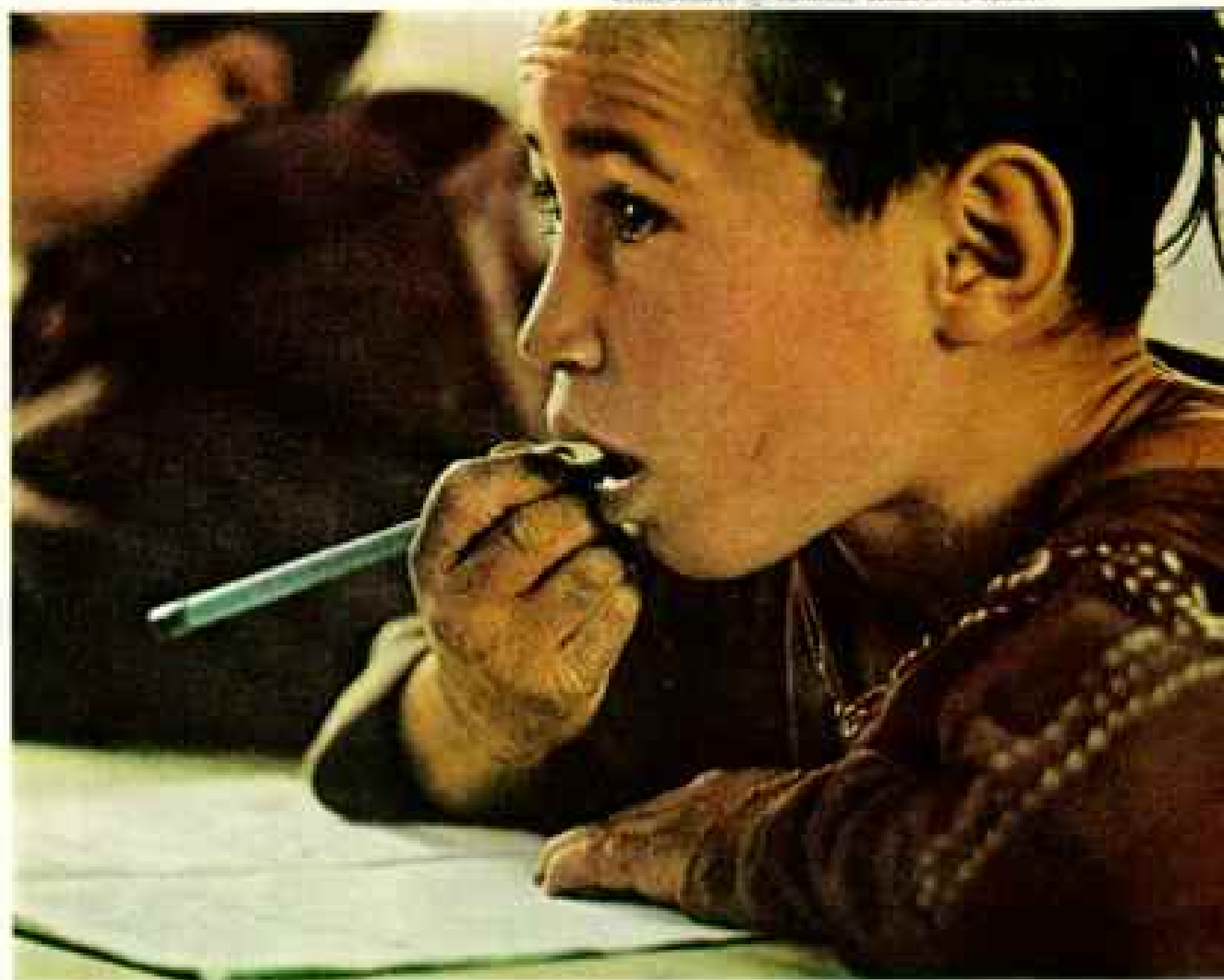




**A game as old as childhood itself:** Unhindered by ankle-length robes, Berber teen-agers play leapfrog. Soon to marry, these young girls learn wifely duties from their mothers: cooking, wood gathering, tending fields, spinning wool, and from it weaving the distinctive black-and-white-striped garments of the Ait Haddidou people.

**Miracle of writing** absorbs a Berber lad learning Arabic in one of the schools recently opened in the mountain areas. Morocco's Berbers, eager for the education of their children, welcome schoolhouses and teachers. In secondary school, the youth will study also in French.

AP/WIDEWORLD © NATIONAL GEOGRAPHIC SOCIETY



for him. Although I climb every bit of high ground I find, I see nothing animate in this Dantesque landscape of broken, brooding mountains and dark canyons.

I am vexed. Ahmed has not only the mules but all the food, as well as my warm clothes. Unless I am to suffer great discomfort, I must reach El Kelâa quickly. I turn around and head for town, walking as fast as I can.

Three hours later, I see in the distance—*ahead* of me—two mules and, on one of them, a figure wearing long hair and blue jeans. In his hurry to reach the solace of a crowded town, Ahmed has galloped through some ravine, out of my sight, and gone far ahead.

He beats me to the reproach when I catch up.

"A fine thing!" he scolds. "First you abandon your best friend in this accursed, snake-infested country. Then you hide behind a rock to sleep, so that I cannot see you. If your feet hurt from walking so fast, it is only what you deserve."

After a short stay at El Kelâa, we are once more among the peaks of the High Atlas. Now it is mid-April, and although three high passes lie ahead, I think that at this season they will not be covered with snow.

"But do not expect Allah to aid an infidel such as yourself," says Ahmed. "In the next village, hire a strong guide."



I do not listen. We pass through village after village without seeking a guide. And then one day there are no more villages, for we have reached heights at which no one makes his home in the Atlas. Deaf to Ahmed's pleas that we turn back, I push on.

We climb into the 10,000-foot-high Tizi (Pass) n' Ait Hamad, driving the mules before us. They disappear around a bend in the trail. We follow, and there they are, once more belly-deep and motionless in snow (page 873).

Ahmed's cries of despair enrage me.

"Either go back alone or stop howling and help me dig out the mules," I tell him. "Myself, I shall cross this pass."

Ahmed looks back and down at the savage landscape we have just crossed. Rolling his eyes heavenward, he falls grimly silent and starts digging in the snow at my side.

After 10 minutes we have freed the mules.

"*En avant!*" I shout. They step forward and immediately sink once more to their bellies.

I am in canvas shoes because my heavy shoes have long since given out, and also, like



Zebra design scores the face of a salt mine near Toumliline. For perhaps a hundred years, villagers told the author, their people have chipped away at the rock salt with primitive picks. Men shed outer clothing to work in the gallery.



Postage-stamp fields cling to mountainsides near the village of Hadida. Hard-working Berbers cultivate every inch of arable soil.

Ahmed, in blue jeans. I can no longer move my icy toes or my blue fingers.

Because of my stubbornness, we are truly in trouble. At this moment God proves to be tolerant as well as compassionate. Around the bend behind us comes a sturdy man of the Mgouna people, a Berber tribe whose territory we have entered.

"You are not doing the things that cause mules to walk in the snow," he says reprovingly. He thereupon begins to do the same things we have been doing, such as pulling at

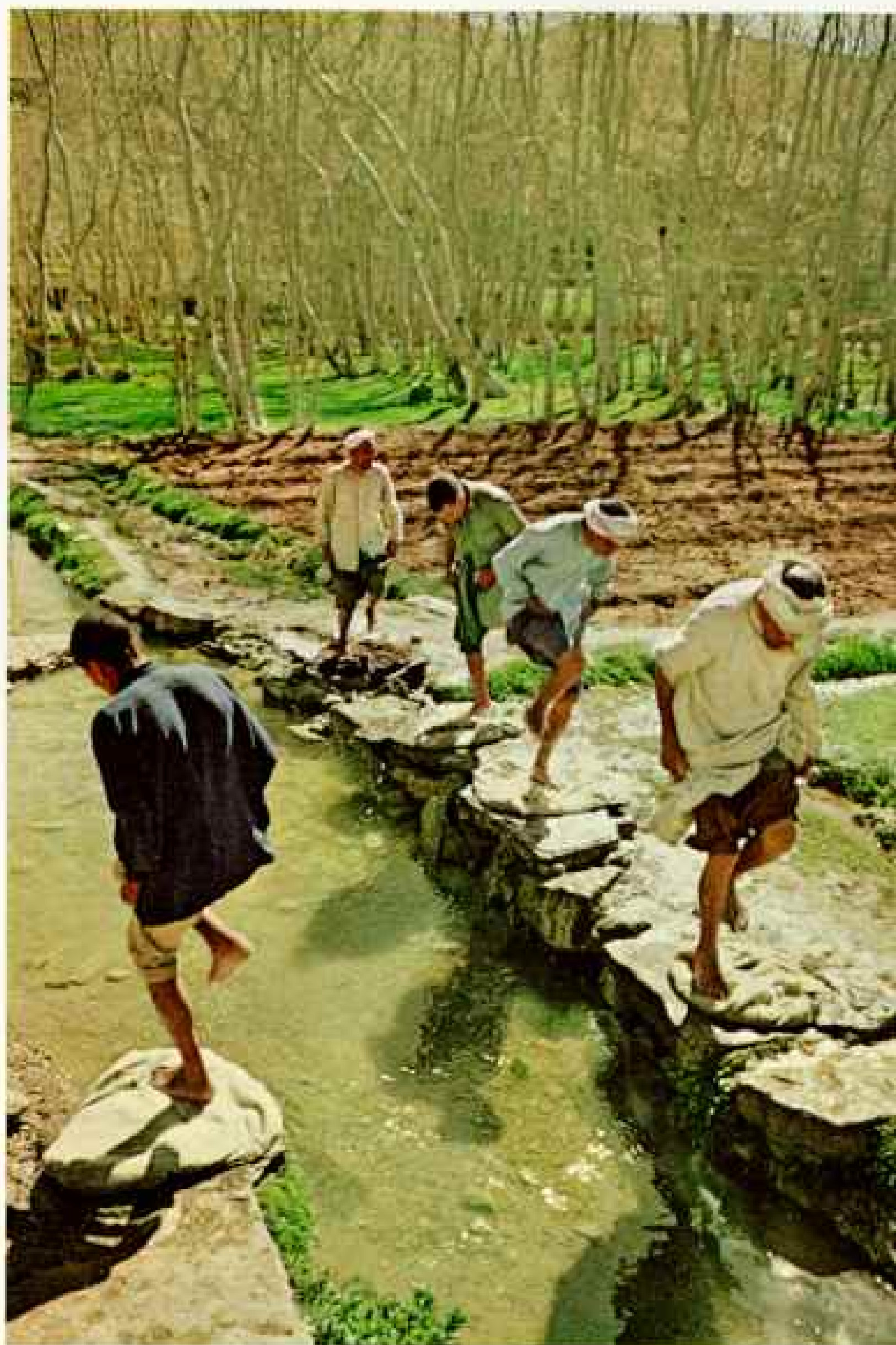
the beasts' bridles, pushing their rumps, and making loud comments on their intelligence.

The mules turn startled countenances in his direction. They grunt, they snort, they heave themselves forward. They continue to do so, spurred occasionally by chirping whistles from the Mgouna.

His name, he tells us, is Addi. He lives at Ouzirimt, below the pass. He has been to market at El Kelâa, covering nearly 40 miles on foot today and a like distance the day before. He appears to carry no purchases.



Here they grow barley and wheat to be stored in a communal granary. Ditches fed by snow irrigate fields as high as 7,000 feet.



Dance of the washermen pounds dirt from robes to be worn for Aid el Kebir. Since the women are busy with other chores, the men do the washing. They dip the clothes in the irrigation ditch, then lay them on flat stones and stomp away till clean.

EXTRAORDINARY (TOP LEFT) AND FOLKLORES © N.C.S.



Morning sun fires the red-earth citadel of Ait Slilo, fortified as are many Berber villages. During

"What did you buy?" I ask.

"These," he says proudly, producing a small packet of tea and another of sugar.

Just as we break through the last drift onto bare ground, a blizzard of snow shrouds the Tizi n' Ait Hamad behind us. No one is so unkind as to mention what might have happened had Addi not arrived when he did.

We reach Ouzirimt in the night and fall into exhausted sleep on Addi's floor.

Bad news arrives next morning. Two men, eyes still red from sun on snow, tell us that they have just attempted the first of the two passes still ahead of us, the 9,700-foot Tizi n' Ait Imi, and found it impassable.

"Now last night's storm has closed Hamad behind us. We are prisoners here."

And so it proves; we stay in Addi's house eight days. It is not an unpleasant imprisonment: The house is comfortable and beauty





EXTRAPHOTO BY VICTOR ENGELBERT © N.A.S.

fierce tribal wars, sentries kept watch from rooftops that today serve as terraces for entertaining.

surrounds us. Ouzirimt lies in a valley clothed with weirdly shaped, centuries-old junipers. An icy stream roars nearby. Snow falls daily.

Addi's mother, two wives, and his daughter live in the house. The women do all the work. When they are not sweeping, fetching wood, or cooking, they labor at their distaffs, spinning and carding wool. Addi only putters about all day long. He makes tea, mends a garment, or receives a visitor.

The older wife is about 30. Addi tells me she found the housework too much for her and asked him to take the second wife, who is 18, only three years older than the daughter by the first wife.

The women appear to get along beautifully together. At evening meals the first wife sits beside Addi. Sometimes she allows herself a brief gesture of tenderness, such as resting her head on her husband's shoulder.



Living in the midst of these hardy, handsome Berbers, I wish I knew more about them. But this would be difficult, for their origins are shrouded in mystery. Some experts relate them to ancient Egyptians and Libyans, others to southern Europeans of Iberian stock. They are, in any event, Morocco's first known inhabitants.

The French, who ruled most of Morocco from 1912 until after World War II, learned first and foremost of the Atlas Berbers that they fought well. To subdue these mountain tribes was a bloody task that ended only in 1933. In 1956 the French left for home, granting Morocco full independence.

#### Ahmed Gets Credit for a Team Effort

On the seventh day of our imprisonment I offer to pay three men to dig us a path through the snows of the Tizi n' Ait Imi. They accept and set forth with shovels.

We leave next morning, accompanied by a merchant who has also been stranded at Ouzirimt. We arrive at the pass and find a good trail cut through head-high snow and ice.

Alas, when we reach the crest we discover that snow has fallen heavily in the night on the north slope, and the work of our villagers is no longer visible. Nevertheless we start the descent, trying to remember what one does to make mules walk in snow.

Suddenly the merchant's mule slips and rolls down the hill. It fetches up against a rock after a dozen yards, but its load, a 120-pound sack of potatoes, breaks loose and goes much farther.

We retrieve the mule uninjured, but the potatoes prove difficult to drag up the steep slope. Ahmed pulls with great grunts. When

**Breaching a barrier of snow,** the author and Ahmed leave Ouzirimt, where a spring blizzard forced them to lay over for eight days midway in their journey. With a potato merchant bound in the same direction, they descend the 9,700-foot Tizi n' Ait Imi, a pass of the High Atlas. Floundering mules had made the crossing doubtful, but with coaxings, proddings, and imprecations they finally drove the animals over the top.

**Only a few more feet!** Mr. Englebert and Ahmed encourage a snowbound mule. Removing the pack to ease the weight, they struggle to raise him from the drifts and onto hard ground nearby.

he stops to rest, the merchant and I slide the sack over the snow.

We reload the potatoes onto the mule, then slip and slide down into the valley of the Asif n' Ait Bou Guemmez. Here we pass the night in the house of the merchant.

"I owe you this, Si Ahmed," he says. "Had it not been for your strong back, I would now be a potato merchant without potatoes."

In Ait Bou Guemmez, one of the largest and most fertile valleys of the central High Atlas, life appears very pleasant. Several crops a year spring from the good soil, and streams turn grist mills, so that the women need not grind grain by hand.

The merchant not only shelters and feeds us, but guides us into the next region we must cross, that of Ait Bou Oulli. It seems less idyllic than Ait Bou Guemmez, perhaps because





it is raining drearily when we cross it, partly because the habitations are as much forts as houses and exude a feeling of menace. Rifle slits pierce their sturdy walls, and behind them we can imagine fierce eyes peering over sights trained on our hearts. But the tribal wars are done, and the slits spit fire no more.

Down the approaches to the Tizi n' Rhougout, the last pass we will cross, thunders a stream swollen with melted snow. The torrent zigzags across the trail, so we struggle through it every few minutes. Mules and men alike fall into the water.

Soaked and chilled, we descend into the valley of the Oued Tessaout, where many

times villagers have no room for us, or spare food, so that we must go on into the night seeking another place. When we do find lodgings, however, we receive gracious hospitality. On several occasions, we awaken to find our host beside our beds, bearing coffee.

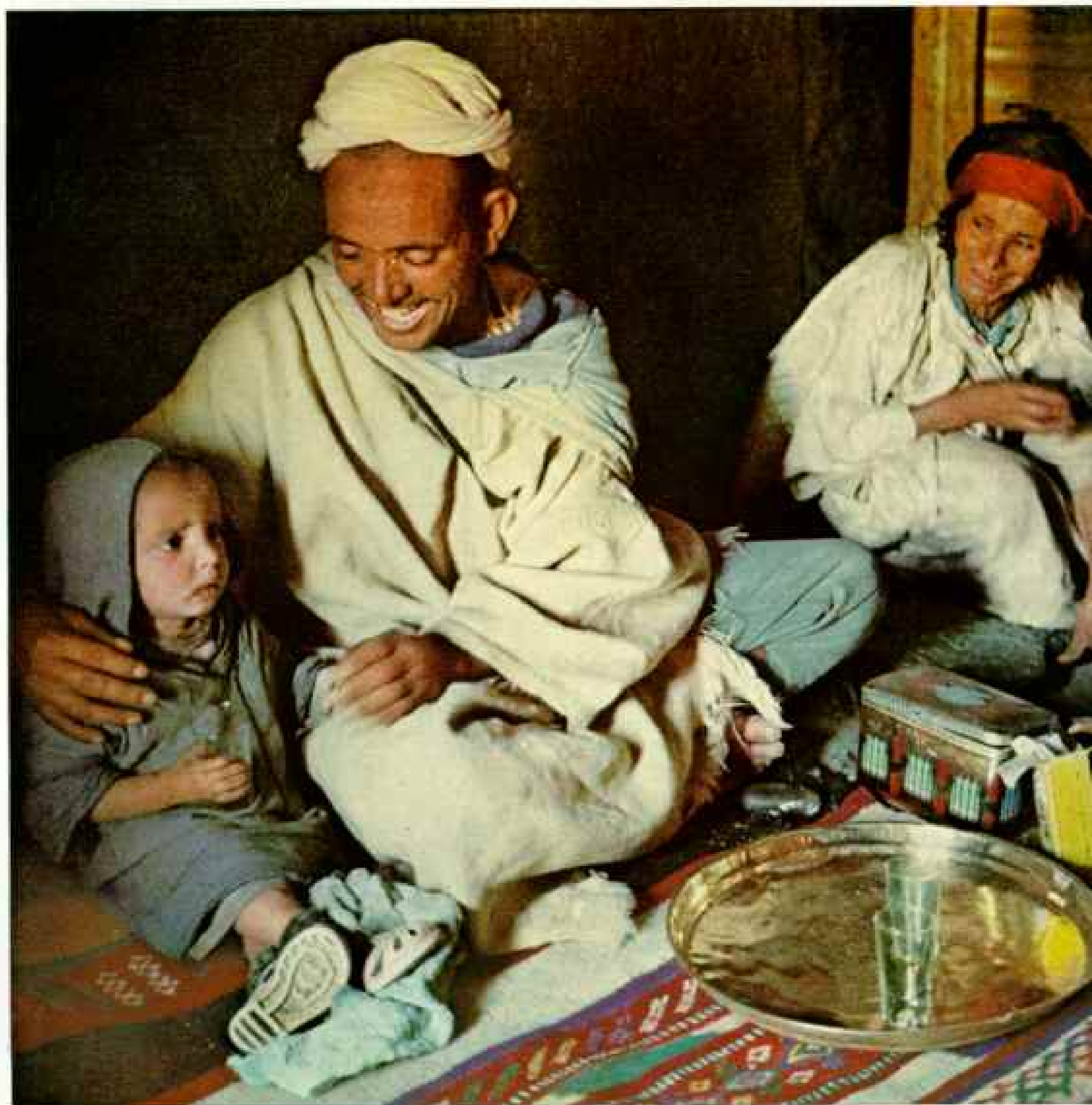
The coffee seems to me to have a strange taste, and I ask Ahmed what is in it.

"How should I know?" he replies. "They always bring it so early in the morning I cannot even remember drinking it."

But he goes off to make inquiries.

"Such savages!" he says, returning. "They sugar the coffee with pepper!"

We pass on into what is known as the



Glaoui country. This was the land of El Glaoui, the late Pasha of Marrakech and the Berber tribal leader through whom the French long governed much of southern Morocco.

At Telouet we see El Glaoui's casbah, or castle, once the finest building in the High Atlas. A multistoried chateau of many rooms opening into an inner courtyard, it formerly housed dozens of servants, warriors, and courtiers, as well as El Glaoui himself, his wives and entourage, when he visited his ancestral home. Now this beautiful casbah is crumbling into ruins.

From Telouet we go southeast to Ouarzazate. Here Ahmed decides he has had enough.

"Ah, Victor, I cannot go on," he says. "I will die of a broken heart unless I return immediately to Marrakech. Zuhra awaits me; I can no longer live without her."

We bid farewell, and he boards a bus. I am left with only two mules for company.

#### Without Ahmed, Mules Become Obstinate

But I will not have this company long. I have but four days to see the valley of the Oued Dra, verdant with date palms, after which I must be in Zagora to begin my return journey to the outside world. At Zagora I have made arrangements to borrow a car, and there I will sell the mules.

I set off from Ouarzazate to the southeast. I go as rapidly as possible.

This is not very rapidly. Without Ahmed's verbal volleys at their heels, the mules display their worst traits. When I say go, they stop. When I say stop, they gallop.

The first thing I find when I enter Zagora is a livestock market in full-swing. I tether my animals in its center and squat in the dust to await a buyer.

One arrives soon. He mounts the small mule to test its gait. It sinks to its knees and rolls over on its side. The man mounts the large mule. It too would have fallen down had I not propped it against a sturdy post.

The man offers me too low a price. I refuse it, as I do subsequent offers equally insulting. When the market closes at noon, I lead the mules back to the stable.

The buyers follow me to the little cafe where I am living and repeat their offers. Again I refuse to sell, and they leave.

They do not return. I grow worried, for I must soon depart Zagora. Therefore I leave the cafe and seek out the buyers.

To my astonishment, the mules seem no longer to interest them. Not knowing the rules of the game, I have made a gross mistake. As long as one merely listens to offers, he holds the advantage. But if he hunts out buyers, he gives away his desire to sell.

Bargaining begins again, but backward. Finally one man offers the lowest price yet.

"Decide immediately," he commands. "Tomorrow I will give less."

Ah, Ahmed, where are you? Without you the mules are as nothing. But Ahmed is in Marrakech. What shall I do?

Humbly I accept the offer. It will at least buy the gasoline that will get me out of Zagora.

THE END

# Mexico's Little Venice



PHOTOGRAPH BY NATIONAL GEOGRAPHIC SOCIETY

Article and  
photographs by  
**W. E. GARRETT**  
Assistant Editor

**O**N THE CANALS of Venice, the skillful boat handling of my friend Julio Crespo (above) would earn him the respected title of gondolier. In Mexcaltitán, his unique island village on the west coast of Mexico, I assumed he might be called the Spanish equivalent of boatman, *barquero*. Julio was mildly indignant.

"No, man," he said proudly, "I'm not a *barquero*—I can do all the work there is to be done."

Every man in Mexcaltitán, I found, must be able to handle a dugout canoe. From mid-August into early October, tropical rains drench the area, turning the village streets into canals. During the rest of the year the community stands above water, but still lies marooned in the swampy delta of the Río San Pedro. The nearest mainland road lies two miles away. As a result, the youngsters of Mexcaltitán learn canoeing as inevitably as they learn to walk.

Julio Crespo can set a net for fish and weave the weirs used to trap the plentiful shrimp that bring him and his 2,200 fellow villagers an increasingly good living. In the off season, Julio is an apprentice mason—a useful trade, now that Mexcaltitán's growing prosperity permits replacement of its mud-and-stick dwellings with houses of brick. As for Venice, Julio knows it to be "a city somewhere," but he is surprised to hear that it, too, has canals for streets. Few villagers can tell you that Venice inspired the name of the curving *Círculo*

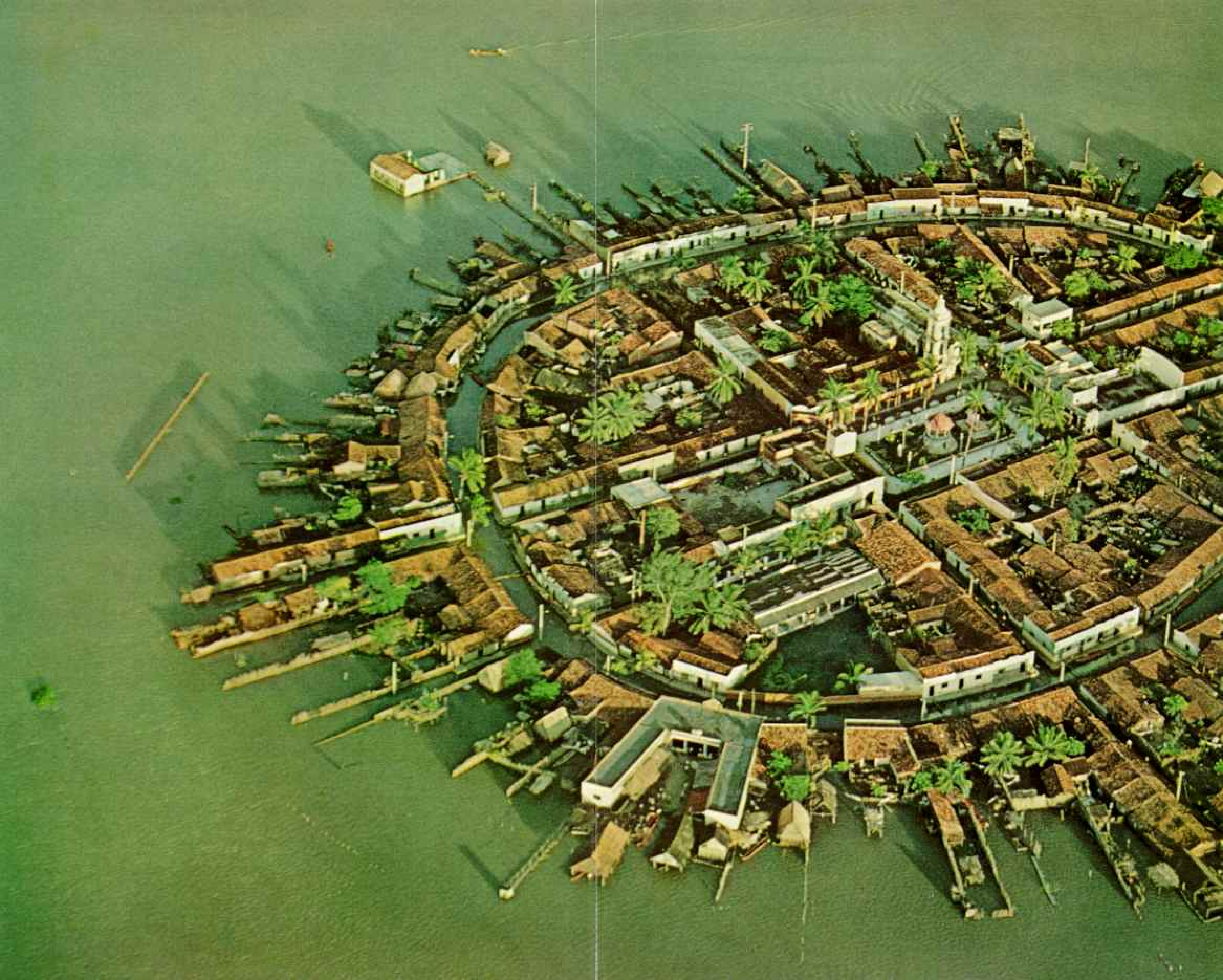
Joy in an heir shines on the faces of a Berber father and grandmother. With love and laughter they teach him the ritual of the tea ceremony, a Moroccan tradition of hospitality. They brew green tea, heavily sweetened and flavored with mint. To be polite, no guest should accept less than three glasses.

Berbers of the High Atlas, isolated and holding to centuries-old ways, are faced with the problem of melding traditional customs with the challenges of the modern age. Children still receive scant formal schooling within the village, but Morocco is making strong efforts to increase educational opportunities for these mountain people.

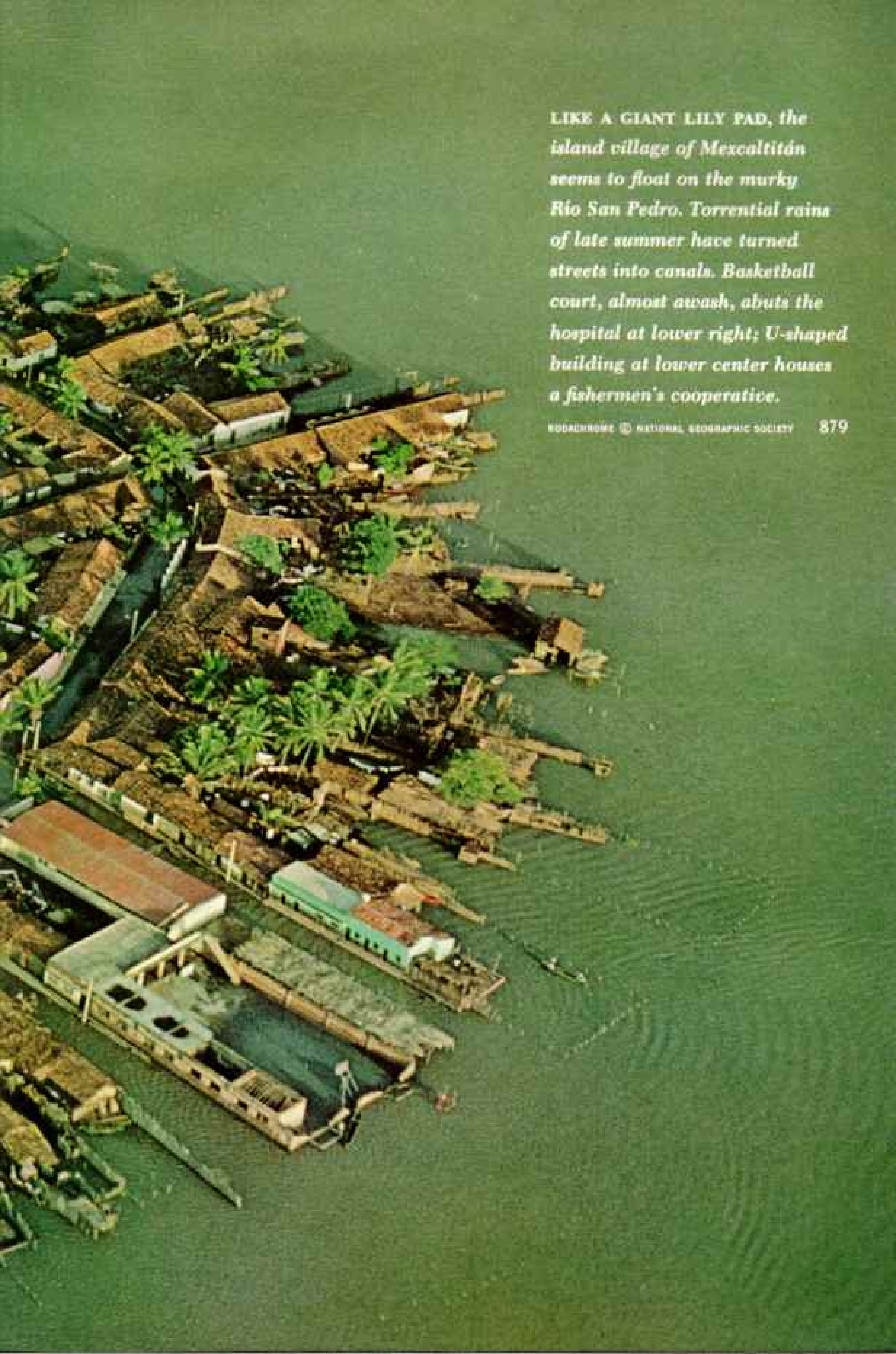


PHOTOGRAPH BY VICTOR ENGELBERT © N.G.S.









LIKE A GIANT LILY PAD, the island village of Mexcaltitán seems to float on the murky Río San Pedro. Torrential rains of late summer have turned streets into canals. Basketball court, almost awash, abuts the hospital at lower right; U-shaped building at lower center houses a fishermen's cooperative.



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**Street for all seasons:** Círculo Venecia, in January a dusty lane plied by an ice-cream vendor, becomes a waterway in September (right). Ten-year-old laundress García Lomeli watches a dugout negotiate an improvised drawbridge of mangrove boughs. Washboard and canoe come from the conacaste, or eardrop tree, so-called for its ear-shaped fruit.

Venecia, the street that completely rings the island (pages 877-81).

Historian Dr. Wigberto Jiménez-Moreno believes Mexcaltitán reached prominence by the 12th century, as Venice began to grow rich on trade. But Venice continued to rise while Mexcaltitán declined. Today few people know of the latter's existence, and none can be sure of its history.

Aztec pictographs, together with chronicles of the Spanish conquistadors, reveal fascinating similarities between Mexcaltitán and the long-sought, mysterious Aztlán, once the home of the Aztecs, who built Tenochtitlán, site of present-day Mexico City.

Mexcaltitán's circular design and its use of canals support the romantic conjecture that it might have inspired Montezuma's spectacular capital. For Mexico City itself was once a Mexcaltitán—an island community in the middle of Lake Texcoco. With canals for streets, it was reachable only by canoe until causeways were built. The canals have been filled in, and the lake has all but vanished; much of the modern city stands on the former lake bed.

The mystery of Mexcaltitán extends even to the present: Some road maps ignore it completely, and an official Mexican government map spells its name with a *z* instead of the standard *x*. The official map also shows two roads entering the village, where in fact none has ever existed.

I first learned of Mexcaltitán through Gene George, a friend in the Mexican resort city of Mazatlán. Gene had never seen the island





village, but he had heard that it lay somewhere north of the town of San Blas (map, opposite). Together we chartered a light plane and set out to search for the island. For an hour we passed over an abstract carpet of brownish lagoons and green mangrove isles. Pilot Roberto Aviles first detected the incongruous, man-made regularity that was our goal.

Roberto brought the plane low and we scanned the houses, jammed edge-to-edge on the circular main street, the great wheel of their tile roofs crosshatched by four streets (below and pages 877-9).

Rimming a central plaza, with its red-roofed bandstand, stood a steepled church and, incongruously, the wide, white screen of an outdoor movie. Coconut trees punctuated the few bare spots. A string of tall poles lifted electric lines across the marshes to the isle.

#### **Rent-a-canoe Fleet Numbers 50**

Now, three months later, I had come to an entirely different Mexcaltitán, where, as in most years, late summer rains had filled the streets to a depth of a foot or two.

Hours before, after driving as close to the village as roads permitted, I had made Julio's acquaintance. At the end of Nayarit State Route 24, three cannery trucks were backed

into the water, taking on shrimp caught by the men of Mexcaltitán. One of them, Julio, invited me to ride with him to the village in his dugout.

As we crossed the intervening swamp, I noticed that the region seemed to fit the description of Aztlán, the ancestral Aztec homeland, whose name means "Place of the Herons." Graceful herons and egrets fished along our way with scores of other water birds. Jaçanas walked in the shallows and on the lily pads that floated off every island.

To me, the lilies were beautiful; to Julio, they were a nuisance. "They jam our channels," he said. "Fish hide among the lilies, so we cannot catch them."

Julio used his long pole to push us through the plants. Once clear, he started a 20-horsepower outboard motor that quickly drove our heavy canoe through the two miles of twisting channel to Mexcaltitán.

The visual charm of discovering the village from the air is not repeated on the surface. Houses on the *Círculo Venecia* face inward, exposing their sewage facilities and animal pens to the boat-borne visitor.

We unloaded my gear on the concrete sidewalk in front of the house of Señor Amado Apodaca, the owner of our dugout and, in a



Beauty of the water lily fails to compensate for its disadvantages. The plant chokes waterways, making it difficult for Pepi Crespo and other Mexcaltitán boatmen to pole a passage. Fishermen find it impossible to net their quarry among the lilies. At low water each year this swamp becomes dry pastureland. In 1967 villagers killed a jaguar nearby.

Wafer of civilization amid a maze of marshland (lower left), Mexcaltitán lies 150 miles northwest of Guadalajara, Mexico's second largest city. Waters of the San Pedro delta, here blue in the dry season, turn tawny in the rainy months of summer and autumn.



RECONSTRUCTED BY GALLETRIC ALVARO ESPINOSA (2004), AND W. E. LARRETT © A.S.C.



Aztec drawing depicts Indians journeying from the lost land of Aztlán toward the site of Mexico City. Parallels between the Aztec capital and Mexcaltitán—*island location, canals as streets, circular design, similarity of canoes*—suggest the latter may have been their ancestral home.



manner of speaking, the rent-a-boat king of Mexcaltitán.

"Many people prefer to rent when they need transportation," Señor Apodaca told me. "All my 50 canoes are hand-carved from trunks of the conacaste tree, and cost as much as 3,750 pesos—300 of your American dollars. Small canoes rent for 20 cents a day. Large ones, such as your 25-footer, rent for more than a dollar a day or for \$12 a month."

For a funeral, I learned, the family of the deceased rents a small fleet of boats to carry mourners to the village cemetery, which lies on the mainland. On Festival Day, June 29, Señor Apodaca provides free canoes for the procession carrying the images of Mexcaltitán's patrons, St. Peter and St. Paul, to the cemetery.

When I inquired about accommodations for a few days, Julio, with typical Mexican graciousness, volunteered: "*Mi casa es su casa*—My house is your house." After visiting

his home, I declined politely. To have accepted would have crowded his family severely. Instead, I accepted a bed in the eight-room home of Señor Apodaca and his sister.

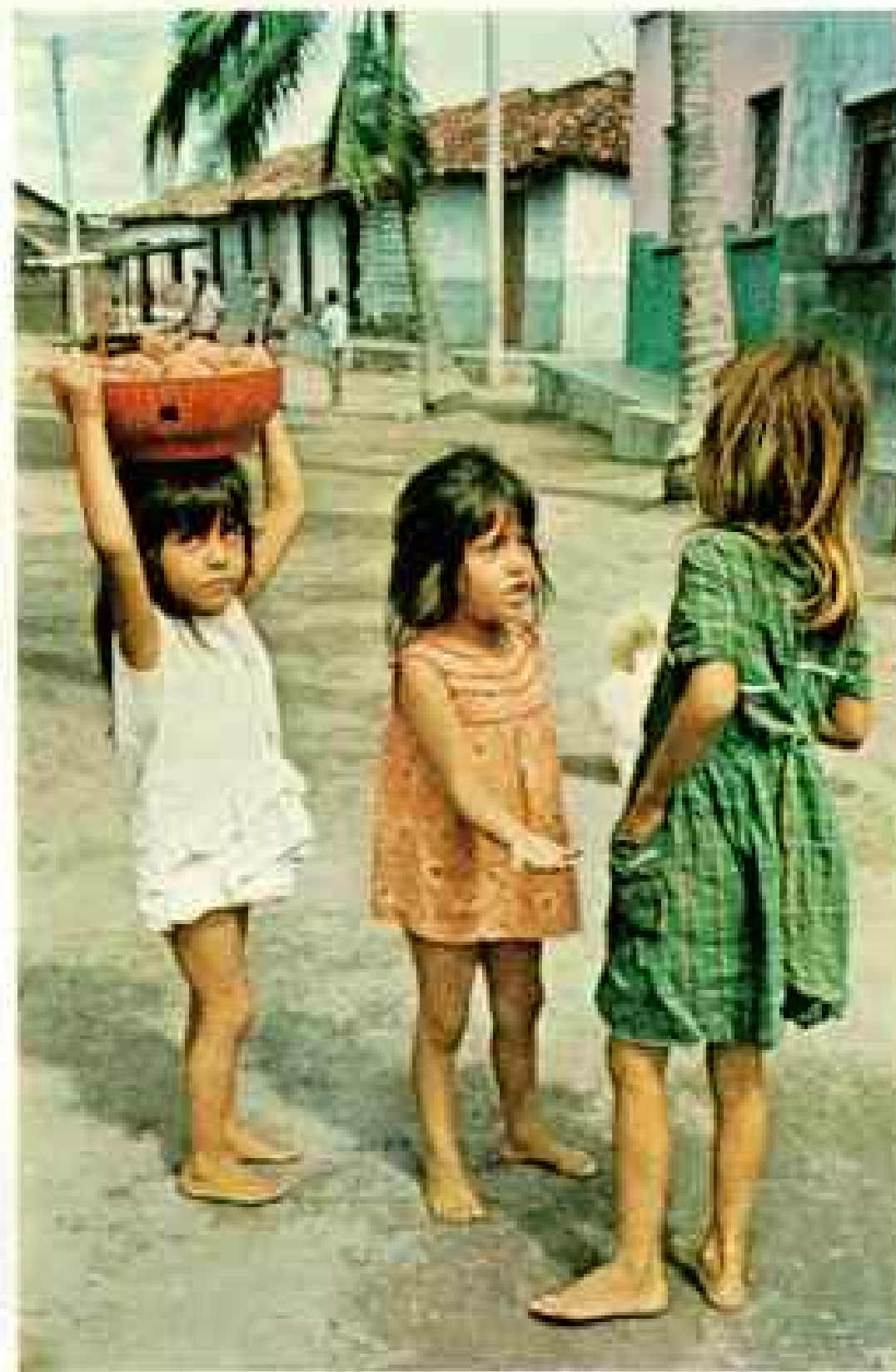
#### Village Life Rules Out Privacy

Julio's home is typical of Mexcaltitán. He and his wife Isabela and their three children share two beds in the single 12-by-20-foot dirt-floored room. Soon there will be a fourth young Crespo with whom to share.

Julio married Isabela seven years ago, when he was 17 and she 15. Until very recently they lived with friends or relatives. Now they rent their own house for \$4 a month, but privacy is not included; as we talked, a dozen uninvited children and two chickens drifted in and out of the room.

Isabela's kitchen lies under a shed roof behind the house. Just four feet from the clay cooking stove, an uncovered pit serves as a latrine. Immediately back of it, a





BEERCHOWRE (BELOW) AND DETROCHOWRE BY W. J. BARRETT © H.I.S.

"Not enough! No, not enough!" Bargaining grows heated during a street sale of *coquitos de aceite*. These fruits of the American oil palm, relished for a sweet, pulpy layer beneath the outer shell, do not grow on the island. The father of Luz María Ruvalcaba (center) gathered them on a fishing trip. Twin sister Martha Estella serves as patient bearer.

Heart of the village and hub of its social life, Mexcaltitán's plaza glows on a balmy January evening. Vendor offers candies and tropical fruits. Elders on benches talk over the day's events. An open-air theater lies behind the building at left; on twice-a-week show nights islanders can hear the movie free—but must pay to see it. A few television sets have reached the village. Floods seldom cover the plaza, but when they do, high curbs help keep water from invading shops and homes.

Piggyback ride thrills a boy romping on a dusty street that in a few months may become a canal bottom. When he tires of the sport, he can skip rope, play basketball, or take a canoe ride.

Mexcaltitán children may receive six years of schooling on the island, but for more advanced education must go to the mainland. Five young villagers are currently enrolled in Mexican universities.



picket fence encloses a neighbor's pigpen.

Such crowding is not uncommon, according to Comisario Othom Ramis Ortiz, the senior official of Mexcaltitán. "Our people have no land left for new homes," he told me. "And our birth rate now exceeds our death rate by 300 percent. Our sons will have to live on the outside—they won't fit here."

The appointment of a full-time medical intern for the island by Mexico's Federal Government largely accounts for the decreasing mortality rate among children. Dr. Ruiz Piña, a dedicated young man from Mexico City, was proud of the progress.

"Despite appearances," he said, "the people

do respond to our lectures on sanitation, and on prenatal and infant care. Last year 18 babies were born—all lived and are healthy."

Young couples on the island, such as Julio and Isabela, usually forgo the formality of a civil or religious marriage ceremony.

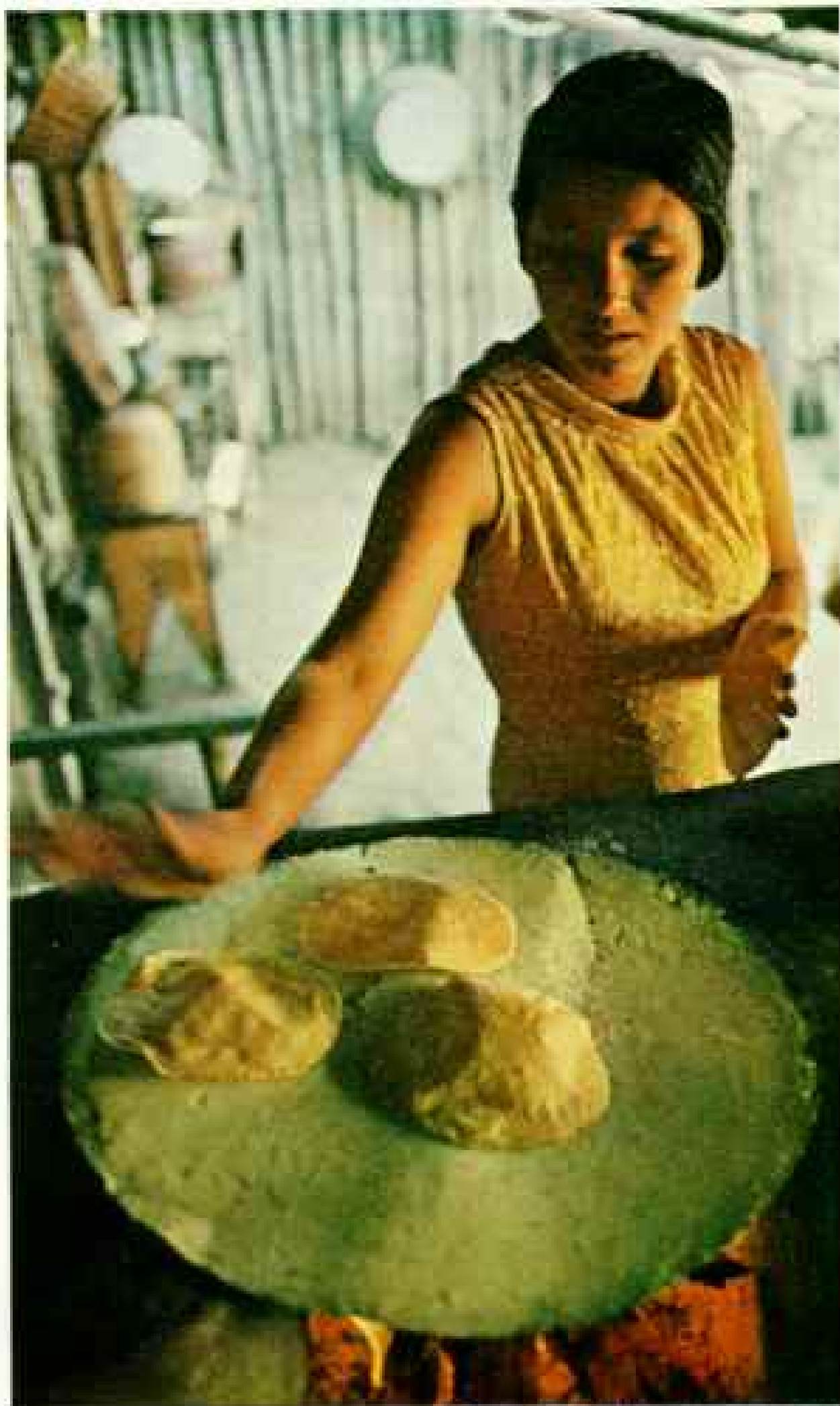
"It's just not the custom here," Julio said.

The practice has nothing to do with ethics, but with economics. "When there is a wedding, you must have a party," he said. "On the island, you don't invite people; everybody just comes. It might cost thousands of pesos to give them food and drink."

When I ventured along the inundated village streets with my cameras, I resembled a

**A must for every meal, tortillas brown on a clay stove. Patting fresh-ground corn meal into thin cakes, Isabela Crespo fries them without oil on a steel disk brushed with lime and water.**

**Sunrise will signal work's end for Mexcaltitán's fishermen. Through the hours of darkness they dip shrimp**



ESTHER OWENS © NATIONAL GEOGRAPHIC SOCIETY



sort of reverse Pied Piper. Instead of a mob of children following, I found the mob in front of me, all eager to be in the picture. They posed theatrically and thwarted my every ruse to catch them unaware. Even when I left a camera on a tripod and tripped the shutter by radio control from a block away, a few were always ready and smiling.

After several days on the island I began to develop claustrophobia. I wondered if the feeling ever bothered the residents. The men, I knew, leave to fish, but what of the women? Six stores on the island provide groceries and dry goods, so that the housewife seldom has an excuse to leave the village.

I asked one husband if his wife ever went to mainland villages to shop.

"She goes regularly," he assured me. But from the kitchen came a different opinion, loud and clear: "Yes, I go every time the cow jumps over the moon!"

To keep the women from growing apathetic about their chores, the town's one policeman walks his circular beat every morning, inspecting sidewalks in front of each house and, in dry season, the streets themselves. If either needs sweeping, he warns the housewife responsible. If the job is not done when he returns, he wields the broom himself—and levies a five-peso fine on the offending *señora*.

from traps made of palm-leaf ribs; kerosene lamps hanging inside attract the crustaceans to the surface. On an especially good night the shrimpers may net as much as 15 tons. Canoes carry the catch to the mainland, where it is iced for the journey by truck to a processing plant.





As autumn nights descend on Mexcaltitán, hundreds of flames flicker far out across the waters of the San Pedro delta. These are the lights of shrimp fishermen at work. Julio took me to see them, picking me up in his dugout at 3:30 a.m.

After a mile or so, we began to see flickering lights in the blackness, thrown by candle-size kerosene lamps hung just above the water, inside the heart-shaped weirs.

"The river flows through the traps, but the shrimp cannot," Julio explained. "The light then draws them to the surface, within reach of the fishermen."

With long-handled dip nets, the men scooped the wriggling shrimp from traps into canoes (preceding page). As the glow on the eastern horizon gradually became a band of light, the shrimp at last stopped coming.

According to Julio, from 10 to 15 tons of shrimp can be taken in a night. This night's catch would be in a mainland plant by noon, to be quick-frozen for United States markets, or canned or dried for Mexican tables. At the end of a good four-month season, the share for each man in Mexcaltitán's cooperative association exceeds \$500.

#### Twenty-four Cents Buys a Lavish Meal

On the way home, Julio invited me to join him for breakfast. On an island along the main channel, a woman and her teen-age daughter had molded a clay stove and set up a table and benches beneath a thatched shelter. As the men returned from the fishing grounds, the two cooked for them.

When our turn at the table came, the bare-foot daughter served us first a salad of fresh shrimp, chilies, and onions, with vinegar sauce. A plate of whole smoked fish followed. Steaming tamales of fresh hand-ground corn meal, filled with chopped shrimp, rolled in coconut leaves and cooked, capped the workman's breakfast. Delicious. The cost—24 cents. I suspect the ladies lost money on me; I gobbled tamales as if I had dipped nets all night.

I left Mexcaltitán soon afterward, but returned once more in January to witness life in the dry season. Shrimp fishing had ended and the men worked on their houses, repaired traps and canoes, or commuted to seasonal

jobs. Farming of community property on the mainland has become a secondary source of income for Mexcaltitán; several villagers own tractors. Even here, however, water rules their lives. This year rare and disastrous winter floods washed out their crops.

On my way homeward I stopped in Mexico City to visit Dr. Jiménez-Moreno, Director of the Department of Historical Research in the National Institute of Anthropology and History. He believes that Mexcaltitán may indeed be the site of the lost Aztlán.

#### Future Maps May Celebrate Mexcaltitán

"Save for size and grandeur," Dr. Jiménez-Moreno said, "there are great similarities between Mexcaltitán and that triumph of Aztec culture now known as Mexico City. Listen to the description by Bernal Díaz del Castillo, Cortés's historian, when the Spaniards reached Mexico City. Remember, the city then stood in the middle of Lake Texcoco."

Opening a heavy volume, he read:

"Gazing on such wonderful sights, we did not know what to say, or whether what appeared before us was real, for on one side, on the land, there were great cities, and in the lake ever so many more, and the lake itself was crowded with canoes, and in the Causeway were many bridges at intervals, and in front of us stood the great City of Mexico. . . ."

As Dr. Jiménez-Moreno read, I could visualize a much larger Mexcaltitán—a vast lake-bound community superbly situated for defense, whose people relied on the dugout canoe for transportation. Early visitors to the island had reached it as I had reached Mexcaltitán, as passengers of someone perhaps much like Julio. Like Julio, too, these people had been capable of all the work there was to be done, except that the work was far grander, including the creation of magnificent masonry temples and pyramids interspersed with broad plazas and markets.

At length, Dr. Jiménez-Moreno closed the volume and looked up.

"We have no proof that our island village inspired all this," he said. "But it may be that somewhere beneath the foundations of Mexcaltitán, the answers lie."

If the day ever comes when they are found, Julio's village will be on all the maps.

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On the last page of the April *GEOGRAPHIC* the unfortunate omission of the word "alone" resulted in a misstatement of fact. The picture caption should have said that Charles A. Lindbergh was "first to fly the Atlantic alone."—EDITOR

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COVER: Favorite sport of children the world over, leap-frog delights Berber girls of a remote village in Morocco's High Atlas (pages 866-7).

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## War against fire, deadly foe of our forests

**A**FTER WEEKS WITHOUT RAIN, woods become tinder dry. Then lightning—or carelessness—kindles a blaze that swiftly grows to a holocaust. By land and air an army of fire-fighters goes into action.

To record this awesome phenomenon, and man's newest ways of combating the

red destroyer, NATIONAL GEOGRAPHIC last summer assigned a crack team of writers and photographers. It proved to be the Nation's worst forest-fire season in decades, with more than 5,000 blazes in the great woods of the Northwest alone. Here in Willamette National Forest, Oregon, a press officer briefs camera-laden photographer Ted Mahieu (also shown at left, kicking dirt on spreading flames), writers Stuart E. Jones and Jay Johnston, and picture editor David Arnold. Next month's GEOGRAPHIC will bring you their vivid report.

Under the 18-month plan outlined on the form below, membership can start with the July issue, which will also include an exciting survey of Canada's developing North, a last look at Iwo Jima and the Bonin Islands before they revert to Japanese sovereignty, some startling revelations about hyenas, and a tour of Italy's beguiling lake country. Nominate your friends so they can share your enjoyment beginning with that issue of the magazine.



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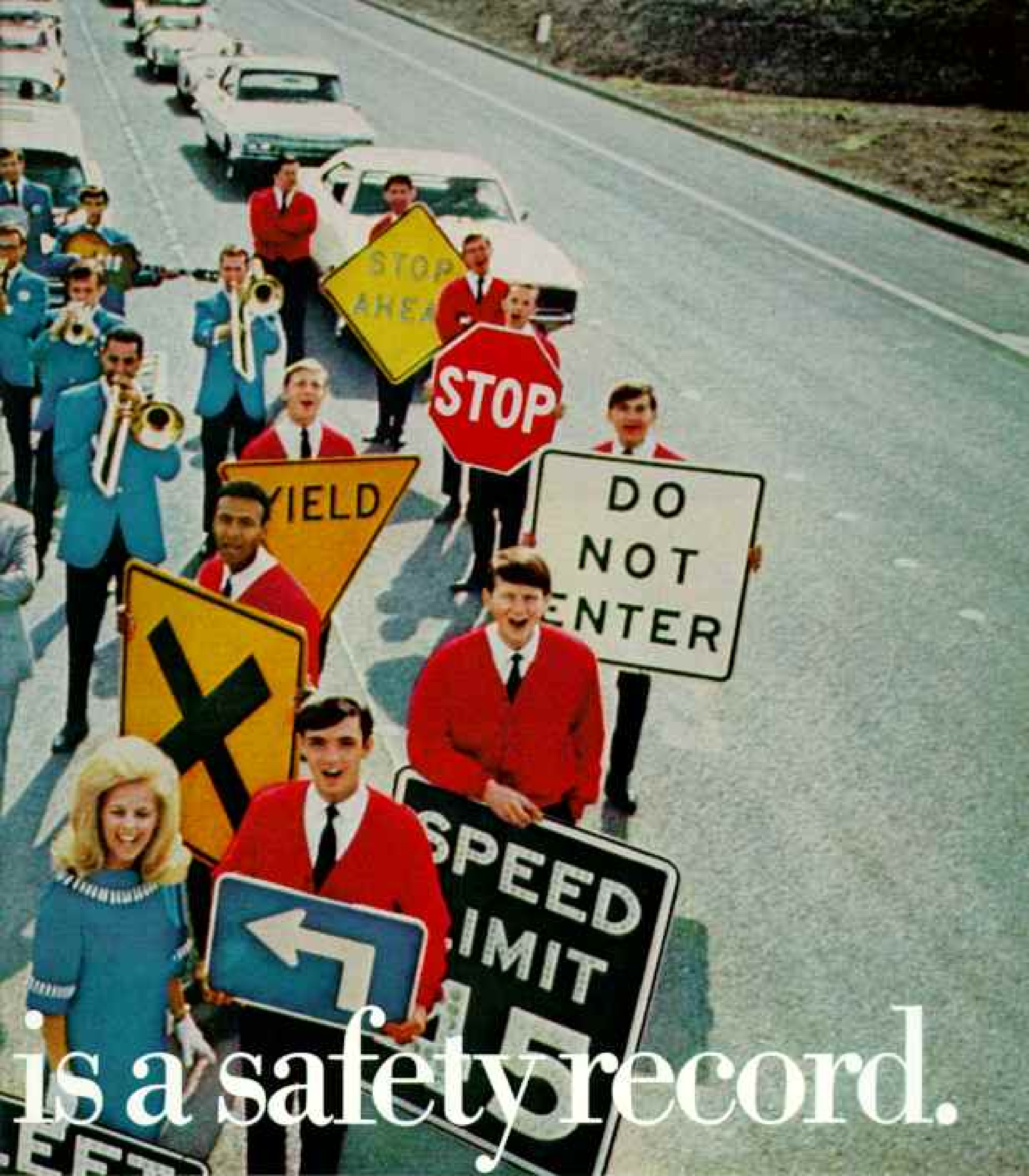
They're called "The Spurrflows." And they've cut more accidents than records. If you've never heard of them, it's because you haven't seen their musical safety show in a high school assembly program lately. It's called "Music for Modern Americans," and it carries a special message about safe driving.

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3,000,000 high school students have heard the Spurrflows spread the word that a driver's license is a responsibility—not a right. And that the highway is one place where an unsafe driver can drop out of school the hard way.

It's all part of Chrysler Corporation's Driver Education Program—a plan that has enabled Plymouth and Dodge dealers to place more than 33,000 cars





is a safety record.

in schools free of charge. Along with the teaching aids to help make driver education tick.

As America's fifth largest industrial corporation, we feel that our responsibility doesn't stop at the end of a production line. As music lovers, our favorite records are the ones about safe driving.

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Drop by your Kodak dealer's and see how little it takes these days to take good movies.

**Kodak Instamatic® movie cameras.  
From less than \$30.**

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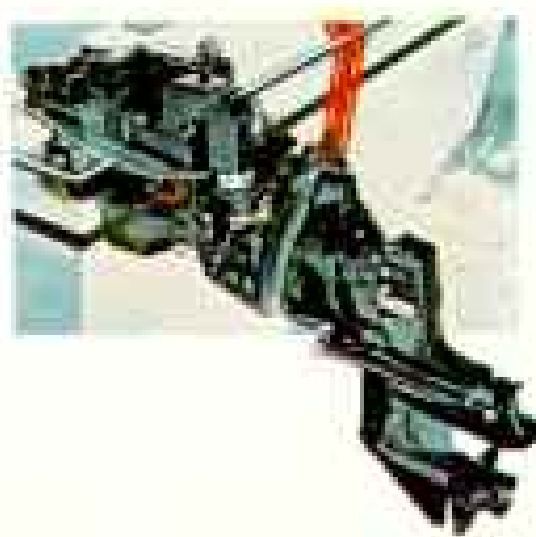


# New MerCruiser Power Trim:



## boating's only push-button water softener.

New Power Trim is another Kiekhaefer Mercury "first"—the first power system ever designed to let you adjust the angle of your stern drive from the driver's seat for the best performance at all speeds, as load and water conditions vary. Say you're loaded with gear, running bow down. You're getting wet. You simply push a dash button to trim your stern drive unit out, the bow rises, and you're riding dry again. Or you're taking a beating from rough water. You trim



the drive in and the water smooths out instantly. New MerCruiser Power Trim operates in any kind of water—from smooth shallows to offshore swells. And it works at all speeds—from docking to full bore. There's never been anything like it. Best of all, Power Trim is standard equipment on 5 new MerCruisers: 120, 160, 225, 250, 325 hp. See 'em at your MerCruiser dealer! MerCruiser: *The Payoff is Performance!*

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Such slicks may come from a wreck. Or more likely from a passing ship.

In 1964, the chances of it coming from an

oil tanker at sea went way down. And Jersey had a lot to do with it.

For years, ships have soiled the ocean whenever they cleaned their oil tanks. They simply pumped in seawater, sloshed it around and dumped a mixture of oil and water overboard. International law permitted this practice provided it was done fifty miles from shore. But Jersey preferred not to do it at all.





# to strike oil.

So Jersey's affiliate, Esso Research, went to work and developed a special chemical. This separates the oil from the water when a ship swills out its tanks. The water goes overboard. But the oil stays behind where it belongs—in the ship.

The tankers of all our affiliates now use this chemical. So do other tanker fleets. The oil that used to be pumped overboard from tankers has

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and, prospectively, many are fellow-employees. Those we hire will bring with them attitudes and skills produced by city life and city schools. Their qualities will help shape the quality of our service. And service is our product.

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# neither do we.

Increasingly engaged to help meet the problems of the cities, especially those concerning education and employability. In these areas our skills and other business resources may have extra value. We shall try to keep our deeds outrunning our words.



# Think of her as your mother.

She only wants what's best for you.  
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You know the game.

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You're tired. You're in a strange town.

And you need a place to stay.

So you drive around from motel to motel until you can't drive any more.

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### Mobil Travel Guide

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# How we keep you coming back for more.



You can't possibly take in all Canada's summer events in one trip. ☁ But we can recommend some highlights. One is Montréal's new permanent exhibition "Man and his World". It's more than just a sequel to last year's Expo '67, although a lot of Expo excitement has been retained. Plan to devote at least two or three days to this unique exhibition. Luckily, it runs all summer long, May 17th to October 14th. ☁ Another long-running attraction for summer visitors is Ontario's Stratford Shakespearean Festival, which opens June 17th and continues until October 12th. These two summer-long affairs can easily fit into your

schedule. But when it comes to the hundreds of other shorter events, you have some very tough decisions to make. For instance, if early July finds you at the Calgary Stampede, it's a good guess you'll miss the Scottish Games at Antigonish, Nova Scotia, in mid-July. Pity, but you see Calgary and Antigonish are 3,136 miles apart. And if you're out in Vancouver for the Sea Festival, July 31st to August 3rd, you're going to have to pass up Newfoundland's Annual Regatta, the first week in August. And that's a shame. ☁ It's this nagging feeling they haven't seen *everything* that bothers our departing guests and brings them back, year after year, as predictably as a yo-yo. Insidious, isn't it?



## Canada



Canadian Government Travel Bureau, 0021-05-8  
Ottawa, Canada.

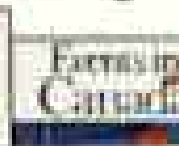
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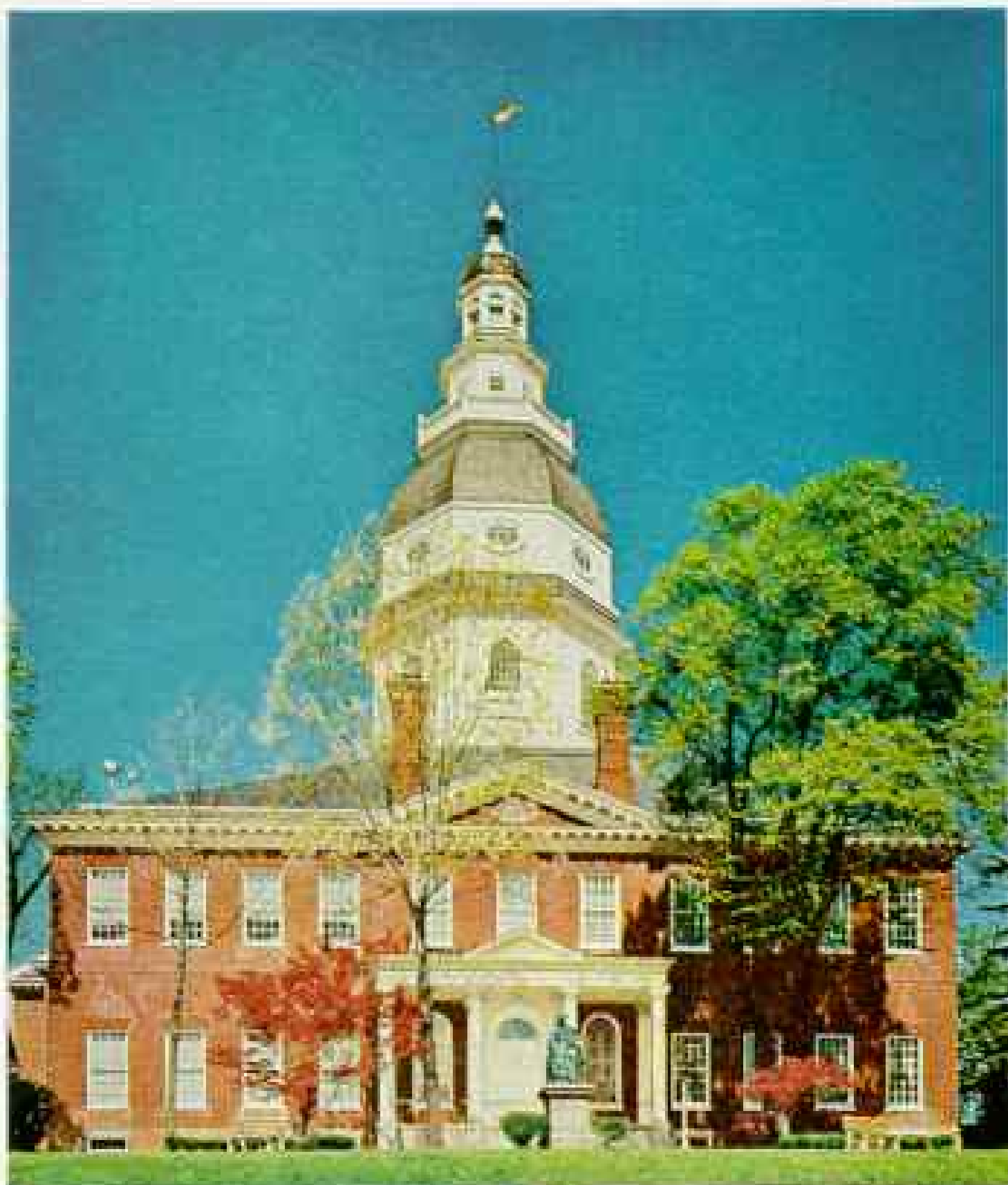
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The Continental Congress sat in that building. It was the Nation's Capitol for a while. Today it is still making history—as Maryland's bustling Capitol building.

No other American community has such a concentration of *original* historic structures, most of them still doing a good day's work. Among them Reynold's Tavern, built in 1737, houses a public library office. The home of Charles Carroll, signer of the Declaration of Independence, is now a church building. Even the oyster dredging fleet—the last workboat sailing vessels in the U.S.—still brings its catch to the harbor.

Time and events nearly erased these symbols of our heritage. But a citizens' group—Historic Annapolis, Inc.—fought to save them. Forward-thinking Mayor Roger Moyer gave his support because he foresaw economic benefits. The Maryland Historical Trust joined in. The State of Maryland created a Capitol City Commission. The National Trust for Historic Preservation rallied. The press rolled up its sleeves, and soon all Maryland echoed Secretary Udall's words, "Unless we understand and prize our past, we can't become a great and lasting civilization."

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*\*A slang golf term for a "second chance" shot to replace a poor first shot.*

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# Lufthansa



### **"I AM NOT A SCIENTIFIC MAN..."**

Mr. and Mrs. Henry Gardiner of Washington, D.C., inspect these first words of the first issue (1888) of the National Geographic Magazine in their custom-bound collection. It might take some time, industry, and money to assemble so beautiful and complete a collection yourself. Nevertheless, should you be less ambitious, you or your friends can still start receiving the benefits of National Geographic membership. On the page which the Gardiners hold, Mr. Hubbard, the Society's first President continued prophetically, "... our Society will not be confined to professional geographers, but will include that large number who, like myself, desire to promote special researches by others, and to diffuse the knowledge so gained, among men, so that we may all know more of the world in which we live."

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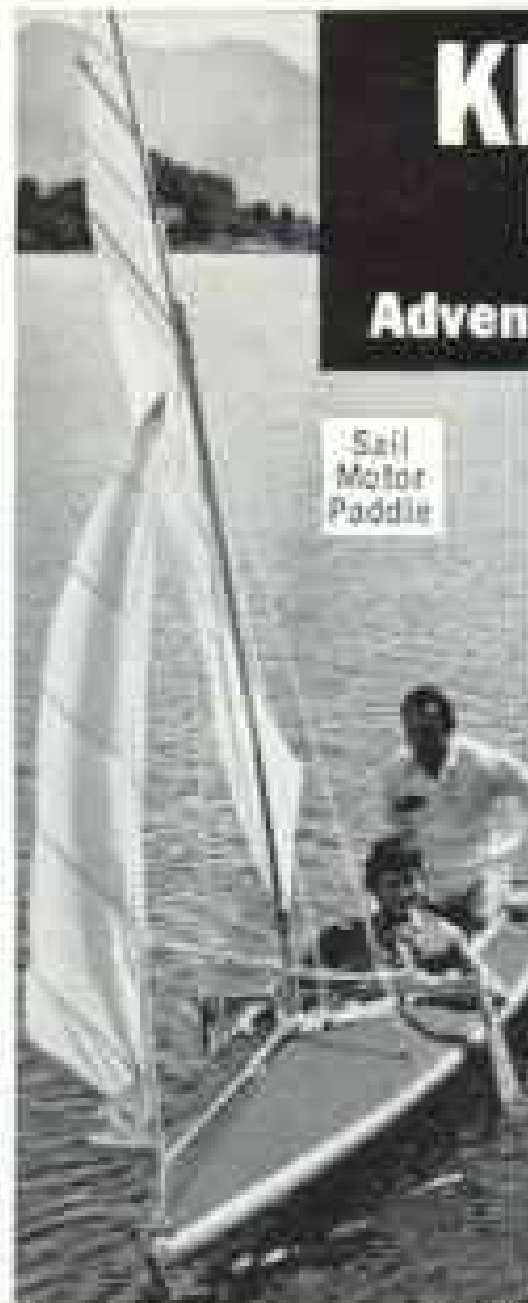
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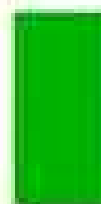
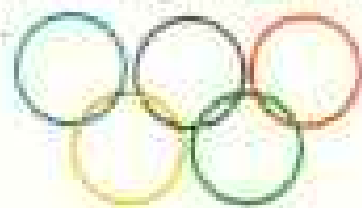
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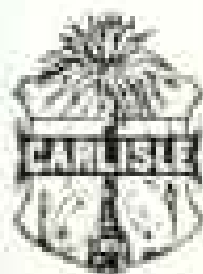
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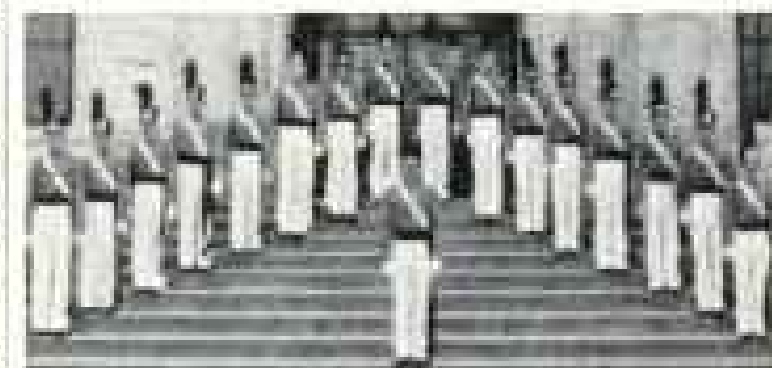
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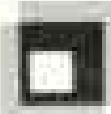


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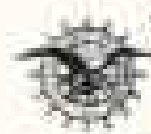


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