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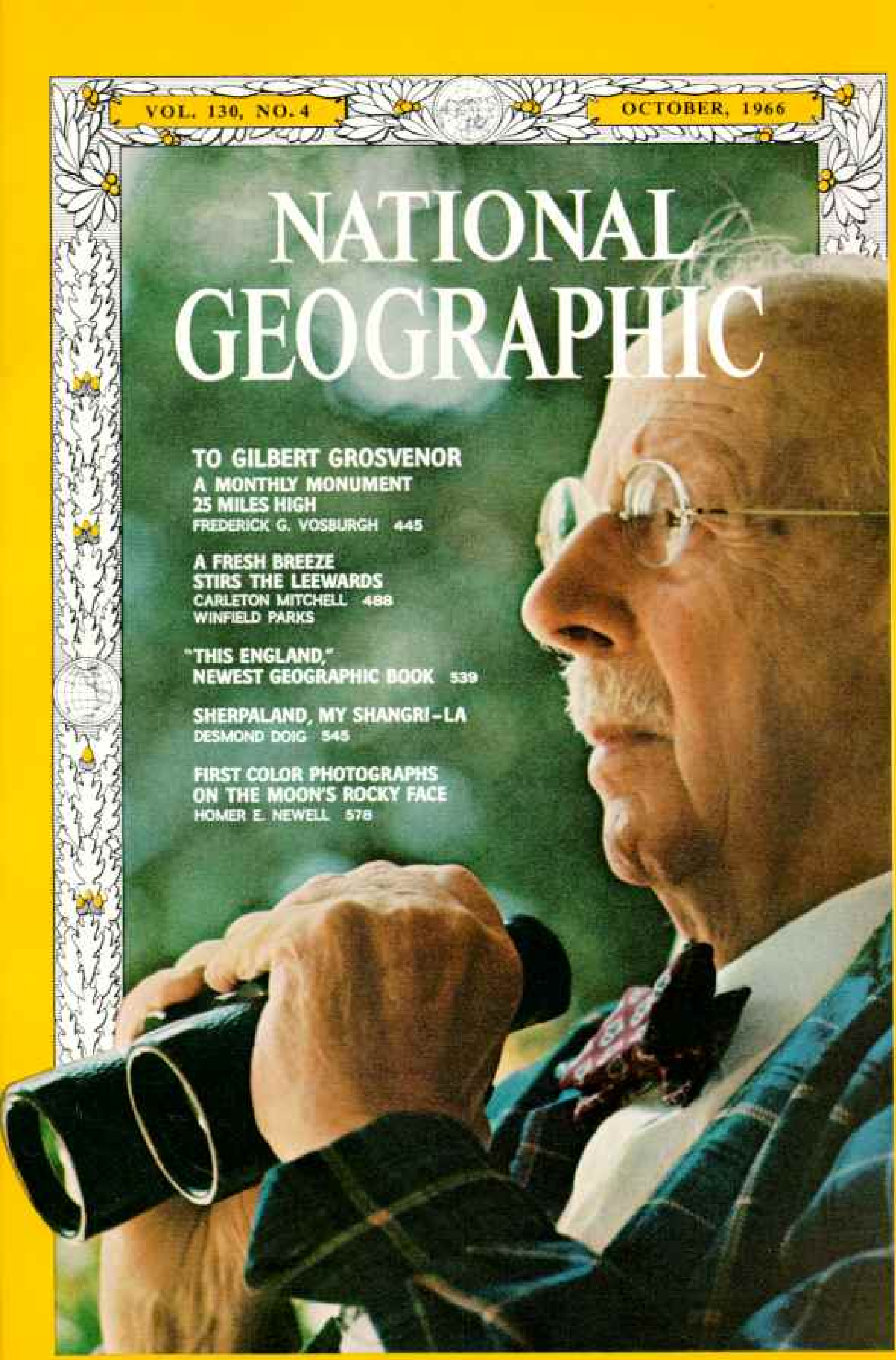
NATIONAL GEOGRAPHIC



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

NATIONAL GEOGRAPHIC SOCIETY

WASHINGTON, D. C.

Organized "for the increase and diffusion of geographic knowledge"

GILBERT HOVEY GROSVENOR
President, 1920–1954; Editor, 1899–1954
Chairman of the Board, 1954–1966

The National Geographic Society is chartered in Washington, D. C., in accordance with the laws of the United States, as a nonprofit scientific and educational organization for increasing and diffusing geographic knowledge and promoting research and exploration.

Since 1890 the Society has supported more than 350 explorations and research projects, adding immeasurably to man's knowledge of earth, sea, and sky. It diffuses this knowledge through its monthly journal, NATIONAL GEOGRAPHIC; more than 25 million maps distributed each year; its books, globes, and atlases; 30 School Bulletins a year in color; information services to press, radio, and television; technical monographs; timely exhibits from around the world in Explorers Hall; and now a nationwide series of programs on television.

Articles and photographs of travel, natural history, and expeditions to far places are desired. For material used, generous remuneration is made.

COVER: Interest unflagging in his 98th year, Gilbert Grosvenor watches for his beloved birds (page 445).

NATIONAL GEOGRAPHIC MAGAZINE

POLAROID

OK, decision-maker. Decide.

This one's a toughie.

Whether you pick the economy model of the Polaroid Color Pack Camera or the deluxe job on the right, you're going to get a whole lot of camera for the money.

The under-$60 one will give you big, beautiful color prints in 60 seconds, black and white in 15. Which is what it's all about, right?

It has the same electric eye as the most expensive model. Uses the same film. Loads just as fast. Yet Polaroid has figured out a way to bring it out at this low price.

What will your something-under-$150 buy? The finest automatic camera Polaroid has ever produced. It makes black and white pictures indoors without flash, automatic time exposures up to 10 seconds. It allows you to do beautiful closeup work with the special closeup and portrait attachments. It has a sharp triplet lens, two exposure ranges for color, two for black and white, superimposed image, coupled rangefinder. Brushed chrome finish, leather strap and a flashgun thrown in.

We told you it was tough, didn't we?

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The General System is strongest where the growth is greatest.

And wherever it operates, it provides the latest in modern phone service. On General's list of future innovations for its customers: the TOUCH-CALLING™ push-button phone that's faster than dialing...and the new E-A-X electronic automatic exchange for improved service.

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We're 125,000 strong and dedicated to Total Communications.

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GENERAL TELEPHONE & ELECTRONICS

On the roof of the earth: a shrine

WHERE PRAYER FLAGS WAVE in ceaseless wind and the heart stops in awe at heaven-crowding peaks, Desmond Doig erects a Buddhist stupa in memory of his mother, who died in England half a world away. Thus Doig, a British citizen and an editor of the Calcutta *Statesman*, puts down another stake in Nepal —a land he regards as a second home. While helping to build a school, he seesaws with a friend (below). His loving look at Nepal's Sherpaland starts on page 545. Such vivid accounts open windows on the far away, the long ago, the yet to come. Let your friends peer through; nominate them for Society membership.

Uniquely Thunderbird
Uniquely '67

Elegant new two-door, historic first four-door

Better ideas for '67 make Thunderbird, more than ever, America's Personal Luxury Car:

The new four-door Thunderbird. Now two great doors open wide from center to ease you into America's most-imitated luxury car. The four-door Landau is the newest Thunderbird innovation, and it is quite likely the most elegant performance car now in production.

Tractable headlamps. Flick the light switch and silent hinges fold back the grille to reveal the Bird's beams.

Padded luxury interior trim, center arm rests, deep bucket seats, retractable front seat-belts, optional six-way power front seats.

Tilt-Away steering wheel: it moves over and up to ease you out of the driver's seat, and can be adjusted to nine different driving positions. Mannerly.

Riding comfort. New computer-tuned separate body-frame construction for greater strength, quiet, lower vibration levels; new, soft all-coil suspension system; longer wheelbase, wider tread.

Articulated windshield wipers of a new and unique design virtually eliminate unwiped areas, give you broader visibility in rain or snow.

Wrap-around sound. The Bird's optional stereo tape player gives you more than an hour of superb hi-fi music from four speakers, on click-in self-winding tape cartridges.

The Bird flies with its impressive standard 390-cubic-inch V-8 engine, SelectShift Cruise-O-Matic transmission (use it as an automatic or play through the gears). And this year you can choose one of the most authoritative engines Ford makes, the 428-cubic-inch V-8, for your Thunderbird.

Thunderbird's convenience control panel option is your own private data-control center. It flashes red lights to remind you if a door is ajar, to fasten seat-belts, or if fuel is low. A four-way Emergency Flasher sets exterior lights blinking should you have to stop by the roadside at night. Doors lock automatically at 8 m.p.h.

Thunderbird '67
Unique In All The World.

Thunderbird for 1967 has the Ford Motor Company's safety features as standard equipment.

What's on any Bermuda menu? The sea and sky for appetizers.

If soft sea air and ocean swims make you hungry, expect to be ravenous in Bermuda. For water's all around you—a whole ocean of it. Mild in temperature, kaleidoscopic in colour. And what beaches!

Sailor's delight: Salt Kettle inlet.

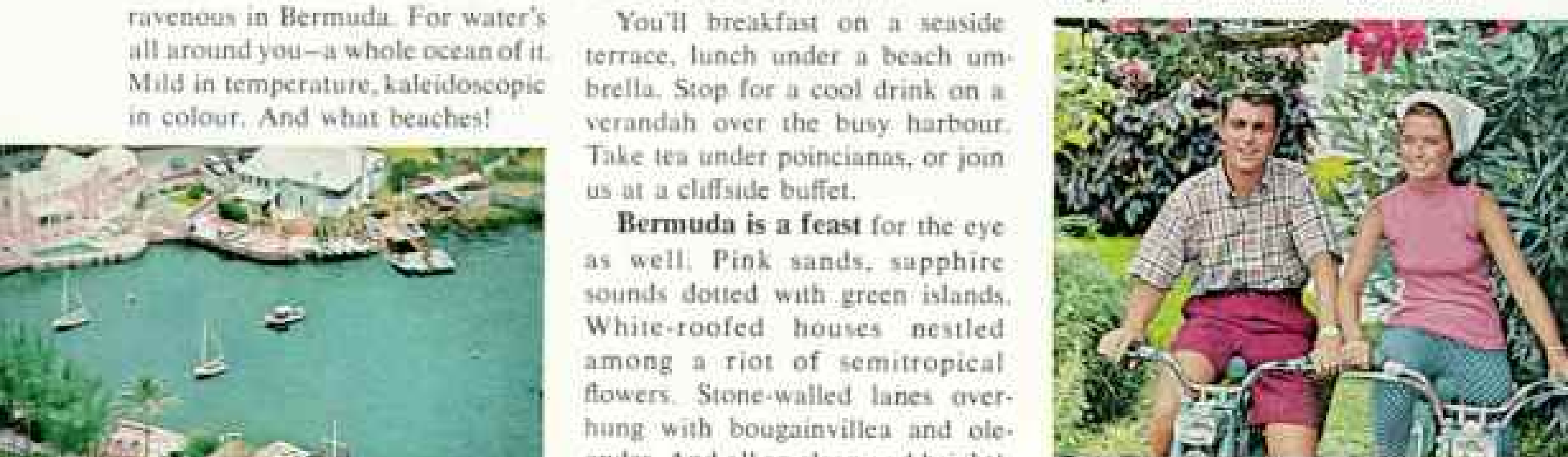
Swimming, sailing, skin diving, water skiing, fishing, cycling and golf are favourite ways to work up an oceanic appetite.

Fortunately for the hungry vacationer, Bermuda will feed him—and handsomely, too. On fresh-caught snapper and rockfish and Bermuda lobster (September-April) and imported delectables.

You'll breakfast on a seaside terrace, lunch under a beach umbrella. Stop for a cool drink on a verandah over the busy harbour. Take tea under poincianas, or join us at a cliffside buffet.

Bermuda is a feast for the eye as well. Pink sands, sapphire sounds dotted with green islands. White-roofed houses nestled among a riot of semitropical flowers. Stone-walled lanes overhung with bougainvillea and oleander. And all so clean and bright!

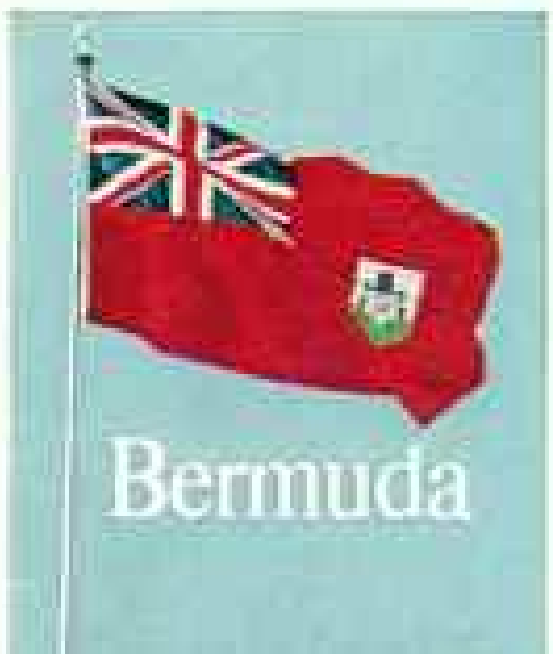
For dinner music, you can have anything from waltz to watusi, with calypso the favourite local beat.



Sight-seeing down flowery lanes.

Other Bermuda sounds: the rustle of leaves, the breaking surf, as velvet night surrounds you.

Plan an appetizing Bermuda holiday now. Ask your U.S. or Canadian travel agent about the accommodation that will please you best. Or write Bermuda, 610 Fifth Ave., New York 10020 • 6 N. Michigan Ave., Chicago 60602.



*"BEST RECORD OF THE YEAR"

Awarded To Herb Alpert & The Tijuana Brass "A Taste of Honey"

The coveted GRAMMY AWARD

The highest honor bestowed by the Recording Industry went this year to the brilliant recording by the versatile Herb Alpert.

"A Taste of Honey" is just one of 50 vibrant selections included in The Longines Symphonette's fantastic five-record Treasury. The Treasury of "Herb Alpert and The Tijuana Brass"

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HERB ALPERT* and the TIJUANA BRASS

plus selections from THE BAJA MARIMBA BAND

in a sparkling five-record Treasury of songs that have taken the nation by storm! Includes "A Taste Of Honey", the song that won the coveted Grammy Award for "Best Record of the Year"!

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LISTEN FREE FOR 10 DAYS to the most exciting and satisfying melody to come to America in four decades!

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FREE BONUS: TELEVISION'S NEW FAVORITES, THE BAJA MARIMBA BAND! The exciting Herb Alpert Treasury includes 12 performances of THE BAJA MARIMBA BAND that you've seen and enjoyed on major television spectaculars!

Yes, 60 great selections in a single five-record Treasury, produced with the care and hand-inspection that have made "Living Sound" a trademark meaning the finest in modern recording technique!

FREE FOR 10 DAYS—SAVE UP TO 50%!

You'd expect to pay as much as 89¢ each for The Tijuana Brass on ordinary 45 RPM records, but this great Treasury enables you to own their award-winning performances for only 24¢ each. Best of all, listen FREE for 10 days, return The Herb Alpert Treasury and owe nothing . . . or send just $5 a month until $13.88 (plus postage-handling) is paid! LIMITED TIME OFFER—please act at once. Mail the coupon to enjoy HERB ALPERT and the TIJUANA BRASS Free for 10 days!

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$5 ONLY A MONTH

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No extra charge for deluxe presentation case!

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Never On Sunday	Desafinado	Let It Be Me
Lemon Tree	Lollipops And Roses	All My Loving
More	Whipped Cream	The Great Mandolete
Tangerine	Green Leaves Of Summer	Struttin' With Maria
Limbo Rock	Milord	America
The Lonely Bull	The Girl From Ipanema	

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PLUS 12 songs by The Baja Marimba Band including Moonglow, Red Roses For A Blue Lady and ten more.

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First National City travelers checks come from the *leader* in world-wide banking, and have been in use *over* 60 years. They are known and accepted in more than a *million* shops, hotels, restaurants, air terminals, etc., the world over.

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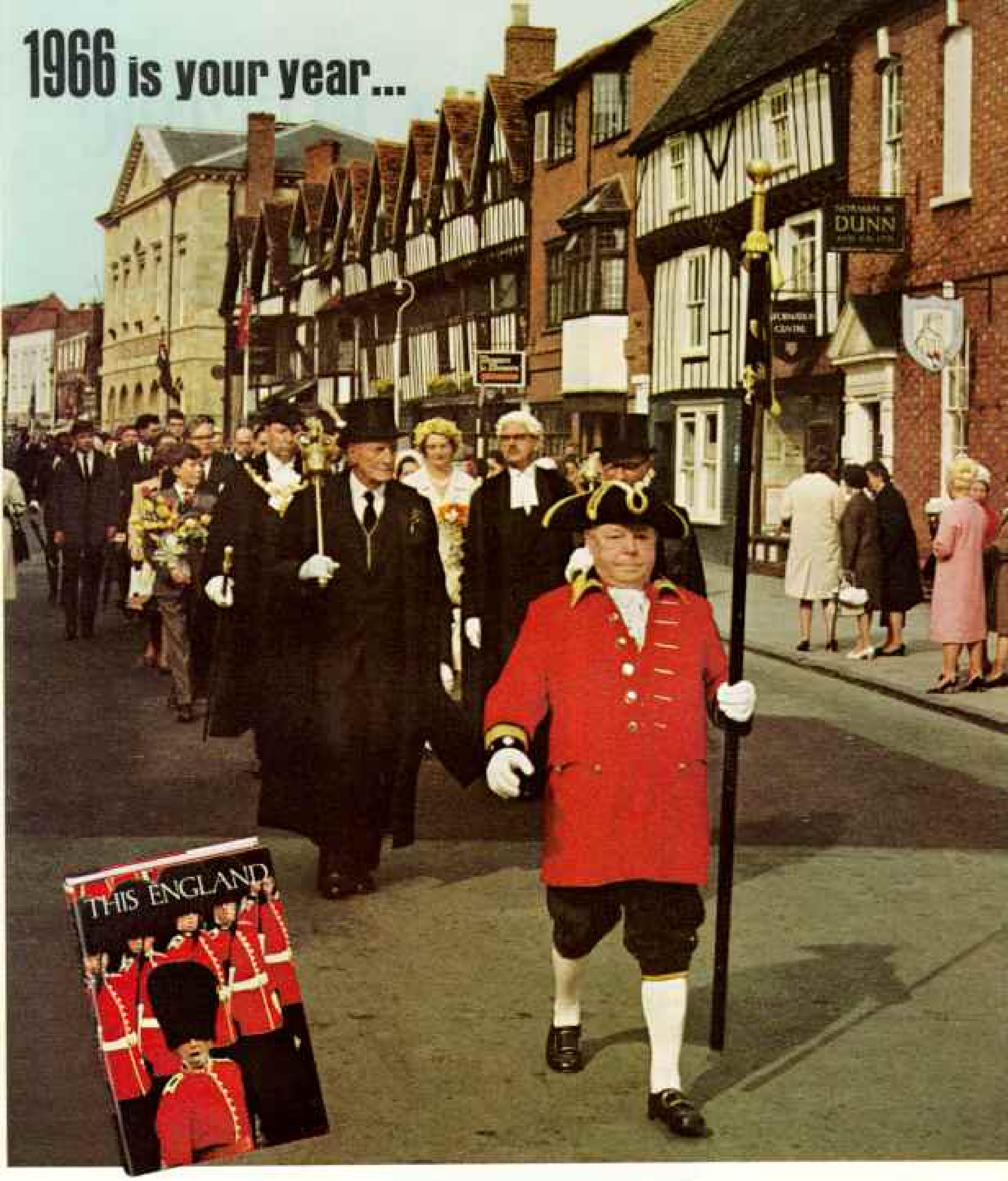

1966 is the year *your* family can visit THIS ENGLAND—through the color-bright pages of a new National Geographic volume. These 440 pages packed with lucid, lively text and dazzling photographs take you from Land's End to Northumberland's rolling moors. You'll cruise the Channel ports . . . roam Shakespeare's countryside . . . visit London. The 657 illustrations . . . 620 of them in full color . . . show you more of England than many Englishmen ever see!

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Mercury unleashes **Cougar**...*untamed elegance!*

Untamed elegance! That's Cougar—an entirely new kind of road animal from Mercury. With a European flair to its styling. With standard features found until now only in expensive cars. Examples: concealed headlamps, *standard!* Sequential rear turn signals, *standard!* A 289 cu. in. V-8, *standard!* Bucket seats, *standard!* Walnut-grained steering wheel, *standard!* Stick shift, full-width rear seat, *standard!* The newest safety features, including dual braking system, all *standard!* Above all, Cougar is a lithe, contemporary car, with the kind of excitement that runs through the entire '67 Mercury line. The price? People at previews have overguessed it by $1,000! We believe Cougar is the best equipped luxury sports car you can buy for the money. See your Mercury dealer. See if you don't agree.

Mercury

Cougar excitement runs through the whole Mercury line!

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When you buy Color TV . . . why not get the best? See the complete selection of Zenith Handcrafted Color TV at your Zenith dealer's now. At Zenith . . . *the quality goes in before the name goes on*®.

Featured above, the Whitney, Danish Modern styling, Model 25X4541W. Lower left, the Somme, French Provincial styling, Model 25X4529H.

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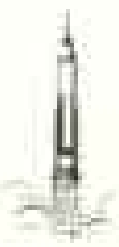

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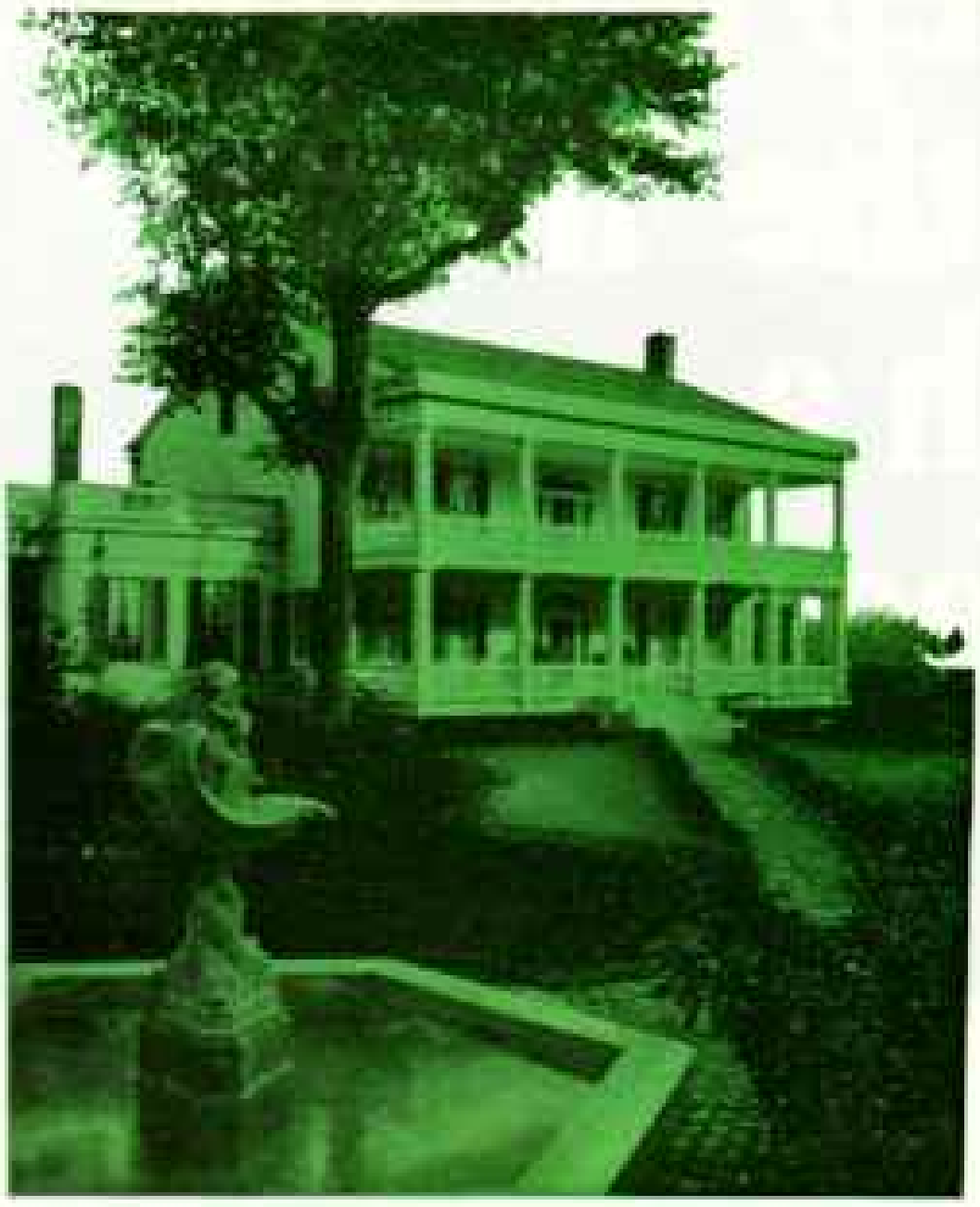

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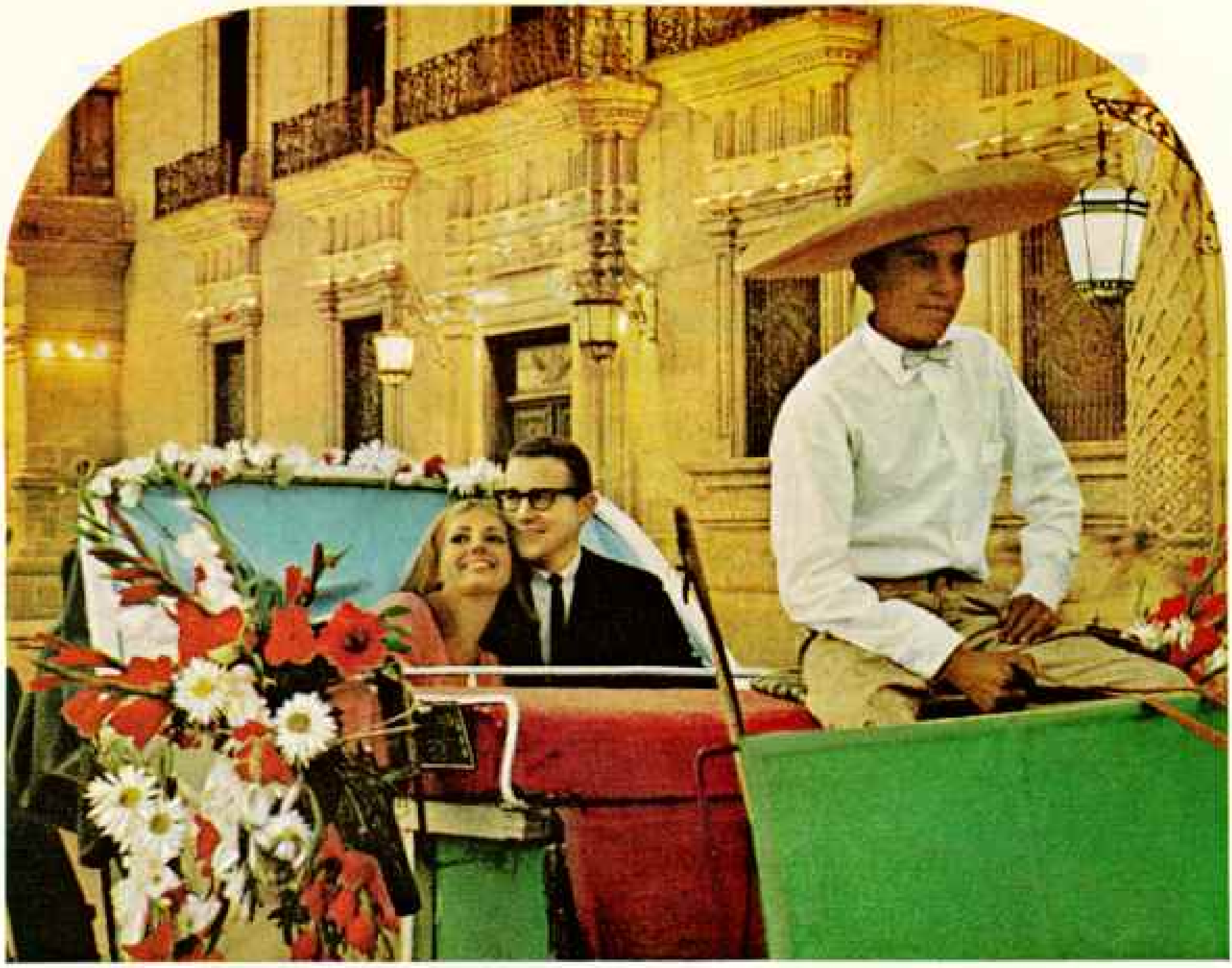

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October, 1966

NATIONAL GEOGRAPHIC

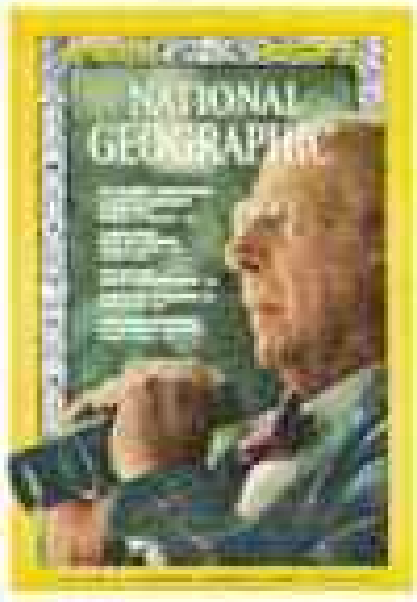
To Gilbert Grosvenor

A MONTHLY MONUMENT 25 MILES HIGH

By FREDERICK G. VOSBURGH

Vice President and Associate Editor

AND THE STAFF OF THE NATIONAL GEOGRAPHIC SOCIETY



FROM THE Golden Horn to the Potomac, from the year before the telephone to the year of testing the Apollo moonship, from a little group of scientists and scholars to a worldwide National Geographic Society of five million members—the long, busy life of Gilbert Hovey Grosvenor spanned all this.

For 67 years he served the Society, first as Editor, then as President-Editor, and finally as Chairman of the Board of Trustees. For 55 years he edited the NATIONAL GEOGRAPHIC—from 1899 till 1954—and he gave us wise counsel till the day of his death.

Because many members throughout the earth have sent their sympathy at his passing and shown keen interest in his career, and because without him our global Society and magazine would not have existed, this issue is dedicated to the ever-young man who saw a vision and made it real.

October seems especially fitting, because that was the month of his birth and marriage, and of the birth of the magazine itself, in October, 1888.

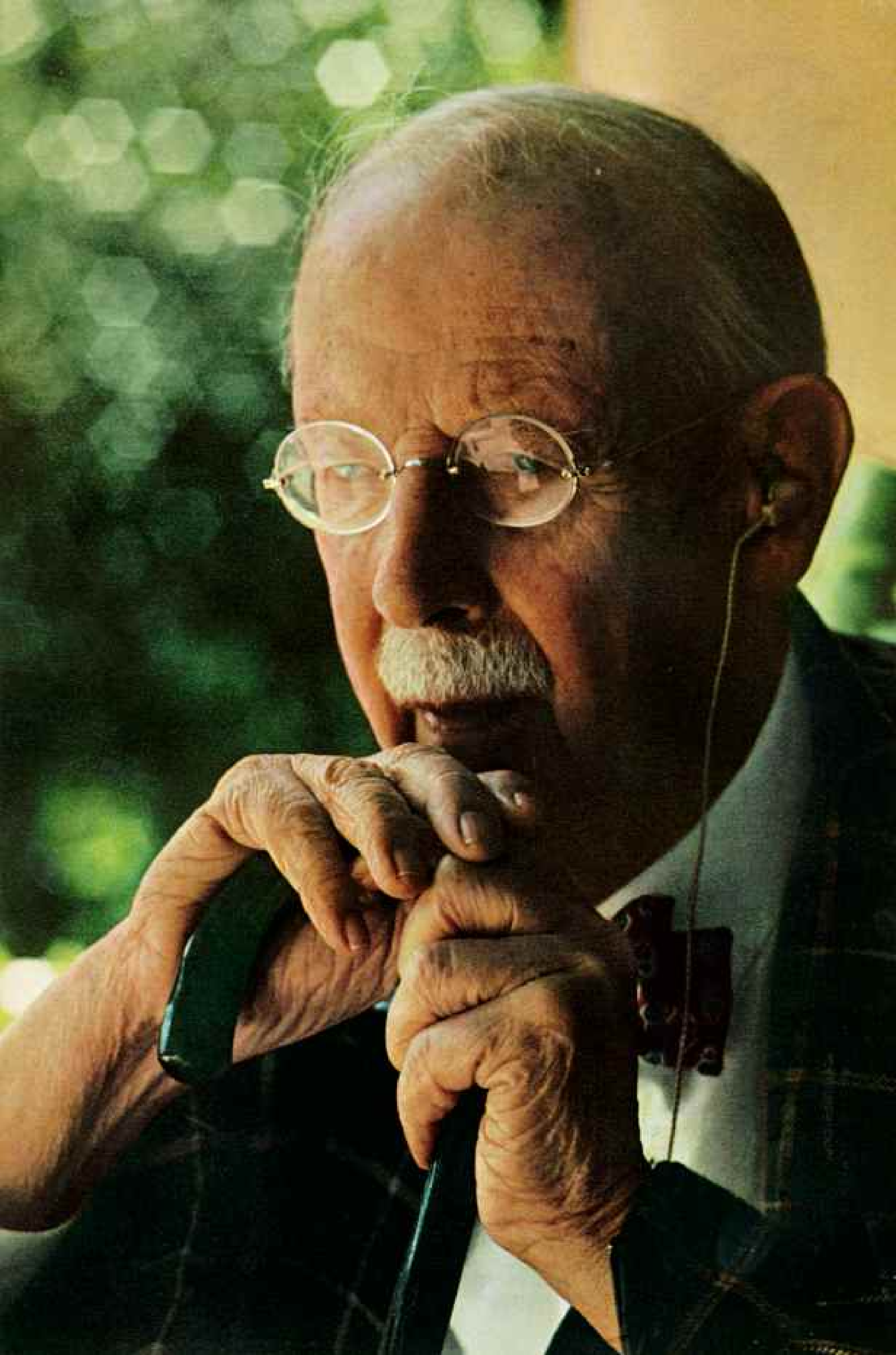
By the calendar Dr. Gilbert Grosvenor was 90 when he failed to awake from a nap last February 4 in the old family summer home in Nova Scotia, where he had been marooned by increasing frailty since the previous autumn. But to us, his associates, he still seemed as young in heart and mind as any member of the staff. He always kept the sense of wonder that makes men young whatever their years.

"They Lose All the Fun"

Reminiscing a year before, he recalled bucking a storm in a Pan American Airways Clipper while he and Mrs. Grosvenor were making the first passenger flight of a husband and wife across the Pacific, in 1937. Seeking less turbulent air, the pilot descended to about 200 feet above the waves.

"Today," a young man ventured, "the pilot would probably climb *over* the storm."

"They lose all the fun nowadays," declared



Dr. Grosvenor, emphatic as ever at 89. "You can't see anything."

All his life he wanted to see everything—and he shared it with the world through the GEOGRAPHIC. "Extr'ordinary," he would say as he peered at a picture. (Like his son Melville, our President-Editor since 1957, he enjoyed nothing so much as poring over a good set of color transparencies, especially the latest he had made himself.) "Extr'ordinary." He was an extr'ordinary editor, the first to see the value of photographs and publish them on a lavish scale.

Those of us who spent our professional lives in his shadow know that we were privileged to learn and grow in the presence of genius. He was a brilliant scholar, a Phi Beta Kappa graduate of Amherst. But as an editor he was entirely self-taught. Like his magazine, he was unique, though his son has many of his qualities, including the all-important capacity for wonder, enthusiasm, excitement. Little children have it—and great editors.

Such people never grow old in spirit. They enjoy to the full the world God made. My mother expressed it a little wistfully as she neared the end in her 80's and said, "I'd like to stay and see how it all comes out." Dr. Grosvenor at 90 still closely followed events in the changing world around him, leafed through the latest GEOGRAPHIC with professionally appraising eyes, and looked forward to seeing his beloved birds north-flying in another spring. It must make the Almighty especially happy when people appreciate His world so much.

From Backpack to 25-mile Stack

A born teacher like his father, Gilbert Grosvenor turned from teaching boys in a prep school in New Jersey to editing the GEOGRAPHIC as its sole paid employee at 23. As builder of the Society and its magazine, he became a teacher to millions. When he died he left a towering monument: the world's largest educational society, a great force for knowledge and international understanding. Its magazine had grown from a few hundred copies—he recalled carrying them to the post office on his back—to more than 5,000,000 a month, enough for a stack 25 miles tall.

Like Prince Henry the Navigator in an earlier Age of Discovery, he inspired and encouraged the explorers of his era: Peary, Byrd, Amundsen, Shackleton, Stefansson. Gilbert Grosvenor himself did not go to the North Pole—until much later, at age 77—but he and the Society backed the men who first did: Peary by dogsled in 1909, Byrd by airplane in 1926.

In a "Dear Bert" note scribbled on the Society's 1932 map of Antarctica, Rear Adm. Richard E. Byrd conveyed his "affectionate regards and appreciation and congratulations for producing this splendid map" and added: "P.S. I think I'll try to clear up some of these blank spaces" (pages 478-9). He did. After flying over both Poles and mapping much of the Antarctic Continent by air, he wrote: "The officers and staff of the Society have given me all-out support in every major venture of my exploring career."

Many Map Features Bear His Name

Explorers and scientists expressed appreciation by naming their discoveries for the Society's forward-looking leader: Grosvenor Mountains and Grosvenor Trail in Antarctica (by Admiral Byrd); Grosvenor Island in the Canadian Arctic (by Vilhjalmur Stefansson); Lake Grosvenor in Alaska (by Dr. Robert F. Griggs), and Mount Grosvenor, Alaska (by Lawrence Martin); Grosvenor Glacier in Peru (by Hiram Bingham); Mount Grosvenor in China (by Joseph F. Rock); Grosvenorfjellet, a mountain in Spitsbergen (by the British Spitsbergen Expedition of 1952); and Grosvenor Arch (pages 450-51) in Kane County, Utah (by Jack Breed).

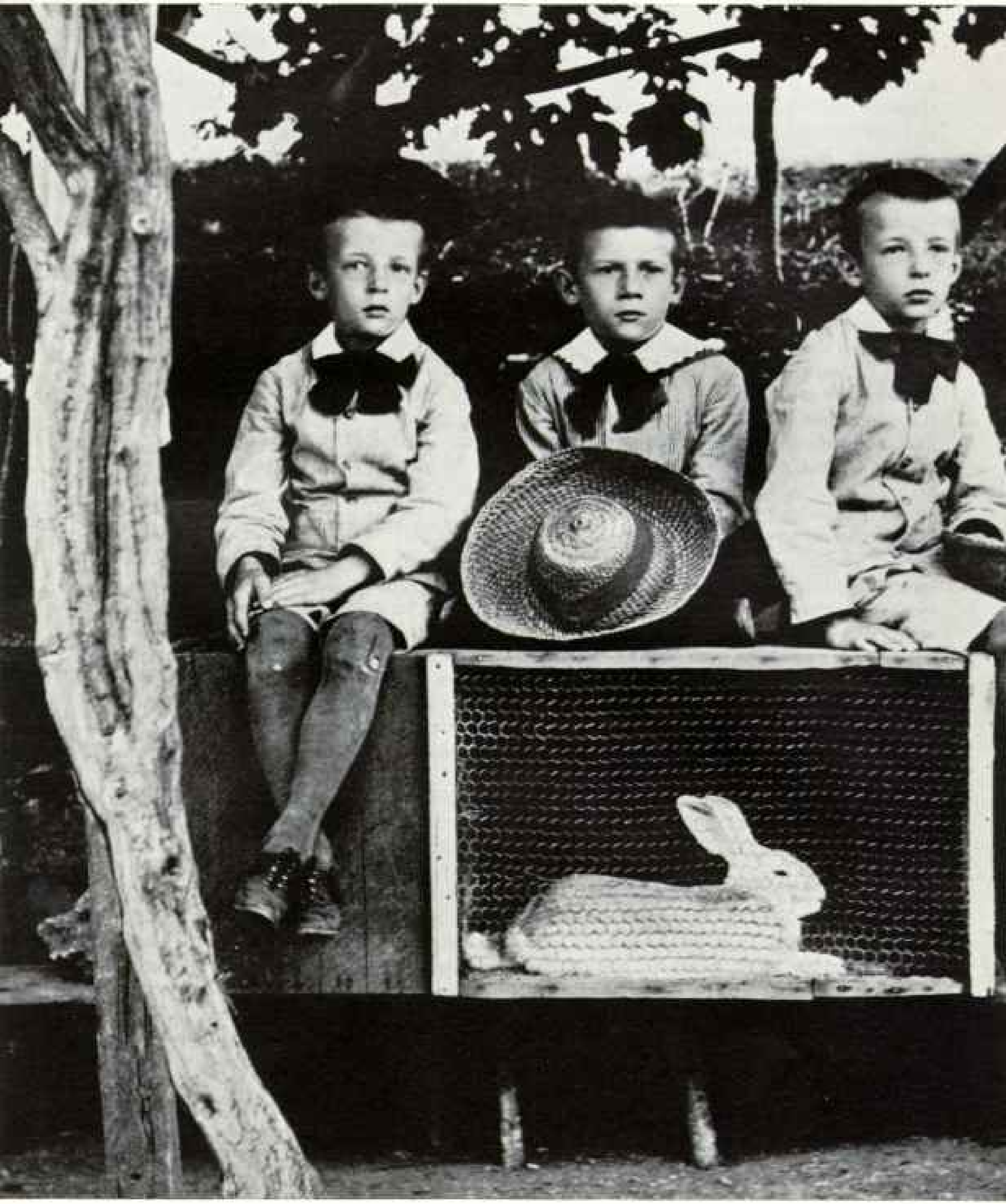
An honor that pleased him especially because of his lifelong interest in education and civic affairs was the naming of Grosvenor Elementary School, on Grosvenor Lane, near his Bethesda, Maryland, home.

His great interest in wildlife, particularly birds, was recognized by the naming of two species for him: a thrush from Nepal by Dr. S. Dillon Ripley, now Secretary of the Smithsonian Institution, and a thicket warbler from New Britain, by the late Dr. E. Thomas Gilliard of the American Museum of Natural History. A shell from Greenland, a fish from

GILBERT HOVEY GROSVENOR, Litt.D., LL.D., Sc.D., 1875-1966

Acclaimed as "Mr. Geography," he discovered the earth anew—for himself and for millions around the globe. He charted the dynamic course that the National Geographic Society and its MAGAZINE followed for more than half a century. And in so doing, he forged an instrument for world education and understanding unique in this or any age.

LAST COLOR PORTRAIT OF DR. GROSVENOR (ENTACHROMES OPPOSITE AND COVER) TAKEN IN HIS 90TH YEAR AT CORAL GABLES, FLORIDA, BY NATIONAL GEOGRAPHIC PHOTOGRAPHER THOMAS NEBBIA © N.G.S.



"I never went to school until I was ten . . . school doesn't make the boy entirely; it's the kind of oversight and care he gets at home," Dr. Grosvenor once wrote. Born in Constantinople, Turkey, Gilbert and his identical twin Edwin Prescott, here flanking their older brother Asa Waters, received that special "oversight and care." Their devoted mother, Lilian Hovey Waters Grosvenor, and father, Dr. Edwin A. Grosvenor, professor of history at Robert College, tutored the youngsters. To their home came guests of many races and creeds; from it went family expeditions to places where the father knew the story in every stone. In 1891 the Grosvenors moved to Massachusetts, where the twins were graduated with highest honors from Amherst College. Taking charge of the NATIONAL GEOGRAPHIC MAGAZINE at age 23, Gilbert recognized an advantage: "my long and close association with my father's work," a reference to working with him on his two-volume book, *Constantinople*.

GILBERT H. GROSVENOR COLLECTION © N.G.S.

Peru, and a drug from China likewise bear Gilbert Grosvenor's name.

The Grosvenor Medal, established by the National Geographic Society's Board of Trustees in 1949 "for outstanding service to geography" (page 481), has been awarded only twice—to Gilbert Grosvenor and to the late Dr. John Oliver La Gorce, his "colleague of the golden years" and successor as President and Editor (1954-1957).

As editor and traveler, conservationist, backer of trail blazers, adviser and supporter of scientists, Dr. Gilbert Grosvenor was one of the most influential men of his day. For more than a generation, as the Society's President and Editor, he presided over a Board of Trustees that included some of the most eminent men in the Nation. He knew all the Presidents of the United States in this century, some of them intimately.

"Played a Vital Role in America's Coming of Age"

In the evening of the day Dr. Grosvenor died, President Lyndon B. Johnson and the First Lady telephoned from the White House to his son in Nova Scotia to condole with him and his sisters and comfort them. Next day the President sent this wire:

"As the Nation grieves the loss of your father, inquiring minds everywhere grieve the loss of a leader. Through words and pictures and through his own unswerving dedication, Gilbert Grosvenor opened the wonders of the world we live in to three generations of Americans. No mountain was too high, no sea too deep, no climate too forbidding for the teams of the National Geographic Society.

"If a great national power has an obligation to know and to understand the nature of the world around it, then it can truly be said that Gilbert Grosvenor played a vital role in America's coming of age.

"Mrs. Johnson and I send our deep condolences to you and your family."

Wired former President Dwight D. Eisenhower from Indio, California: "Terribly distressed to learn of the death of your distinguished father. The whole country will mourn his loss and as his long-time friend I am personally, deeply grieved. Mrs. Eisenhower joins me in sending you our deepest sympathy."

Yet Dr. Grosvenor was as courtly to the greenest employee as to a President. When he left us, what we remembered best were his delightfully formal courtesy and genuine thoughtfulness.

Recalled a recent newcomer to the staff: "He showed me through his offices as if it were an honor to *him* to have me there."

"He never climbed to the heights on top of little people," a long-time employee expressed it. "He took everybody with him."

Another recalled a time when a shy cub from New England was invited for a weekend with the Grosvenor family and guests at their winter home in Florida. White linen suits were in style then, and, on the advice of friends, he had brought one. But nothing had been said about white shoes, and when he went down to dinner he saw to his horror that of all the men present he alone was wearing black shoes. He had no others; there was nothing he could do in his embarrassment but try to lose himself among the guests.

In a few minutes Dr. Grosvenor quietly excused himself and disappeared upstairs, to return shortly. He was wearing black shoes.

"One day," remembered our Art Editor, "my office phone rang and I was asked to see Dr. Grosvenor. When I opened the door to his office about 30 seconds later, the Chief looked up in surprise and said: 'Mr. Poggenpohl, would you mind telling me exactly how my message was given to you by the telephone operator?'

"I was somewhat startled but replied, 'The operator said, "Would

you please step in to see Dr. Grosvenor.' "

"The Chief had a twinkle in his eye.

" 'But that isn't what I said. I shall have to talk to the telephone operator about that. I knew you were busy with fresh proofs this morning, and what I asked the operator to say was, "Please ask Mr. Poggenpohl to step in to see me *when he has a minute*." ' "

Steel Beneath the Velvet

In the magazine as in person, Gilbert Grosvenor had a gentleman's aversion to being unfair or unkind. "Only what is of a kindly nature," he wrote in laying down guiding principles in 1914. "Nothing of a partisan or controversial character."

But it was typical of this strong-minded editor that he reserved the right to decide what was controversial and what was not.

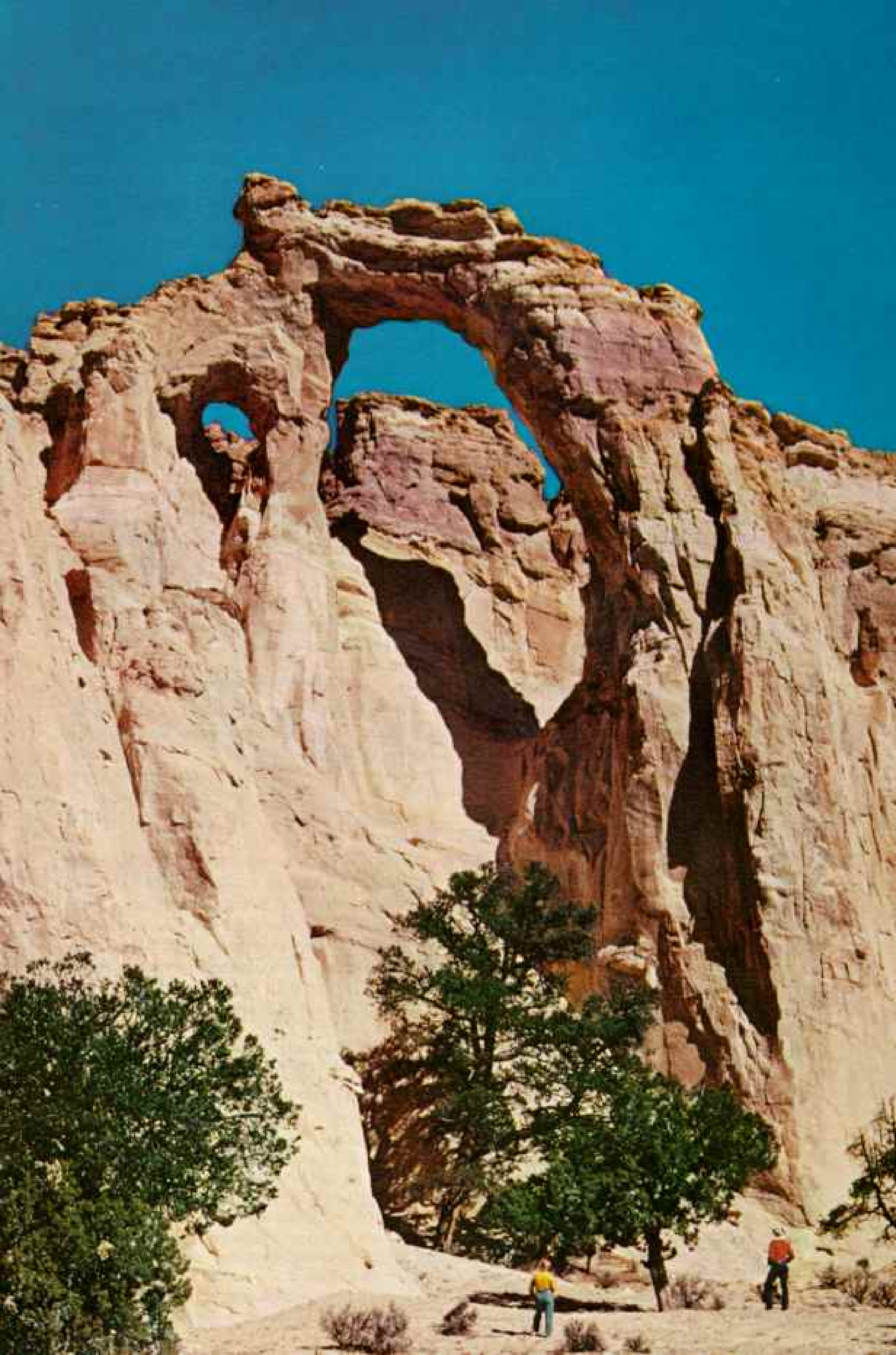
"Many subjects," he observed long afterward, "I have not regarded as controversial" —referring to such hotly debated issues as Peary's versus Cook's claims to discovery of the North Pole and Gen. Billy Mitchell's championship of the bombing airplane versus the battleship. To Dr. Grosvenor then, as to history later, there was no question that Peary and Mitchell were right.

This mild-seeming gentleman of courtly manners had the soul and heart of a fighter. Those who challenged his plans and principles struck steel beneath the velvet. At the outset he fought a major policy decision of his formidable father-in-law, Alexander Graham Bell, when the genius of the telephone, then President of the Society, decided that the current sensation in magazine editing, S. S. McClure in New York, knew more about what was best for the GEOGRAPHIC than young Gilbert Grosvenor.

Back steamed Gilbert, with his strongest ally, from Europe where they were honeymooning. His loyal ally and love of his life

To honor the man who did most "to foster an intense popular interest in geography of this country," naturalist-photographer Jack Breed in 1948 gave the name Grosvenor Arch to this 152-foot-high sandstone bridge in Utah. It is one of nine landmarks across the earth named for him (page 447).

"Our country is the treasure-house of nature's scenic jewels," wrote Gilbert Grosvenor in 1916. He led the Society and its magazine in many battles to protect those jewels in such national preserves as Katmai National Monument in Alaska, Sequoia National Park in California, and Carlsbad Caverns National Park in New Mexico.



was Dr. Bell's daughter Elsie May. With his bride's staunch support, the stripling editor went into action as soon as they stepped off the boat in December, 1900.

The question at stake was a vital one: Should the NATIONAL GEOGRAPHIC be merely a magazine sold by subscription and on newsstands? Or should it be the journal of a great society, representing and enlightening the legion of men and women eager to learn of the world and its creatures, and willing to support exploration and research?

"You Are Responsible Now"

Dr. Bell had seen this very vision when, as the Society's second President, he had invited 23-year-old Gilbert Grosvenor to come to Washington to build up the puny young Society and edit its struggling little magazine. But he was a man of many interests, and members of the Society's Executive Committee had persuaded him that the Midas of the 10-cent magazine knew best in publishing matters.

First, Mr. McClure had said, change the magazine's name—geography has no appeal for the public. Never mention the National Geographic Society in it, and give up trying to build circulation by membership in a geographic society. Build up circulation by newsstand sales, and publish the magazine in New York—no popular magazine will ever thrive in Washington.

All this collided head on with Gilbert Grosvenor's conception. He was appalled.

"Well, Bert," Dr. Bell said, "the Board made you the Managing Editor. You are responsible now."

The Managing Editor went at once to New York and asserted his authority. When he pointed out in detail to the Board that printing costs had soared with the move to New York while circulation had stood still, he was upheld and congratulated.

"I got the magazine back from New York after two issues—January and February, 1901," he recalled to me half a century later with grim satisfaction undimmed by the years. I doubt that he ever had quite the same feeling for those two maverick magazines.

Surprisingly but appropriately, the future GEOGRAPHIC Editor and world traveler was born where Europe and Asia meet—in Constantinople, now İstanbul, Turkey. His father, the Reverend Edwin Augustus Grosvenor, was a clergyman who preferred the classroom to the pulpit. From 1867 to 1890 he taught history at Robert College, founded as a result of the chance meeting of two Americans—financier Christopher Robert and Dr. Cyrus Hamlin, missionary—in Turkey after the Crimean War.* Both the professor and his wife, Lilian Hovey Waters, came from old New England families.

The young couple felt doubly blessed when on October 28, 1875, they became the parents of identical twin boys. One, Edwin Prescott Grosvenor, was destined to become a prominent lawyer in New York City and die there of pneumonia in 1930. The other, Gilbert Hovey Grosvenor, was to live 36 years longer and to serve on a vast scale the same international enlightening function as missionary-founded Robert College.

Geography Comes to Life

"Before the future president of your Society went to America," wrote the late Maynard Owen Williams, Chief of the GEOGRAPHIC's Foreign Staff, "his eyes were focused on scenes of many lands and his ears tuned to the babel of tongues then spoken on Galata Bridge. . . .

"His nurse was an Armenian. Kurdish porters toiled up the cobbled paths carrying provisions to his home. Albanians, Bulgarians, and Greeks were his classmates. . . .

"Little wonder that geography seemed to Gilbert Grosvenor a dramatic series of living pictures, rather than mere dots on a chart."

The old Byzantine city on the Golden Horn

*See, in the NATIONAL GEOGRAPHIC: "American Alma Maters in the Near East," by Maynard Owen Williams, August, 1945; and "Robert College, Turkish Gateway to the Future," by Franc Shor, September, 1957.

"His personality and range of work are so unusual and dramatic," wrote Gilbert of his father-in-law, Alexander Graham Bell. Throughout his life, the inventor promoted the teaching of speech to the deaf. He pioneered the use of his father's Visible Speech, a system of phonetic symbols representing speech sounds. Here in 1916, communicating with Charlie Crane, a Canadian boy both blind and deaf, he must "talk" on the fingers. Inspired by Dr. Bell, the Editor was active in the Alexander Graham Bell Association for the Deaf for half a century. He also supported the Clarke School for the Deaf and the American Foundation for the Blind. Helen Keller once wrote Dr. Grosvenor, "I wonder if you realize what your friendship means to the blind. . . . I wish there were new and beautiful words to thank you. . . ."

GILBERT H. GROSVENOR © NATIONAL GEOGRAPHIC SOCIETY

"I ENJOYED A 'FLIGHT' *in a new hydrofoil ferry,* ARROW OF THE SUN," *wrote Dr. Grosvenor in the April, 1957,* GEOGRAPHIC. *He drove it, too, as it raced past Messina, Sicily.*
"Photographing the sleek vessel awakened

memories," he added. The Editor of the GEOGRAPHIC *in 1919 recorded the* HD-4 *(left), a cigar-shaped hydrofoil designed by Alexander Graham Bell and Frederick W. (Casey) Baldwin, as it roared across Baddeck Bay, Nova Scotia. Rising above the water on thin steel blades,* HD-4 *set a world speedboat record, 71 miles an hour. Mrs. Bell told her son-in-law, "Your photographs helped Mr. Bell as much as if you'd been one of his assistants."*

GILBERT M. GROSVENOR COLLECTION © N.G.S.

was then the throbbing capital of a vast realm of the fez and the veil, for the Turkish Empire, though in its twilight, still stretched from the Adriatic to the Persian Gulf and from deep into the Balkans to the tip of Arabia. To Professor Grosvenor the teeming, ancient city seemed to cry out for a worthy book. He plunged into preparation of a two-volume work, and the twins helped make it a family project.

To aid in copying the manuscript, Gilbert learned to type. But another new development fascinated him far more. His father had acquired a number of photographs, and with them he proposed to illustrate his book. Photoengraving was in its infancy then, and the idea was a revolutionary one. But it prevailed, and the scholarly work was embellished with 240 photographs. Gilbert Grosvenor's lifelong love affair with photographs had begun.

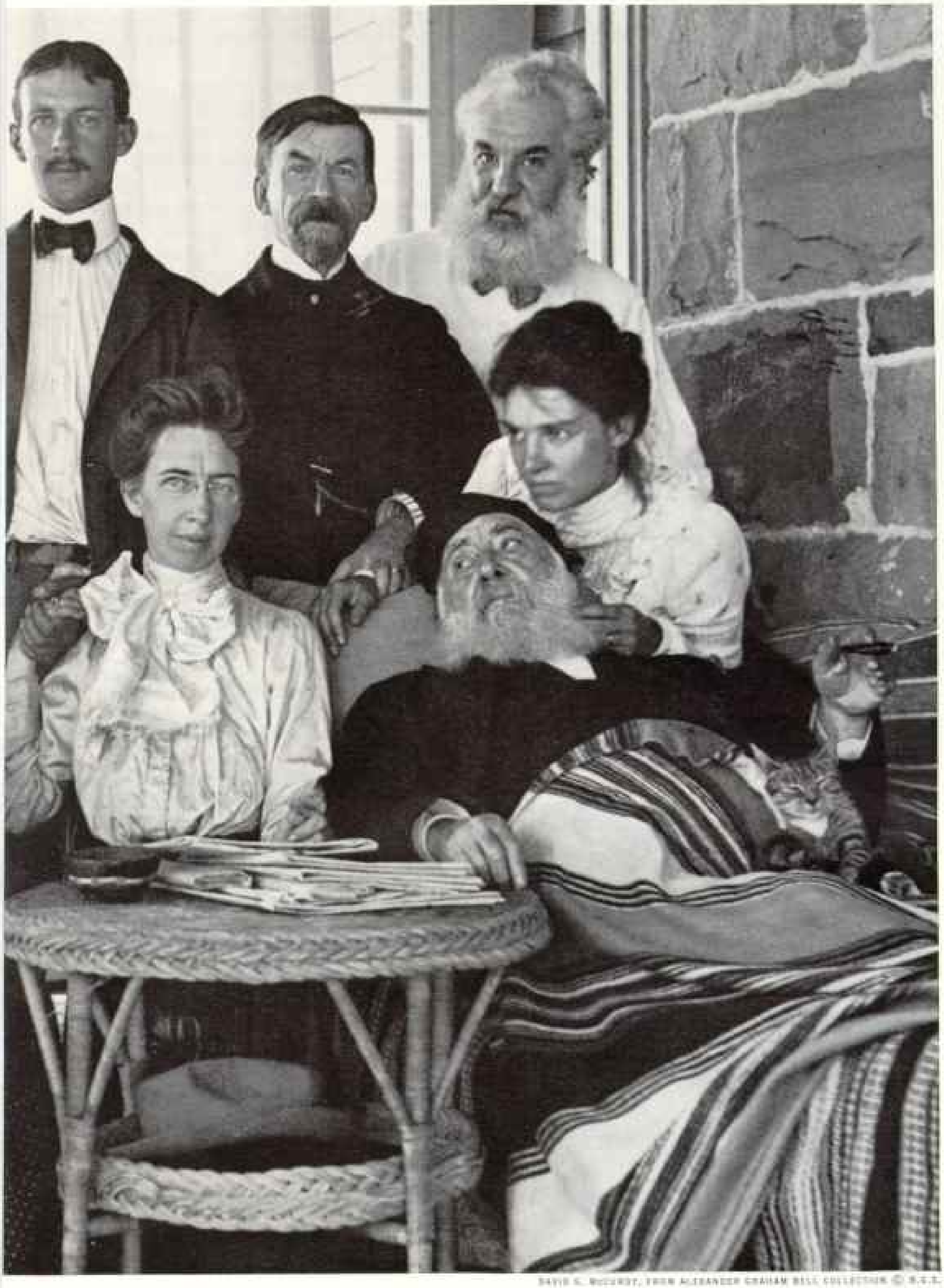
Meanwhile the time had come for a drastic change of scene for the family—from the twin-gabled house by the Bosporus to Amherst College in Massachusetts, where the father became professor of European history. The twins were duly enrolled at Amherst, and instructors, students, and tennis opponents had a strange sensation of seeing double. Of medium height but wiry build, the Grosvenor brothers are remembered still as one of the best tennis doubles teams ever to play for Amherst.

Career Began With Love and a Letter

In the formal but gay world of the nineties there was one young lady who had no trouble at all in telling the twins apart. She and Gilbert had met at a house party at the Bells' summer home at Baddeck, Nova Scotia, in 1897, his graduation year, and between them a spark had flashed. The 19-year-old girl was Elsie May Bell of Washington, D. C., slim-waisted, brown-eyed, and as full of spirit as a mockingbird.

Elsie's father, the famed Alexander Graham Bell, had invented the telephone in 1876 and now, while pursuing his lifelong goal of improving the lot of the deaf, he had turned his amazingly versatile mind to contemplating such varied problems as human flight, air conditioning, and popularizing geography. His father-in-law, Gardiner Greene Hubbard, had been the moving spirit in "organizing a society for the increase and diffusion of geographical knowledge" at the Cosmos Club in Washington in January, 1888, and had served as President of the National Geographic

"**Pictures recall** happy, very happy days," Gilbert mused years after this one was made in August, 1901, at the Bell summer home, Beinn Bhreagh, in Baddeck, Nova Scotia. The young editor stands



DAVID C. McCURDY, FROM ALEXANDER GRAHAM BELL COLLECTION © N.G.S.

between his mother and his father, then professor of modern governments at Amherst College. Gilbert's bride, Elsie May Bell Grosvenor, leans over her grandfather, Alexander Melville Bell, a noted teacher of speech. Her father, Alexander Graham Bell, stands behind; her mother, Mabel Hubbard Bell, holds Gilbert's hand. At left: the second Mrs. Alexander Melville Bell.

© N. G. S.

ELSIE BELL GROSVENOR

Society until his death in December, 1897. As its second President the Society elected his son-in-law, Dr. Bell.

After a year of dubious progress, with the kind of magazine usually produced by eminent but amateur editors, Dr. Bell decided he needed a man who could make the magazine interesting. In fact he felt this so strongly that he decided to pay the salary from his own pocket, if he could get the right man.

History fails to record to what extent the distinguished elbow of Dr. Bell was gently jogged by his lovely daughter, but it does record that on February 19, 1899, he wrote a letter to his friend Dr. Edwin Grosvenor at Amherst:

My dear Professor Grosvenor:

As President of the National Geographic Society I am on the lookout for some young man of ability to act as Assistant Secretary of The Society, and manage, under the direction of our Editorial Committee, our monthly publication, "The National Geographic Magazine."

In this connection your two sons recur to my mind. I do not know whether the position contemplated would be in the nature of an advance on the positions they now occupy, or whether it would be consistent with their aims in life—and therefore write confidentially to you before approaching either of them upon the subject. If, as I understand, they contemplate ultimately going into law—the opportunities for study here are unrivalled, and the duties of the position would not be of so exacting a character as to prevent them from pursuing any studies they desire.

The present Editor of The Magazine, an expert geographer, serves without remuneration, but he finds himself so overburdened with work as statistician to the Agricultural Department that he desires to resign the Editorship. He would remain, however, on the Editorial Committee and give his active assistance to his successor. We are now contemplating the advisability of placing The Magazine in the hands of one only salaried officer, the Assistant Secretary, making him the Managing Editor to get out The Magazine with the assistance of the Editorial Committee.

I am afraid, however, that our present Assistant Secretary would not be competent to conduct The Magazine. He is a married man, and we pay him a salary of $1,200 a year. I have thought that perhaps for the same salary we could secure an unmarried man of superior ability by applying to the Presidents of our universities.

Some bright college graduate just beginning life would probably find in this posi-

tion a steppingstone to something better, and be able, while here, to pursue some post-graduate course of study while earning his livelihood.

Under the proposed plan the members of the Editorial Committee would provide the original material for The Magazine, the Managing Editor simply applying to them for material as needed. The chief duties of the Managing Editor would be the *arrangement* of the material and the reading of proof—but he must also have sufficient literary ability to be able to write himself in an emergency, and sufficient judgment to use the *scissors* with discrimination in quoting from our exchanges. Of course, in all this he would have the assistance of the experts upon the Editorial Staff who would always be glad to be consulted. Either of your sons would, I am sure, have sufficient ability for the position, but of course I do not know what their present prospects are, or whether such an opening would prove attractive to them.

We shall make no change for some months yet, and in the meantime no harm can come from consulting you upon the subject. . .

P.S.—I forward by this mail a specimen copy of The Magazine.

Identical Letters to Identical Twins

Dr. Bell's idea that this would be a part-time job, with plenty of time for studying law on the side, seems a bit quaint today when it takes 1,800 hard-working people to carry on the Society's work. Even more amusing in the light of events is his comment that the position might be "a steppingstone to something better."

But to me the most delightful aspect of the letter was its Victorian impression of blindness to the facts of young love: "In this connection your two sons recur to my mind."

And to the boys themselves Dr. Bell wrote letters that were identical twins:

My dear Friends:

Will you kindly look over the enclosed communication to your father and let me know whether either of you would consider the proposition to become Assistant Secretary of the National Geographic Society, and Managing Editor of The Magazine if such a proposition should be made to you.

To no one's surprise, Edwin deferred to his brother, who was in the process of adding an Amherst Master of Arts degree to the magna cum laude Bachelor of Arts diploma he received in 1897, and was teaching just about everything in the curriculum at the Englewood Academy for Boys, in New Jersey.

"I've got her at last and she won't get away," exulted Gilbert when Elsie May Bell accepted him. They were wed (opposite) in King's Weigh House Church, London, on October 23, 1900.

A loving father, Gilbert shoulders his daughter, Gertrude Hubbard, and son, Melville Bell, in the spring of 1906. Later, he dispatched long letters about the boy's care when he visited his Bell grandparents. "Please don't let anything interfere with Melville's unhindered use of the typewriter," he urged. "It helps him to spell, to think, to express himself."

"Our babies have come fast," Gilbert wrote in 1909, "but I am determined that Elsie shall not lose her freshness and beauty; I want her to keep her youth and loveliness for her children to admire and appreciate when they grow up, as my father kept my mother young." He captured this vision of wife and son in 1902.

GILBERT H. GROSVENOR © N.G.S.

"I had been engaged originally to give instruction in French, German, and Latin," Dr. Grosvenor recalled a few years ago. "The principal later assigned me classes in college algebra, chemistry, public speaking, and debating. Compared with this program, a job as editor seemed very easy." *

He reported for duty in Washington on April Fools' Day, 1899, and Dr. Bell personally escorted his new editor to the Society's headquarters. It consisted of half of a small rented room on the fifth floor of a building, long since gone, across 15th Street from the U. S. Treasury.

The young man, it turned out, was not to have the title of Managing Editor at the start, but Assistant Editor and Assistant Secretary. Whatever the title, the responsibility was all his. As he wrote many years later:

"The little space of which I, age 23, the only employee, was to assume charge, was littered with old magazines, newspapers, and a few books of records, which constituted the only visible property of The Society. The treasury was empty, and had incurred a debt of nearly $2,000 by expenditure of life-membership fees to keep alive.

"The Society was not so poor as it seemed.

*From his booklet, "The National Geographic Society and Its Magazine" (1957). Copies of this and of the October, 1963, and July, 1965, issues containing Dr. Grosvenor's articles "The Romance of the Geographic" and "First Lady of the National Geographic" may be obtained from the Society for $1 each until the limited supply is exhausted.

however, for its management, inspired by Alexander Graham Bell, had a revolutionary idea:

"Why not popularize the science of geography and take it into the homes of the people? Why not transform the Society's magazine from one of cold geographic fact, expressed in hieroglyphic terms which the layman could not understand, into a vehicle for carrying the living, breathing, human-interest truth about this great world of ours to the people? Would not that be the greatest agency of all for the diffusion of geographic knowledge?"

By the end of his first month, young Mr. Grosvenor's appointment had been confirmed for one year at a salary of $100 a month (paid personally by Dr. Bell for five years). Within a year and a half he was Managing Editor, and before two years were over the battle with the McClure faction had been won and the magazine brought back from its brief Babylonian captivity in New York.

Now Gilbert could concentrate on improving the magazine, as well as enlisting new members by writing to every possible prospect that his father, father-in-law, wife, and friends could suggest. Soon membership was steadily rising, and members were reading the little magazine instead of relegating it to a shelf with other scholarly publications and promising themselves to consult it someday.

Photographs Open Windows on the World

In February, 1903, the Board applauded its young dynamo's efforts by giving him the proud title of Editor. Actually, as the magazine's only professional, he had been the editor from the outset.

Remembering Professor Grosvenor's elaborate use of photographs in his Constantinople book, his son was making his magazine more and more a window on the world. Distant lands became vividly near and exciting when presented in pictures and maps teamed with informative, clearly written text.

The Editor bought a camera and took pictures himself, besides getting photographs from Government agencies and buying all he could afford. Explorers and travelers told their first-person stories, taking the reader along in imagination to feel as they felt and learn as they learned. No wonder that people with inquiring minds everywhere began to respond by the thousands—especially in the new 20th century, when the war with Spain had expanded American horizons to the far-off Philippines.

Members found that, as if by magic, the magazine in their mailbox bore timely information about places in the news, with photographs and maps. Guam, Luzon, Manila Bay—where were they? Here they were, on this map in the GEOGRAPHIC!

"**An eye-opener,**" the Editor called his experiences with the 1904 traveling sessions of the Eighth International Geographic Congress, meeting in the United States for the first time. Here, in Chicago, delegates ride a horse-drawn sightseeing coach on a warm September day. The Editor sits opposite his wife on the top deck, left. "Elsie was the belle of the Congress," Gilbert wrote to his mother. "The admiration was expected but no less pleasant."

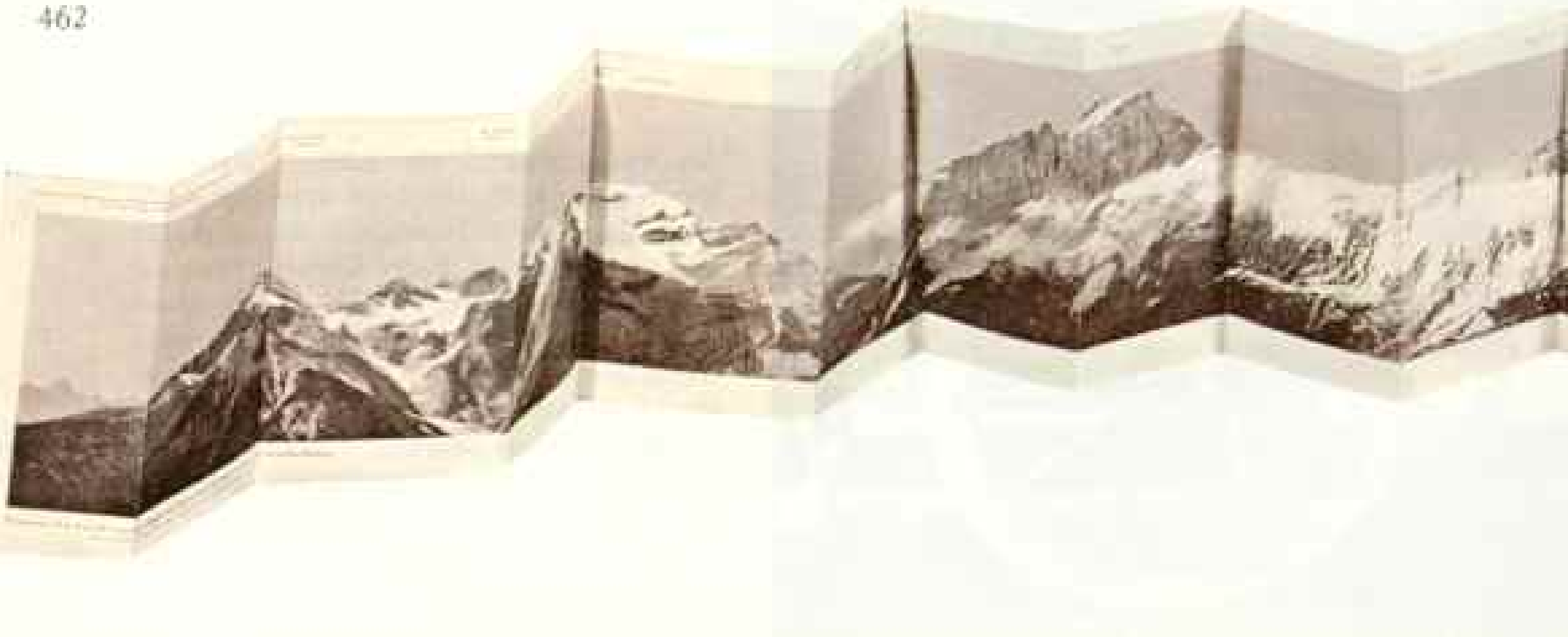
"This thrilling world"

"THE MIND must see before it can believe," proclaimed Gilbert Grosvenor, and from the earliest days he filled the magazine with photographs. In January, 1905, the GEOGRAPHIC ran 11 pages of extraordinary pictures made by Russian explorers at Lhasa, the Forbidden City of Tibet, the palace of the Dalai Lama (above) among them. "Society members congratulated me on the street," he recalled. Two years earlier a picture of a Filipina rice harvester established another policy: portray people in natural attire —or lack of it.

Ever the innovator, Mr. Grosvenor in June, 1911, published as a foldout an 8-foot-long panoramic view of the Canadian Rockies. "As an editor I was attempting to do something that no other editor had done," he said.

Among other GEOGRAPHIC firsts: underwater photography in color. With deafening explosions of flash powder above the water, Charles Martin, using a waterproof camera, photographed Florida reef life, including this hogfish in the January, 1927, issue.

AUTOCHROME BY W. H. LONGLEY AND CHARLES MARTIN © N.G.S.



TOPROGRAPHIC AND HYDROGRAPHIC

ELSA C. WORCESTER

Before he had been on the job a year, Gilbert Grosvenor had given his members two maps on an area as much in the public eye then as Viet Nam is today: a large supplement map, Theater of Military Operations in Luzon, June, 1899; and Philippine Islands as the Geographical Center of the Far East, January, 1900.

Lacking funds, he got such early maps from Government agencies. They were generally in black and white only. But within a few years he was able to afford maps printed in several colors.

On a trip to Europe in 1913, he saw the shadow of approaching war and immediately ordered maps from commercial cartographers. Out came the NATIONAL GEOGRAPHIC with a special wall-map supplement in colors, Balkan States and Central Europe, in the magazine for August, 1914—the very month the great armies of Europe marched to a four-year Armageddon. Europe and Adjoining Portions of Africa and Asia followed in July, 1915, as the conflict grew toward world dimensions.

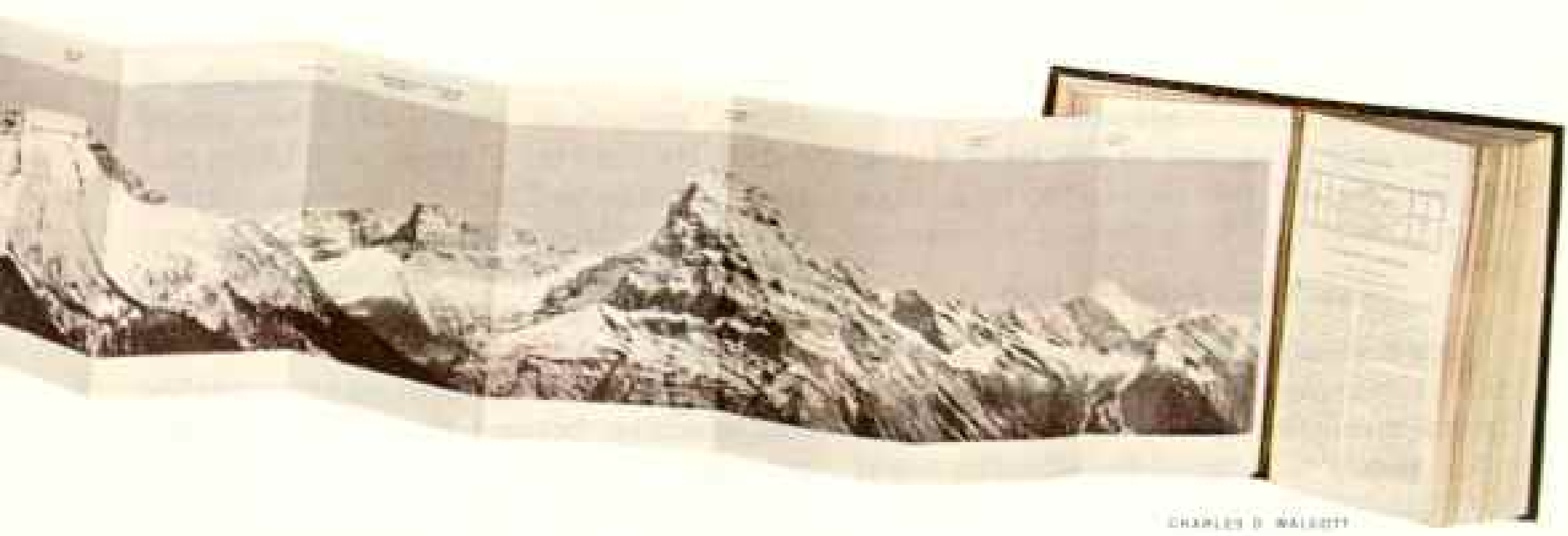
Before the end of World War I, the Society had its own Cartographic Division.

Other Editors Scorned the Photograph

"The content of each number is planned with a view of being timely," wrote Editor Grosvenor in his "Guiding Principles." Members could expect prompt background information "whenever any part of the world becomes prominent in public interest, by reason of war, earthquake, volcanic eruption, etc."

Indeed, it had been a volcanic eruption that caused the young editor to start publishing photographs on a hitherto unheard-of scale.

As a clue to public interest in various subjects for the magazine, he had formed the habit of closely noting audience reaction at the Society's Washington lectures. At a lecture on the 1902 eruption of Mont Pelée, which



CHARLES D. WALCOTT

"Land of unlimited possibilities," Editor Grosvenor wrote of Russia after a trip just before World War I. In his article in November, 1914—still consulted for its view of pre-Communist Russia—he chronicled the devoutness of the people, their high birth rate, low literacy rate, assets, and

killed 30,000 people on the island of Martinique, he overheard some young ladies behind him complaining about the absence of photographs showing the awful destruction. The lecturer had been too squeamish to show them.

Gilbert Grosvenor decided the girls were right, and he redoubled his efforts to obtain and publish outstanding photographs.

Editors of other magazines generally were blind to the promise of photo-journalism. They scorned Gilbert Grosvenor's photographic illustrations made possible by copper halftone engraving, and an official of a leading monthly of the day—now long since defunct—told him flatly they were vulgar.

First Color Series in 1910

Even within his own Editorial Committee young Grosvenor encountered this prejudice. Several members opposed use of photographs unless purely "scientific." "Too often this meant just plain dull. To the Editor it was self-evident that every picture and sentence must be interesting to the layman. How could you educate and inform if you lost your audience by boring your readers? He persisted in trying to make the magazine reflect this fascinating world.

A turning point came on a December day in 1904 when the Editor found the deadline for the January number upon him—with 11 vacant pages and not a manuscript in sight. Discouraged, he turned to the morning mail, and found a big envelope of photographs of Lhasa, mysterious capital of Tibet (pages 462-3). He filled the 11 pages with Lhasa pictures accompanied only by captions, and expected to be fired. Instead, the response was so favorable that before the month was out he had been unanimously elected to the Society's Board of Managers.

Thus photographs, outstanding in quality and quantity, became the hallmark of the growing young magazine—eventually three pages of pictures to every one of text. And in

problems. For the first time, he published a whole series of his own photographs—61 in black and white, 10 tinted by hand. Always he sought illuminating details: a priest and his pupils visiting the Kremlin's historic shrines; a peasant woman with straw sandals, "a luxury."

November, 1910, the GEOGRAPHIC presented its first color series, 24 pages of hand-colored "Scenes in Korea and China"—far more color than any magazine had ever published in one issue.

Soon photography in color superseded colored photographs, and ever in the forefront in its use was the GEOGRAPHIC's picture-minded Editor. Constantly he cajoled, criticized, and encouraged his small but able and loyal staff.

Making History With Pictures

"If the National Geographic Magazine is to progress," he wrote a field man in France in 1923, "it must constantly improve the quality of its illustrations, and this can only be attained by you by giving greater care and attention to the mechanical details involved in making photographs. Light conditions, cloud, rain, can all be overcome by a photographer who will study the photographic art and seek to find the method of overcoming such handicaps, and yet cloud and overcast sky should not be termed handicaps, for often such conditions enable a photographer to secure better photographs than can be obtained in bright sunlight. It all depends on whether the photographer understands atmospheric effects."

"The art of taking photographs in color," he wrote the same man three years later, "requires the technique of an engineer, the artistic ability of a great painter, and the news interest of a daily-newspaper photographer, so if you do not strike 100 with every photographic attempt in colors, I hope you will not be discouraged. I am much pleased with the increasing quality shown by all your pictures."

He made the Society's photographic laboratory one of the most progressive in the country and was quick to adopt new techniques and tools. When reliable exposure meters became available, he ordered them for all staff photographers, declaring: "The photographer who attempts to work in the field

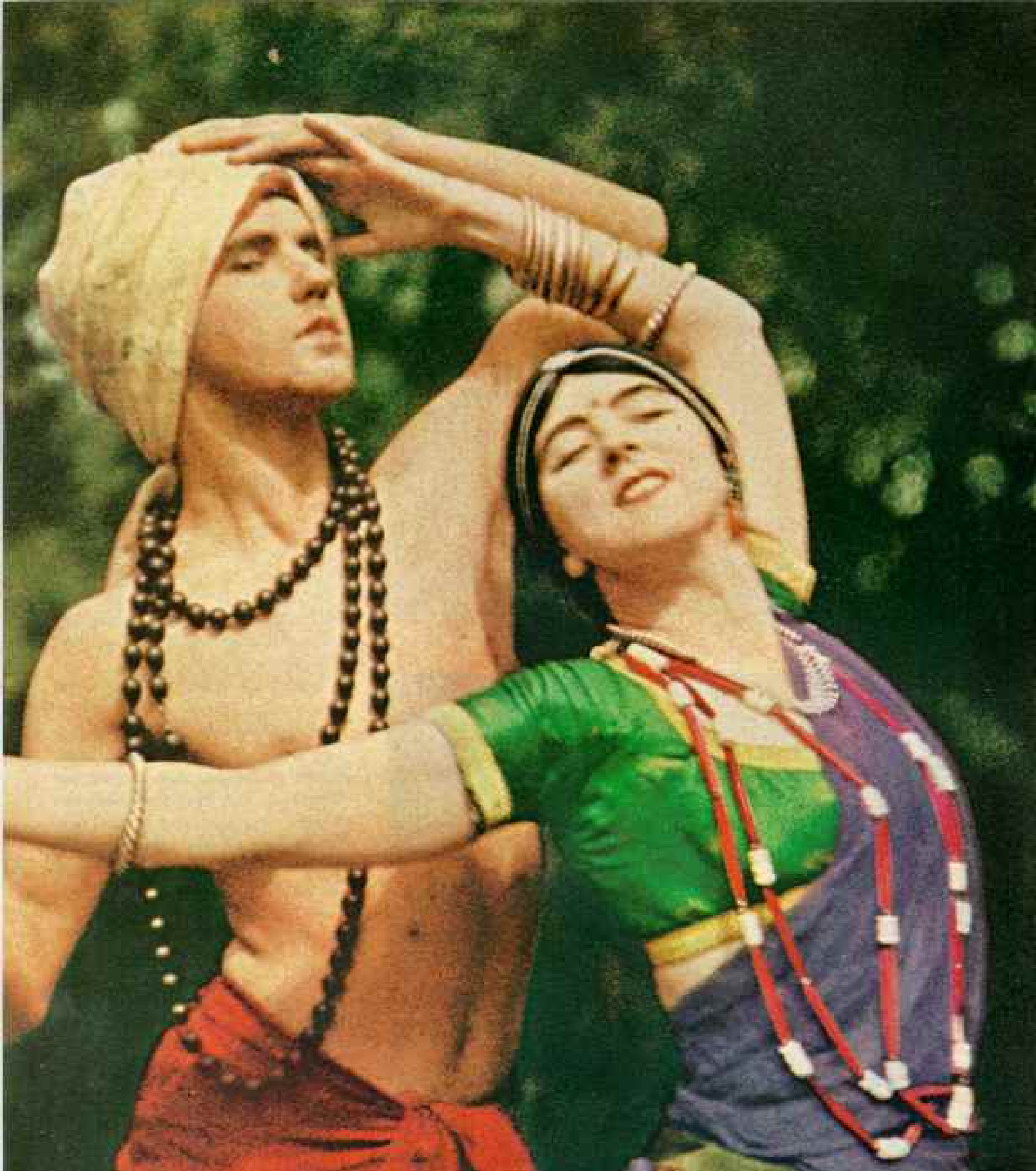
"People have a sense of the beautiful and a true instinct for artistic merit," Dr. Grosvenor believed. And his faith in the good taste and enthusiastic interest of GEOGRAPHIC readers guided his editorial policy. In "The Land of the Best," an appreciation of the United States published in April, 1916, the Editor ran the magazine's first natural-color series, including this picture of the famous husband-and-wife dance team, Ruth St. Denis and Ted Shawn, captioned "The poetry of motion and the charm of color."

Today Mr. Shawn directs the Jacob's Pillow Dance Festival that he founded 33 years ago in the Berkshire Hills near Lee, Massachusetts. Here with a copy of a GEOGRAPHIC bearing his photograph, the dancer sits on a rock dedicated "in memory of John Fitzgerald Kennedy" and inscribed with a prayer attributed to St. Francis of Assisi. The ageless Miss St. Denis—in her 80's—gladly posed for another GEOGRAPHIC picture, half a century after the first.

During Gilbert Grosvenor's 55-year career as an editor—one of the longest on record for a major journal—he selected for publication some 3,500 articles illustrated with thousands of color photographs.

"It was exciting always," he said after retiring in 1954. "I have found equal fascination in obtaining members for the Society. I feel they are friends. I can never express my admiration for the millions of people who have helped extend our educational work."

AUTOCHROME (RIGHT) BY FRANKLIN PRICE KNOTT; KODACHROMES BY IVAN MASSAR (LOPEZ) AND J. R. EYERMAN © N.G.S.



UNDERWOOD & UNDERWOOD (BELOW); KODACHROME BY B. ANTHONY STEWART © N.G.S.

For Gilbert and Elsie Grosvenor
with the best wishes of
Washington
March 30th 1924
Helen H. Taft

Memories of U. S. Presidents enriched Dr. Grosvenor's years. He had known 12 Chief Executives, all of whom honored the Society by presiding over its functions, supporting its causes, or presenting its medals. Six contributed articles to the magazine—Theodore Roosevelt (opposite), William Howard Taft (lower left), Calvin Coolidge, Herbert Hoover, Dwight D. Eisenhower, and Lyndon B. Johnson (left). Here, Dr. Grosvenor greets Mr. Johnson who, as Vice President, accepted the Jane M. Smith Award Medal and life membership in the Society for his "untiring efforts to bring the peoples of the world closer together."

In the early years, the fledgling Editor had cause to be grateful to President Taft, his cousin: "Mr. Taft had this old family feeling and was very kind in helping me at the Geographic," he recollected.

Sometimes gratitude flowed the other way. When skeptics questioned Theodore Roosevelt's survey of Brazil's hitherto unmapped River of Doubt, now named for him, the Society endorsed the former President and invited him to lecture on his expedition. In 1914 T. R. wrote: "I am very proud of the fact that it was the National Geographic Society that first took the stand it did in connection with this exploration and that my first address was made to it."

All the Presidents that Gilbert Grosvenor knew had reason to be thankful for his strong support of great national causes. During World War I, for example, the Society, through its members, maintained wards in American Military Hospital No. 1 at Neuilly, France. And in an earnest appeal to members, the Editor called for "personal deprivation" and a pledge not to eat wheat products in the wartime food emergency.

In World War II, the Society's maps aided the war effort. Government departments requisitioned more than a million. President Franklin D. Roosevelt based many of his great decisions upon them, and sent a collection in a special cabinet to Britain's Prime Minister Winston Churchill.

without this modern instrument is like a traveler who disregards automobiles and uses old-fashioned horse-carriages."

By the time Dr. Grosvenor retired as Editor in 1954, he could point to a score of photographic firsts for the magazine, from the first aerials of the North and South Poles to the first extensive series of color photographs of New Guinea's fantastic birds of paradise.

"Grosvenor Luck" Nine-tenths Foresight

In 1920 Dr. Grosvenor had been elected President of the Society in addition to being Editor of its magazine. Although then only 44, he had long been the moving spirit of both.

His wide travels and friendships, extensive reading, and close observation of world events endowed him with an editorial "cat's whisker" admired and envied in the publishing world. For instance, "Roaming Korea South of the Iron Curtain" came out in the June, 1950, GEOGRAPHIC—a 32-page article, with 34 illustrations and a map, in the hands of members the month the Korean War broke out.

Thus grew the legend of "Grosvenor luck," actually about nine-tenths foresight. One factor was Dr. Grosvenor's well-stocked larder of manuscripts and photographs on most parts of the world. Another was the ability of his devoted staff to move fast. Less than two months after Japan attacked Pearl Harbor, the Society's members, and our armed forces, received a new Geographic map in 10 colors, Theater of War in the Pacific Ocean, with a table of airline distances. Immediately after the attack, an urgent request from the Navy had sent 600 copies of the current Geographic Pacific map flying west for battle use.

Always patriotic, Dr. Grosvenor also believed strongly in the importance of our British heritage and unity of purpose among the free peoples of the English-speaking world.

"I intend to use the Geographic Magazine to the best of my ability to promote a better understanding between Great Britain and the United States," he wrote to a contributor in December, 1918.

"Let us hope the American people and the British people will be smart enough to learn the principal lesson of this war, that the two nations must stand absolutely together hereafter."

Over one particular GEOGRAPHIC, I remember, he labored with special care and pride—the issue for April, 1949, devoted wholly to "The British Way," recounting the British Isles' great gifts to mankind. When at last he had chosen every picture and personally edited every word, he wrote as the proofs were released to the printer, "These are my final revisions. I now bid farewell to this article, which I've been planning for five years."

Another famous one-subject issue that took editorial courage to produce was March, 1919, entirely devoted to dogs. Its popularity promptly proved the identity of the dog's best friend, and that issue of the magazine became a collector's item.

Eventually it became a book, for books soon supplemented the magazine as increasers and diffusers of knowledge. Regular News Bulletins

to the press brought up-to-date geographic information to millions of newspaper readers, and School Bulletins informed the young in terms they could understand.

One of the first things the young Editor had learned was to trust his own editorial judgment. A paper from a distinguished professor of geography had proved, in Gilbert Grosvenor's charitable words, "exceedingly hard to digest," and he had taken it to Dr. Bell for his opinion. That learned gentleman confessed that much of the paper baffled him too, but advised its publication because of the high academic standing of its author.

An avalanche of protest followed, and Gilbert Grosvenor made a vow that thereafter the magazine would publish no sentence not readily understood. Technical matter, he decided, could and should be published in separate scientific papers.

No Patience With Obscurity or Pretense

Gilbert Grosvenor had no patience with murky thinking. "What does this mean?" he would pencil sternly beside a paragraph long on pretentious words but short on clarity of thought.

Bombast bored him. "Come down off your soapbox," he said firmly to writers carried away by their opinions to the point of speechifying in print. "Stick to the facts. Our readers can be trusted to form their own opinions."

"People like to learn," he once observed, "but dislike the feeling of being taught."

Use a long word when a short one would do as well, and the manuscript would come back from his paper-piled office with the offending word circled and labeled: "This is a jawbreaker."

Qualify a statement with the lazy phrase "is said to" and you would be called into his presence and informed: "The NATIONAL GEOGRAPHIC MAGAZINE does not publish hearsay. Either it is a fact or it is not. Find out."

If you came to consider yourself an expert on a field of science or a country and affected esoteric terms or high-flown language, Gilbert Grosvenor would puncture your inflated ego and bring you down to earth. Snobbish use of foreign words without translation was, and is, similarly taboo, on the grounds that no one knows every language and it is our business to make ourselves understood.

Once he spelled it out for me patiently: "If you

War loomed over China in June, 1937, as the Grosvenors gazed on these smiling Buddhas, 1,500-year-old guardians of peace at the Yun Kang caves. Within a month Japan and China were at war. Shortly, a National Geographic botanical expedition in China sent out an article and pictures for publication in the Society's magazine, giving a timely understanding of the terrain of conflict.

GILBERT M. GROSVENOR © N.G.S.

"You and your National Geographics!"

REPRODUCED BY PERMISSION OF ESQUIRE MAGAZINE © 1937 BY ESQUIRE, INC.

Famous enough for fun, the GEOGRAPHIC and its Editor came in for ribbing from the Nation's press. No one ever throws a GEOGRAPHIC away, runs an oft-told story, so a cartoon in *Esquire* by Larry Harris dramatizes the consequences (left).

The *New Yorker*, in a 1943 profile of Dr. Grosvenor, gave its readers both the line drawing below and a written description of him—"kindly, mild-mannered, purposeful, poker-faced." Casting sly humor at his longtime devotion to birds, the magazine quoted a Grosvenor remark about Elisha Hanson, a Geographic Trustee: "He's a warm personal friend, and furthermore he's intensely interested in pigeons."

Pulitzer Prize-winning cartoonist for the *Washington Star*, Clifford K. Berryman sent a periwigged District of Columbia with a teddy bear—the artist's trademark—to congratulate Dr. Grosvenor on his golden anniversary as Editor of his brain child, THE NATIONAL GEOGRAPHIC MAGAZINE.

don't tell the people, they won't know." Elementary, and I shall never forget it.

Another valuable lesson was learned when, as a young and green member of the staff, I was given a manuscript to edit. The author was a well-known woman writer, a personal friend of Dr. and Mrs. Grosvenor, and I hesitated to alter it much, though I winced at many of its mannerisms, such as "lovely" or "charming" every few hundred words.

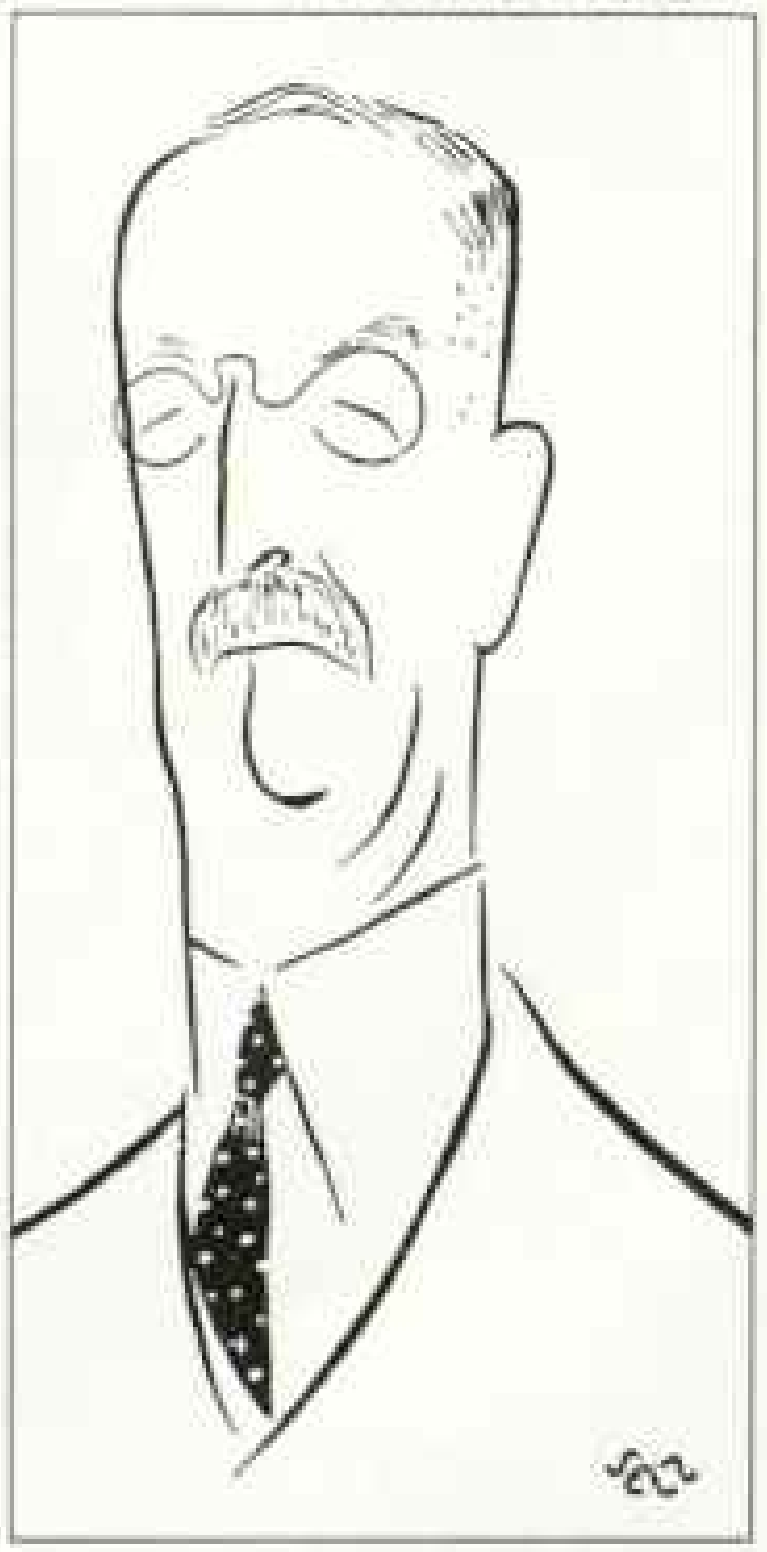
I soon learned my error of omission. Dr. Grosvenor asked who had passed this into proof. I confessed. "This violates," I was emphatically told, "every rule of editing NATIONAL GEOGRAPHIC MAGAZINE copy." Never again did I pass a story until it had been improved to the fullest possible extent.

Every word and picture, every advertisement and lecture had to meet the highest standards. "This advertisement looks very questionable," he pointed out in a 1911 memo. "Ten pages of good advertising is better than thirty pages containing any questionable matter."

Dullness he abhorred, whether in manuscripts or in lectures. Of one scientist, he noted half a century ago: "I had him down to lecture once and he succeeded in putting everybody to sleep who didn't leave."

But the all-important test was truth. "It is very important,

DRAWN BY SELF. © 1943 THE NEW YORKER MAGAZINE, INC.



COURTESY OF THE WASHINGTON STAR

when considering material from youthful travelers, that their material be cross-examined with extreme care," he wrote a member of his staff in 1934. Citing a popular tale of this type, he said, "I rejected it because, while most entertaining, I felt that it was not generally true throughout. The first test of every article is truth and accuracy. Avoid romances as you would the devil."

The accuracy of his memory was almost eerie. "I published a paper on that in April, 1904," he would say. And swinging around to the bound volumes behind him, he would pull out one and turn to the page.

The editorial "I" was understandable because literally, in those early days, Gilbert Grosvenor *was* the GEOGRAPHIC.

From the first, he himself wrote articles for the magazine. Even before he came to Washington he contributed "Lloyd's Journey Across the Great Pygmy Forest." It appeared, unsigned, in the January, 1899, issue.

Between 1899 and 1965 he produced literally hundreds of articles and pictures for the GEOGRAPHIC. Specifically, 285 articles are credited to him—47 with his byline, 13 signed with a co-author, and 225 unsigned. His published pictures total 411. The first, in the November, 1906, issue, showed the explorer Peary and the secretary of the Peary Arctic Club. The last, in July, 1965, illustrated his tribute to the late "First Lady of the National Geographic" and showed his indomitable wife on their travels through five continents.

Found Articles Even at Sea

Ever alert for fascinating subjects and able contributors, he found them even on the high seas. One day in 1930 the liner in which he was crossing the Atlantic encountered the full-rigged sailing ship *Grace Harwar*, and Dr. Grosvenor's camera caught forever that fleeting vision of high-piled canvas (pages 474-5).

Later he learned that a young Australian writer, Alan Villiers, had sailed in her from Australia to England in the grain-ship race

around Cape Horn. The result was "Rounding the Horn in a Windjammer," first of 23 articles in the magazine between February, 1931, and February, 1966, by Capt. Alan Villiers, one of the greatest living writers of the sea.

Dr. Grosvenor himself was an avid sailor.

"He belonged to the generation of blue-water sailors," said the Reverend Dr. Edward L. R. Elson of the National Presbyterian Church in his eloquent funeral sermon. "He sailed small boats and large boats, and always with great enthusiasm. He had such an infectious enthusiasm for sailing that he affected everybody whose life he touched. He sailed the Bras d'Or Lakes in Nova Scotia, into every little cove and indentation, and the wide open spaces; and he sailed the ocean.

"Only a few years ago in mid-summer, with grandsons and granddaughters for crew, when Dr. Grosvenor was in his mid-eighties, he raced the *Elsie*, the sizable yawl which he had received from Alexander Graham Bell, in an 18-mile race sailed in near-gale winds on the big Bras d'Or Lake. But what is more significant is that against younger competitors the *Elsie* won. Those of us who were there will never forget the night at the yacht club when the award was bestowed. Dr. Grosvenor was more fatigued by the adulation and the plaudits of the people than by the race itself."

As Dr. Elson said in that memorable tribute, "In the highest and best sense, he was a religious man." Although a devout and lifelong Christian, "he never paraded his piety. His spirituality was as spontaneous and natural as the disciplined brilliance of his mind and the social grace with which he moved on every level of humanity."

Fought Prudery in Behalf of Smithson

In the early days, the young Editor augmented Dr. Bell's $100 a month by writing for other publications, and he did not hesitate to wield his free lance in behalf of causes that interested him. A yellowed article in the *New York Herald* of March 1, 1903, bears the byline, "Gilbert H. Grosvenor, Editor National Geographic Magazine," and starts:

"James Smithson, the founder of the Smithsonian Institution, is about to be turned out of his grave, in Genoa, Italy, to make room for a quarry.

"The birth, life and death of this great benefactor of mankind were for him one series of misfortunes, and now even his resting place is to be destroyed. As the illegitimate son of a duke and a noble lady who was the descendant of kings, he came into the world unwelcomed;

Vagabond from a bygone day, the full-rigged old Finnish windjammer *Grace Harwar* sailed into Dr. Grosvenor's heart when he spied her from the deck of an ocean liner in the Atlantic in 1930. To him, sailing ships "gave a glorious hint of the romance and mystery of the sea." Learning that writer-photographer Alan Villiers (inset) had served before the mast in *Grace Harwar* when she carried grain from Australia to England, the Editor signed

him on for voyages with the GEOGRAPHIC.

Always concerned with exciting firsthand narratives, the Editor recruited his writers from trail blazers such as aviatrix Amelia Earhart, physicist-balloonist Auguste Piccard, and polar explorers Robert E. Peary, Roald Amundsen, Ernest Shackleton, and Vilhjalmur Stefansson. In addition, he published works of such notable authors as Joseph Conrad, Anne Morrow Lindbergh, and Donn Byrne.

GILBERT H. GROSVENOR (SEATED), PAINTING BY ROBERT F. SISSON © N.G.S.

his life was embittered and blighted by the thought of his tainted birth; he died in Genoa—he never had a home—without a single kinsman beside his deathbed; his grave was dug in a city far from his native land, and now his bones must be turned out of his grave in order that the city may get stone for its harbor works."

It ends: "The United States Government ought to assign a war ship to carry his body in state across the Atlantic. . . . We should place him where he may rest in peace—not for another seventy-five or one hundred years, but for as long as the great nation lives for which he showed such complete confidence and respect."

Incidentally, Editor Grosvenor helped writer Grosvenor to accomplish the purpose for which he had pleaded so eloquently. While Smithson's illegitimacy caused the prudish to hesitate, the 27-year-old Editor enlisted the White House on his side. President Theodore Roosevelt agreed, and the body of the founder of our Smithsonian Institution came here "for as long as the great nation lives."

This attitude was reflected in the magazine, and Dr. Grosvenor prided himself on the fact that "the NATIONAL GEOGRAPHIC never dressed tribal women prudishly in Western clothing; we pictured them in their natural state."

The Chief, or GHG, as we called him (though nothing but Dr. Grosvenor to his face), was not the kind of editor who would ask his writers to conform to his preconceived ideas. "Just make it interesting," he would say to a staff man setting out on an assignment. Two or three generations of GEOGRAPHIC men and women owe to him our traditional freedom to report the world as we find it. Our only limitation is summed up in his seven Guiding Principles, in brief:

1. Absolute accuracy.
2. Abundance of instructive and beautiful illustrations.
3. Everything must have permanent value.
4. Avoid trivialities and material of a purely personal nature.
5. Nothing partisan or controversial.
6. Only what is of a kindly nature; nothing unduly critical.
7. Plan each number for maximum timeliness.

Fortunately some of these points—notably Nos. 5 and 6—had a certain built-in elasticity, and the Editor determined the amount of stretch. There was never any doubt about that, or about his editorial courage.

To New Heights in the Depression

When I joined the Society's staff, the year was 1933, and the great depression had cut the membership from more than a million and a quarter to fewer than 872,000. But steadily, as the Nation wallowed out of the trough, Gilbert Grosvenor *added* color pages and maps. He had faith in this country, his Society, his magazine, and the people who make up the membership.

Staunchly backed by his loyal Vice President and Associate Editor, Dr. John Oliver La Gorce, and a science-minded Board of Trustees, Dr. Grosvenor gave continued support to exploration and research.* In fact, he literally soared to new heights by committing the Society to a lofty

*See "75 Years Exploring Earth, Sea, and Sky," by Melvin M. Payne, NATIONAL GEOGRAPHIC, January, 1963.

Trail riders to Machu Picchu, the Grosvenors in 1948 follow where Society expeditions had led more than thirty years earlier. Shortly after their visit to the Peruvian ruins, discovered by Hiram Bingham of Yale University and uncovered with National Geographic Society support, a switchback road replaced the path to the mountaintop citadel.

EUGENE KNOME MADE WITH A SELF-TIMER BY GILBERT H. GROSVENOR © N.G.S.

new project in cooperation with the United States Army Air Corps: exploration of the thin upper air on the threshold of space by stratosphere balloon.

In 1934 all hands aboard the three-man flying laboratory had to parachute as the world's largest balloon split and plummeted after reaching a height of 60,613 feet over Nebraska. At the second attempt, in 1935, the great balloon had a blowout during inflation at the natural Stratobowl near Rapid City, South Dakota, but the crew patched it, and Captains Albert W. Stevens and Orvil A. Anderson took their ton of instruments to the unheard-of height of 72,395 feet—13.71 miles—an altitude that was to stand as a record for 21 years. More important, its data gave future spacemen their first accurate knowledge of the black void above 96 percent of the atmosphere.

Bathysphere Reaches Record Depth

The previous year the Society under Gilbert Grosvenor had backed man's deepest descent in the sea, the William Beebe Bathysphere Expedition, whose record depth of 3,028 feet was to stand for 15 years.

Who can say to what extent these achieve-

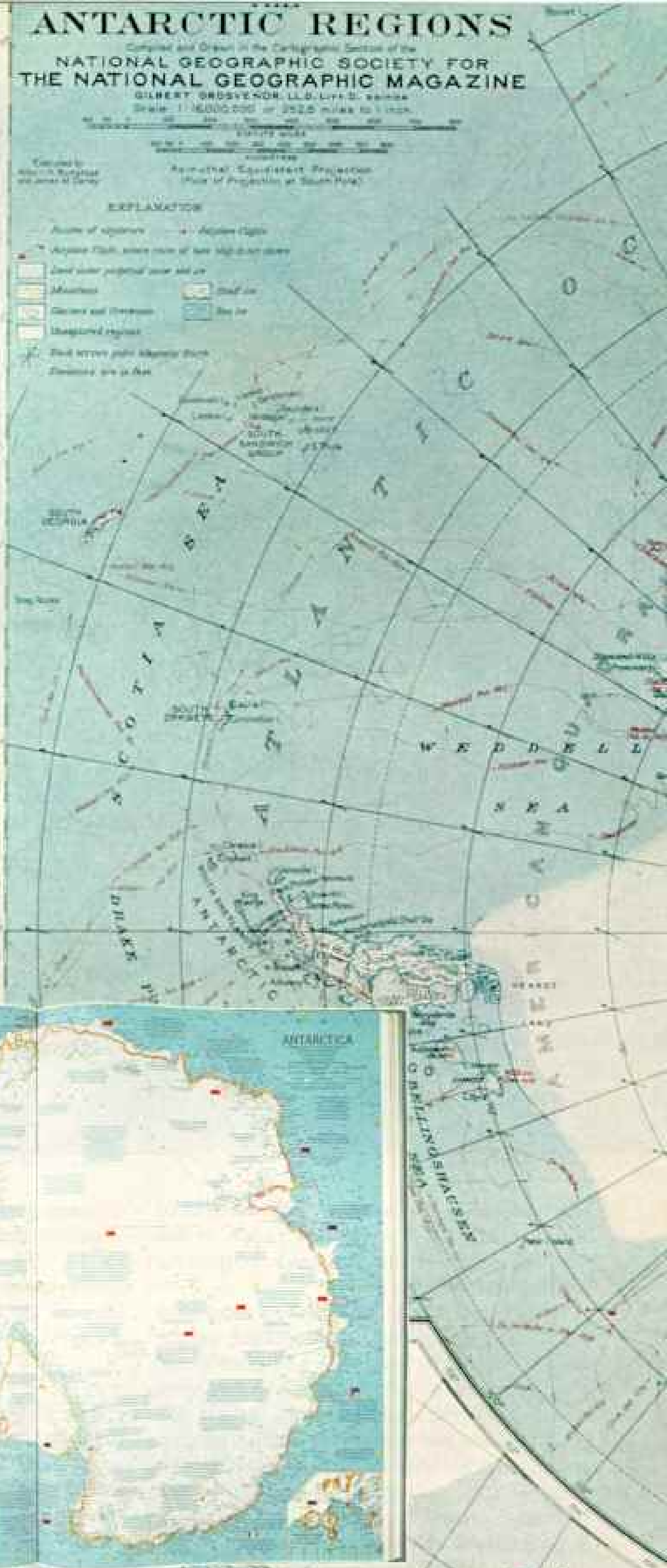
"I think I'll try to clear up some of these blank spaces."

ADMIRAL BYRD

"A map is the greatest of all epic poems," Dr. Grosvenor once said. "Its lines and colors show the realization of great dreams." The GEOGRAPHIC's Antarctic Regions Map of 1932 proved no exception. It reflected the pioneering of Rear Adm. Richard E. Byrd, who had set out for the South Pole in 1928 on an expedition supported in part by the U. S. Navy and the National Geographic Society. Pushing back the frontiers of polar space, he established Little America, made the first flight over the South Pole, and named a trail and a mountain range for Dr. Grosvenor. True to the resolve written on the map, Byrd did more than any other one man to fill in the continent's blank spaces, as shown on the Society's present map (below).

With General of the Army George C. Marshall (inset, center), Admiral Byrd congratulates Dr. Grosvenor on winning the U. S. Navy's Distinguished Public Service Award (page 481).

ROBERT F. SARGENT (UPPER RIGHT) © N.G.S.




POLAR
PLATEAU
QUADRANT
Dear Bert,
Here is your mountain Range
and the Grosvenor trail. With
these go my affectionate regard
and appreciation and congratulations
for producing this splendid map.
Dick Byrd
P.S. I think I'll try
to clean up some
of these blank spots
REB

ments helped buoy the Nation out of the slough of depression—especially the flight of the stratosphere balloonists, whose voices from the edge of space came clearly into millions of homes by nationwide network radio?

It was during the depression, too, that Dr. Grosvenor launched a major publishing project over the spoken or unspoken protest of virtually every member of the staff. At his Wild Acres home in Washington's Maryland suburbs, he had found delight in the presence of birds and learned to identify most of the species bound up and down the Atlantic flyway. Now he set out to bring his readers every major species of North American bird, complete with a color portrait.

"Birds, birds, birds, Dr. Grosvenor's birds," sighed many a member of the staff as "Woodpeckers, Friends of Our Forests," followed "Crows, Magpies, and Jays," and the series continued with several such articles a year. But Dr. Grosvenor persisted, and the enthusiastic reaction of members vindicated his judgment. Many found in the feathered world around them an interest to last the rest of their lives. And eventually the plates made possible an outstanding two-volume *Book of Birds*, now long since a collector's item.

In Wartime, an S O S for Bird Books

During World War II Dr. Grosvenor received a strange S O S from Gen. Dwight D. Eisenhower in Africa. He needed the Geographic's *Book of Birds!*

Bird books in the midst of a war? For whatever mysterious military purpose, Dr. Grosvenor promptly sent a set.

Long afterward General Eisenhower smilingly gave him the explanation. British Gen. Sir Alan Brooke (later Field Marshal Viscount Alanbrooke), Chief of the Imperial General Staff, was an ardent bird lover and had mentioned his hope of adding the Geographic's famed *Book of Birds* to his library.

WILLARD R. CULVER (RADIO), EISENHOWER © N.G.S.

DISTINGUISHED SERVICE MEDAL, 1948
THEODORE ROOSEVELT ASSOCIATION

SAMUEL FINLEY BREESE MORSE MEDAL, 1956
AMERICAN GEOGRAPHICAL SOCIETY

EDWARD HANNIGAN, U. S. CAMERA PUBLISHING CORP.

For "leadership in the widespread use of color photography editorially," Dr. Grosvenor accepts for the NATIONAL GEOGRAPHIC MAGAZINE a 1951 U. S. Camera Achievement Award medal, presented by famed photographer Edward Steichen in Rochester, New York.

Three Geographic generations vote in a National Press Club election in Washington, D. C.: Gilbert Hovey Grosvenor, who took pride in having been a member since 1910, Melville Bell Grosvenor, and Gilbert Melville Grosvenor.

Medals of honor from kings and commoners (from far left to right, and up) flash a code of appreciation for "distinguished service in international affairs," for "spreading the awareness of the practical value of geography," for "furtherance of geographic science," for "services to the cause of humanity," for cooperation in expeditions that have "covered the world," for giving "more encouragement and assistance to exploration and explorers than anyone in history," for "services to the cause of Norway," and for "outstanding service to geography."

ROOSEVELT MEDAL, 1945
BOARD OF TRUSTEES, NATIONAL GEOGRAPHIC SOCIETY

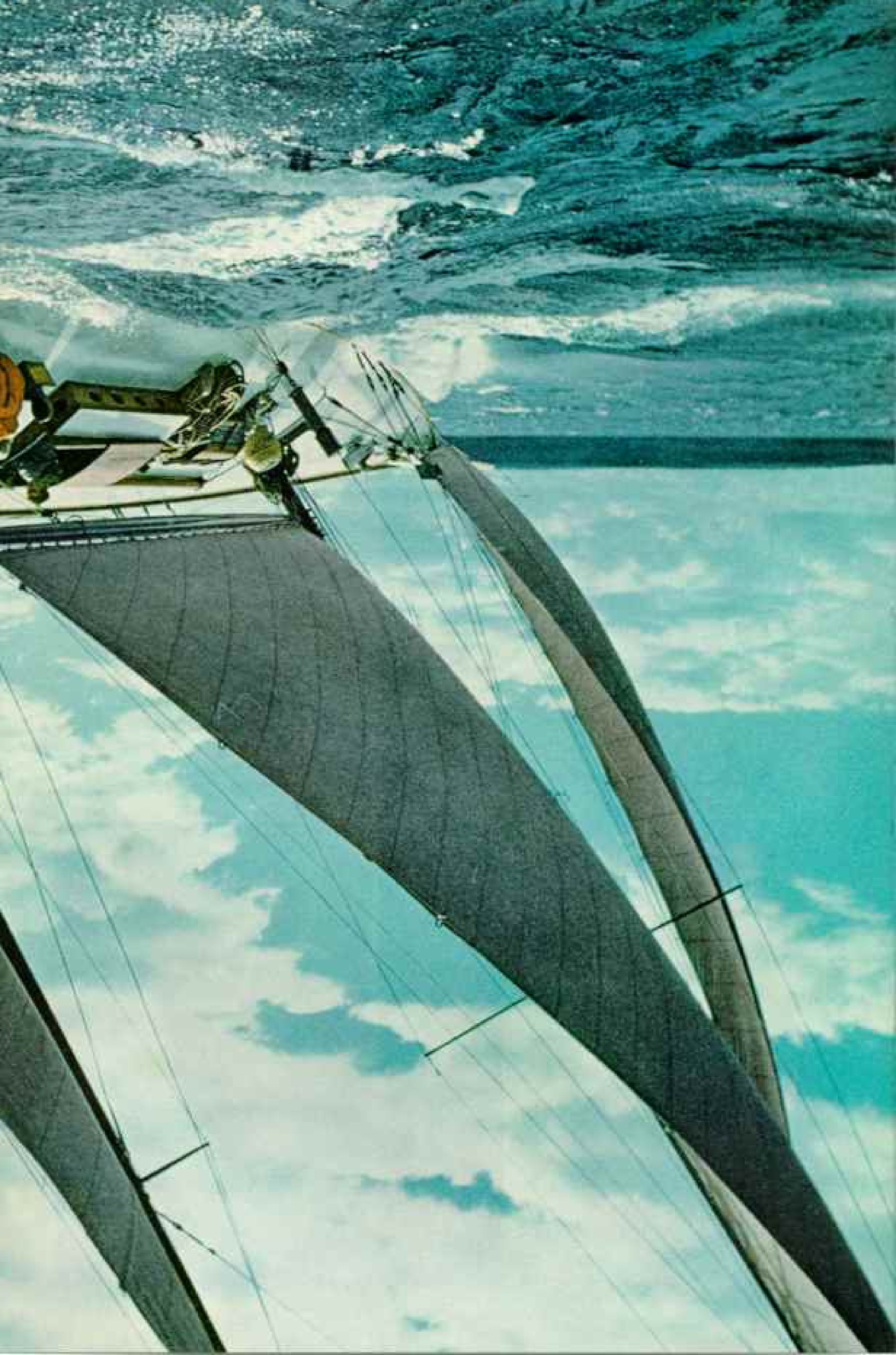
COMMANDER, ORDER OF ST. OLAV, 1949
KING OF NORWAY

EXPLORERS MEDAL, 1954
EXPLORERS CLUB

GRAND OFFICER OF THE LEGION OF HONOR, 1938
PRESIDENT OF FRENCH REPUBLIC

COMMANDER, ORDER OF LÉOPOLD II, 1954
KING OF BELGIUM

DISTINGUISHED PUBLIC SERVICE AWARD, 1959
U. S. NAVY



"WE HAD THE TIME OF OUR LIVES," *wrote Gilbert Grosvenor of summer cruises off Nova Scotia. His 54-foot yawl,* Elsie, *her port rail awash, sails off to another blue-water adventure. Alexander Graham Bell Grosvenor (inset), now a commander in the U. S. Navy, skippers for his grandparents in 1948.*

At the age of 89, Dr. Gilbert Grosvenor (fifth from right) participates in a meeting of the National Geographic Society's Board of Trustees.

Clockwise from left: Melville Bell Grosvenor, the Society's President and Editor; William McChesney Martin, Jr., Chairman, Board of Governors, Federal Reserve System; Caryl P. Haskins, President, Carnegie Institution of Washington; Thomas W. McKnew, Vice Chairman (now Chairman) of the Society's Board; Crawford H. Greenewalt, Chairman of the Board, E. I. du Pont de Nemours & Company; Leo Otis Colbert, Rear Admiral, U. S. Coast and Geodetic Survey, Ret.; Lloyd B. Wilson, Honorary Board Chairman, Chesapeake & Potomac Telephone Company; Emory S. Land, Vice Admiral, U. S. Navy, Ret.; Conrad L. Wirth, former Director, National Park Service; James H. Wakelin, Jr., former Assistant Secretary of the Navy for Research and Development; H. Randolph Maddox, Vice President,

By obliging him, Ike hoped to make a friend and cement Anglo-American relations.

From another of America's top wartime leaders came a grateful message. In a letter to Dr. Grosvenor, Adm. Chester W. Nimitz reported that a Geographic map had saved him and 10 comrades by guiding them to a safe landing when the pilot became lost while they were flying to Guadalcanal.

After the war, those of us who were called often to Dr. Grosvenor's office found a little difficulty in making ourselves heard.

"Speak up, please. Don't mumble so," he would say. And slowly it dawned that he was growing deaf.

Especially sad and ironic, it seemed, for deafness to strike again in this family. Dr. Bell had always described himself not as the inventor of the telephone but as "a teacher of the deaf." His wife, Mabel Hubbard Bell, Mrs. Grosvenor's mother, had been profoundly deaf since the age of four, overcoming the handicap by her keen intelligence, observation, and skill at reading lips.

Dr. Grosvenor, too, refused to let "a little deafness" stop him, and in 1953, at 77, he went to the North Pole.

"It happened this way," recalls Dr. Thomas W. McKnew, then Secretary of the Society and now Chairman of the Board. "I was fortunate enough to be invited to accompany an Air Force group on a plane that was to fly over the North Pole. Some risk was involved, and I was not at all sure that Dr. Grosvenor

American Telephone & Telegraph Company, Ret.; Frederick G. Vosburgh, Society Vice President and Associate Editor; Louis B. Wright, Director, Folger Shakespeare Library; Hugh L. Dryden, Deputy Administrator of NASA; Earl Warren, Chief Justice of the United States; Robert V. Fleming, the Society's Treasurer, Advisory Chairman of the Board of Riggs National Bank and Chairman of its Executive Committee; Gilbert H. Grosvenor, the Society's Chairman of the Board; Melvin M. Payne, its Executive Vice President and Secretary; Leonard Carmichael, Society Vice President; Alexander Wetmore, Research Associate, Smithsonian Institution. Not present: Curtis E. LeMay, then Chief of Staff, U. S. Air Force; Benjamin M. McKelway, Editorial Chairman, *Washington Star;* Juan T. Trippe, Chairman of the Board, Pan American World Airways; Laurance S. Rockefeller, Chairman of the Board, Rockefeller Brothers, Inc., and President, Jackson Hole Preserve.

would grant me permission to go. But when I told him of the invitation, he leaped to his feet like a boy and exclaimed, 'Oh, good! Do you think you can get me an invitation too?' "

It was duly arranged, and Dr. Grosvenor personally made the first series of photographs ever taken pinpointing the North Pole.* It was typical of him that he was not content to make this merely a sentimental journey, an old man's imaginary rendezvous with his friends of the young years, Peary and Byrd. To him it was a working assignment, to be covered well—and with pictures—for the magazine.

*See "We Followed Peary to the Pole," by Gilbert Grosvenor and Thomas W. McKnew, NATIONAL GEOGRAPHIC, October, 1953.

Succeeding his grandfather on the Board, Gilbert M. Grosvenor, right, Senior Assistant Editor, talks with James E. Webb, Administrator, National Aeronautics and Space Administration, who fills the vacancy left by the death of Dr. Dryden.

"**For a human being,** I think, to have the dreams of his heart govern his life is rewarding," said Gilbert Grosvenor in his last year. Always he let his heart-dreams prevail, and treasures in his office as it looked 20 years ago testify to rewards. He sailed the *Elsie*, he saved the Big Trees, he loved the birds, and he sent the blue-brown-and-green Geographic flag to the ends of the earth, to the stratosphere, and to the depths of the sea.

In May of 1954, he retired as President and Editor in favor of Dr. La Gorce. But as Chairman of the Board of Trustees, he continued to give his colleagues the benefit of his wisdom and editorial judgment.

His eye for the interesting and important was still as keen as ever. When President Kennedy met death by assassin's bullets, Dr. Grosvenor noted an eloquent address in which President Calvin H. Plimpton of Amherst recalled the President's visit there only four weeks before. Our 88-year-old Chairman promptly brought this material to the Editor's attention, and it added greatly to the interest and historical value of our March, 1964, article recording the world's tribute to the murdered President.

He was always eager for new experiences, as shown in this anecdote by a loved and devoted co-worker, Executive Vice President Melvin M. Payne:

"One windy fall afternoon, he and Melville and I had an appointment downtown, and we decided to walk back to the office. He was wearing his hearing aid, which he whimsically called 'Little Sister.'

"As we crossed 15th Street at I., we were stranded on an 'island' by the changing traffic lights and stood there while buses, cars, and trucks whizzed by. He turned to us with a little smile and said, 'You young fellows don't know what you're missing! With my Little Sister I can hear all these street noises and the sound of the wind so much better than you can!'"

Still Planning Articles in His 90th Year

On the day after Christmas, 1964, Dr. Grosvenor lost his beloved wife and the Society lost its first lady—granddaughter, daughter, wife, and mother of Presidents of the Society.

In work for the Society, his other love, he found the best antidote to his grief. Always one of the country's foremost conservationists, he had been instrumental in establishing the National Park Service 50 years ago, and in his last summer he helped us with plans for articles on its golden anniversary.

But as the summer waned so did his strength. When the Canada geese and whistling swans flew south over the Bras d'Or Lakes bound for the Chesapeake and points south, Gilbert Grosvenor could not go. But he could still write letters, and he answered many of those he received when he reached the age of 90 last October 28.

He still retained his sense of humor, even when the joke was on himself. From Nova Scotia he penned this note to the late George Dixon, who in honor of the approaching birthday had written a column gently joshing him for "publishing pictures of ladies in far-off climes whose ideas of modesty did not—at the time—coincide with our own":

Dear Friend:

I want to thank you for your kind present for my 90th birthday. I have greatly *relished* your story about me in the Post Oct 11. You have a warm heart, a keen sense of humor, a most charming and unique talent as a writer. I have enjoyed your column in the Washington

PAINTING BY CHARLES BITTINGER © NATIONAL GEOGRAPHIC SOCIETY

Post for years. I congratulate you on your success. With best wishes and warm appreciation of your kindness to me.

Yours sincerely
Gilbert Grosvenor

Christmas came, the first without his wife, and Dr. Grosvenor grew a little more frail. By February the end was near.

His son and daughters gathered. He told them he knew his life span was ending and calmly to each he said goodbye.

Just before he took the nap from which he did not awake, a daughter heard him mention a recurring dream. It seemed he was just setting off on a journey or coming into port. THE END

In honor of a life of service to education, the Gilbert H. Grosvenor Memorial Fund has been established at Amherst College. Its purpose: to aid and encourage future scholars to achieve excellence in the fields of knowledge exemplified by his career.

Gifts to this fund are tax-exempt and should be addressed to Dr. Calvin H. Plimpton, President, Amherst College, Amherst, Massachusetts 01002.

Sun-warmed gems, the peaceful Îles des Saintes fleck a tropic sea. They lay within earshot of cannon fire when, in 1782, Britain secured her power in the West Indies by defeating a French fleet. Hilltop Fort Napoleon commands Bourg des Saintes. *Finisterre* (inset) cleaves history's wake as she cruises the Leeward Islands.

A Fresh Breeze Stirs the Leewards

By CARLETON MITCHELL

Illustrations by National Geographic photographer WINFIELD PARKS

TO A LANDSMAN, all water is alike. Yet as *Finisterre* surged over a white-capped blue roller, formed in the vast reaches of the Atlantic and now on its way to foaming oblivion in the Caribbean, I had anew the sailor's feeling that every stretch of ocean in the world is different, with its own characteristics, moods, and history.

Fresh trade winds drove my little vessel in the wake of questing ships whose passages for five centuries had woven the romantic tapestry that is now

KODACHROMES © NATIONAL GEOGRAPHIC SOCIETY

Links in a chain across the Caribbean gate, the Leeward Islands paradoxically lie to windward, or upwind, of the Windward Islands; trade winds reach them from the northeast. British officials named the groups when they divided them for administrative purposes. Columbus discovered the Leewards in 1493 on his second voyage to the New World. Later came colonists, adventurers, and pirates. On a trade route of sailing ships bound from Europe to the Americas, the islands prospered. British, French, Spanish, and Dutch battled to possess them. Now the Leewards cater to throngs of sun-seeking visitors.

Spindrift whipped from foaming rollers pelts author Carleton Mitchell as he struggles to secure gear. *Finisterre's* master starts his Leeward voyage in the Îles des Saintes. He described his cruise through the Windward Islands in the December, 1965, NATIONAL GEOGRAPHIC.

PHOTOGRAPH BY JAMES L. STANFIELD © N.G.S.

the West Indies. Astern faded the rugged mountains of Dominica; over the bow lifted Guadeloupe and its smaller dependencies, and beyond beckoned all the rest of the Leeward Islands.

Columbus made the Sabbath landfall of his second voyage in these waters on November 3, 1493. And, on April 12, 1782, British Adm. Sir George Rodney caught the French fleet under Admiral Comte de Grasse and won the Battle of the Saintes, a naval action that firmly established British power in the Caribbean.

For me, a new cruise was beginning. "The West Indies have changed," I had been told before taking *Finisterre* to the Caribbean. But in weeks of sailing the Windwards and poking into harbors from Grenada to Dominica, I had found life basically the same as on my visit in *Carib* 18 years before.* Those slow-paced planter isles still depended on growing and shipping products of their volcanic soil to northern markets. Tourism had not supplanted the colonial pattern, nor had air transport introduced the tempo of the 20th century.

Tourists Come From Neighboring Isle

As soon as we dropped anchor off Bourg des Saintes, in the Leewards, I saw the difference. I remembered this village in the Îles des Saintes, a dependency of Guadeloupe, as a scattering of neat, small dwellings hidden among palms above a crescent of beach unbroken except by fishing boats. Now I stared at a modern hotel and a cluster of cement villas reminiscent of the mushrooming Mediterranean Riviera.

Going ashore to clear *Finisterre* into French waters, I found the answer. "We now have *le tourisme*," explained a gendarme's wife.

"But who comes?" I asked.

"In summer, the Guadeloupéens," she told me. "They crowd us, especially on weekends."

In winter, when frost and snow chill the cities of the United States and Europe, only hours away by jet, travelers turn to that happy combination offered by most of the Leewards—hot sun and white sand beaches. It was my first contact with these "fun-in-the-sun" islands, where tourism has become the fastest-growing local industry.

To me the Leewards, which include Dutch, French, and British territories, seem more a part of a world on the move than the tranquil Windwards. Nowhere was this more apparent than on Guadeloupe. As we tied up to the yacht club pier in the center of Pointe-à-Pitre's harbor, traffic rumbled along a teeming street astern,

*Veteran yachtsman Carleton Mitchell told the story of an earlier voyage through these islands of the sun in "*Carib* Cruises the West Indies," GEOGRAPHIC, January, 1948.

and *Finisterre* lay dwarfed by cargo ships.

"We build for the future," said Umberto Petrelluzzi, member of a large and dynamic Italian family of cosmopolitan Guadeloupe. Umberto placed me under the able guidance of a married daughter, Marily Gouyé.

Everywhere in Pointe-à-Pitre I found bulldozers at work—tearing up streets, moving houses, scraping away hillsides. Tall new apartments gleamed in the sun, and a new industrial zone, with modern docks, was rising beyond the present port (pages 496-7).

Tidal Channel Creates a Double Island

Finally we came to a community of small houses laid out in string-straight streets ending at the seashore.

"This village is officially named Lauricisque," Marily told me, "but it is usually called 'Citée Transit,' because people live here on their way from one place to another. These houses, the best of the old slum dwellings, have been moved from the condemned areas to make way for new buildings. While here, waiting for new homes to be built for them, the people become acquainted with modern things they never had before."

I entered a small shop. A newly installed electric light shone over the counter, illuminating canned goods and soft drinks on the shelves. A polished brass spigot gleamed over a basin in the corner.

"Before, I had only candles or an oil lamp," the proprietor said, "and carried water in buckets. Here, we now have schools for the children, and the old folks are learning, too."

Guadeloupe, an overseas department of France, is not one island but two. On the chart it looks like a lopsided butterfly joined by a narrow waist, which the Rivière Salée cuts (painting, page 498). The "river" actually is a tidal channel.

This division made a perfect transition for the second phase of our winter's cruise. The western wing, called Basse Terre, resembles the Windward Islands—a complex of mountains, culminating in the 4,813-foot volcanic peak of Soufrière. To the east, Grande Terre juts almost pancake flat into the Atlantic; like many of the Leewards, it has scalloped white sand beaches protected by fringing reefs.

Bananas and cacao grow on the upland plantations of Basse Terre, while its neighbor produces a crop of sugar cane—and lately, tourists. At a hotel so modern that it reminded me of an airport terminal, bikini-clad girls bronzed around a curving pool, while water skiers wove patterns offshore.

Like the other isles, Guadeloupe has been a melting pot. For two centuries it was fought over in the wake of Europe's political struggles. In 1794 it mirrored the Reign of Terror. A guillotine was erected in the square that overlooks the harbor where *Finisterre* lay. By the Terror's end, 1,800 had died.

Among the national groups contributing to the flavor are East Indians, imported after the abolition of slavery to work the fields. They have their own customs, retaining vestiges of Hinduism, as I saw one Sunday with

Guadeloupe puts on a happy face for carnival. It may be the face of a jeweled Josephine, a Viking princess, a masked and mustachioed pirate, or a queen of carnival candidate. With the bells of Christmas barely stilled, costumed Guadeloupéens appear for weekend warm-ups —singing, dancing, and masquerading. In good-humored buffoonery, revelers (opposite) don dark glasses and cameras to spoof tourists ashore from a cruise ship.

Processions swirl through the streets as people build up to a proper pitch. Steel bands hammer out lively melodies on ping-pongs, booms, cello pans, and guitar pans —all instruments made from discarded oil drums. Minstrels sing the sometimes sad, sometimes joyous calypso of the Caribbee isles in a patois of mispronounced French, African phrases, and words borrowed from English and Spanish and from the Carib Indians.

In the final frenzy of Shrove Monday and Tuesday, riotous merrymaking stretches round the clock. Ash Wednesday drops a pall: Celebrants in black and white parade behind corteges, wailing that carnival is dead. Mourners dance with torches and burn the spirit of carnival in effigy. Then the devout quiet of Lent begins.

Marily Gouyé. Near the town of Capesterre we came on a blue-white-and-red pole topped by a flag marked with strange symbols.

"It is the temple of Changuy," Marily explained. "I know the chief priest. If he gives permission, we may watch."

We found the priest near an image of Mandira, the warrior god, guarding the entrance. In front of Mandira stood a slim brown girl dressed in white. Her unbound hair fell almost to her waist. Her feet were bare.

"The family prays to find the girl a husband," Marily whispered. "She is past the usual age of marriage, and no one has asked for her hand."

As we watched, roosters and goats wearing garlands of flowers were brought before the girl. Each was blessed in turn and its head cut off with a single flashing sweep of a cane knife. Between sacrifices the priest anointed the blade with lime juice and rum. Three drummers pounded a rhythm gradually increasing in volume and tempo. When the last animal lay kicking in the grass, the girl and the priest entered the temple.

Almost hidden in clouds of incense, the statue of a goddess, Malieman, sat on a throne covered in pink satin. Through an open window I could see that she wore a bride's veil and carried a bridal bouquet of paper flowers. Before her the girl waited patiently while the priest chanted a prayer.

A cymbal joined the throbbing drums. Suddenly the girl bowed deeply to the goddess and placed at her feet a single blossom.

Now the music became almost a triumphal

Pulsing heart of Pointe-à-Pitre: Clamor of commerce sounds along the waterfront from which Guadeloupe's biggest city grew. Behind the tangled masts of broad-hulled sloops, vendors shout the virtues of bananas, papayas, vegetables, and conchs for chowder. Drums and crates clatter as men stow freight for outlying islands. At this scene of daily hubbub, French revolutionaries erected a guillotine in 1794 and the Reign of Terror claimed Guadeloupe's planter aristocracy.

High-browed dolphin, its flashing hues dulled by death, goes to market. The hard-fighting fish finds eager buyers among Guadeloupéens. Island fishing methods gradually improve with the help of a United Nations program.

EXTACHROME (RECTO) AND KODACHROME BY WINFIELD PARKS © N.G.S.

march. Balancing a wooden tray on her head, the girl walked around the low cement temple, followed by the priest and her family. Then the procession wound to a nearby shed where I could see tables and cooking fires.

"They go to eat rice and a curry made from the sacrificed animals," Marily said. "It will be a big lunch for all the friends and possible suitors. If the girl finds a husband, there will be an even bigger party."

"River" Flows From Sea to Sea

As our departure drew near, I studied charts. A passage through Rivière Salée would save us a long detour around one of the "wings" of Guadeloupe, but we would need a pilot to guide us through the reefs. Our problem was solved by a voluble young man named Jean Rey, whom I met over an apéritif at the yacht club.

"La Rivière Salée? Know it? Not many boats go through, but I know it like zat," he exclaimed, pointing to a crack in the table between us. And he proved his nautical knowledge with businesslike questions about the depth of *Finisterre*'s keel.

Like all visitors to Guadeloupe, I had been told that Rivière Salée is "the only river in the West Indies flowing between the Atlantic Ocean and the Caribbean Sea," but I found only a meandering tidal cut remindful of the Florida Everglades. Green water moved sluggishly between mangrove-tangled banks and islands, where tree roots splayed like the legs of insects. Since it ran north and south instead of east and west, it seemed to me to connect

the two bays of Guadeloupe rather than two mighty basins.

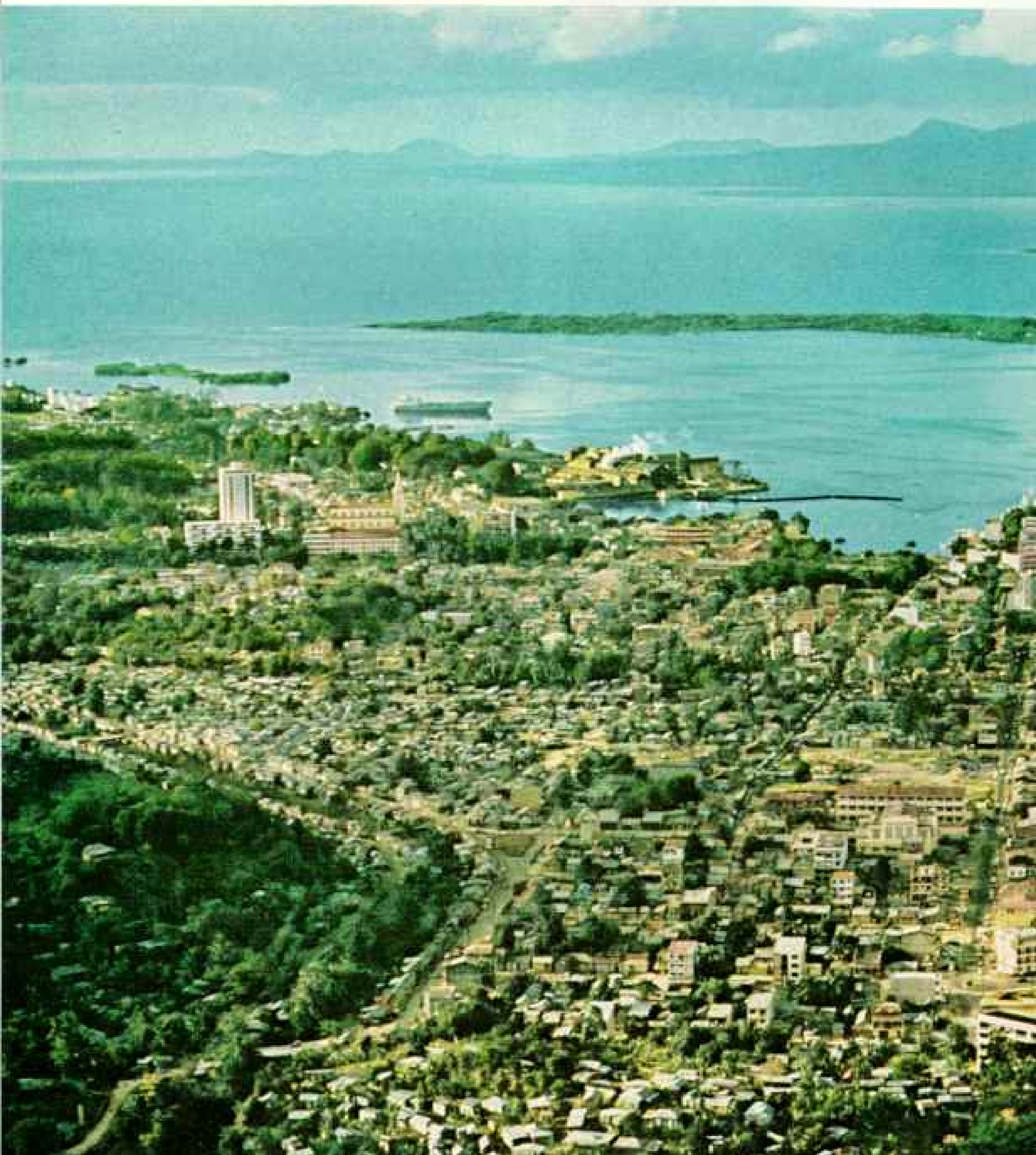
It had real reefs, though. Jean casually steered with a foot, skirting coral-fanged shallows invisible until close abeam. Just before sunset, a single reef lay ahead. Breakers sent spume trailing downwind like smoke from a forest fire. In the center was a gap where the swells lifted but did not break.

Jean pointed. "Steer through there and you can go to Iceland without hitting anything."

Tucking the fee I paid him into his swimming trunks, he dived overboard and swam to a motorboat that had followed us. Henry Davis, one of *Finisterre*'s crew, laughed. "That's what I really call 'dropping the pilot'!"

Night Passage Over a Sheet of Silver

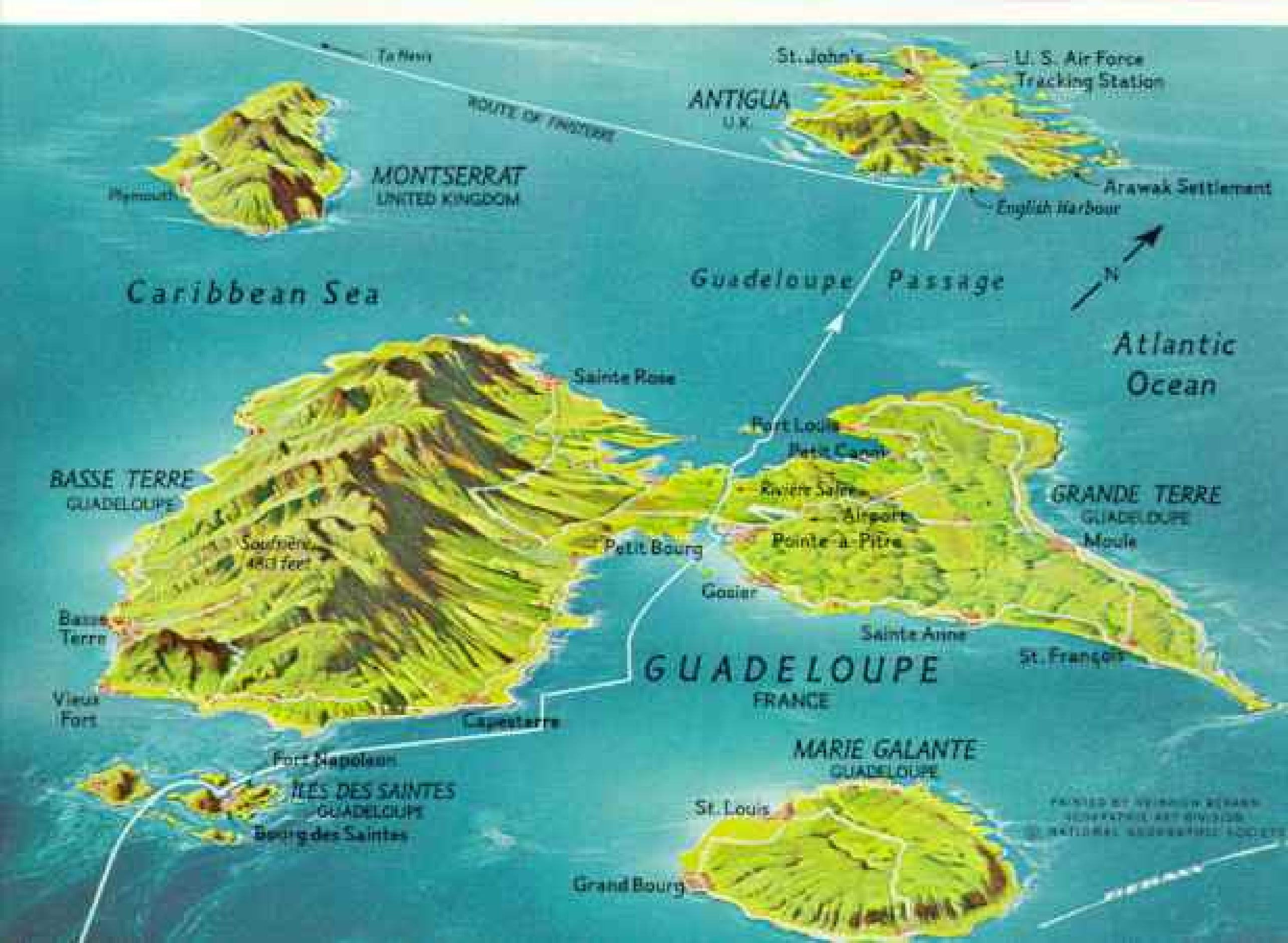
Then began a sail to remember, as we set a course due north for Antigua. When the sun dropped behind the mountains of Basse Terre, a full moon lifted over the beaches of

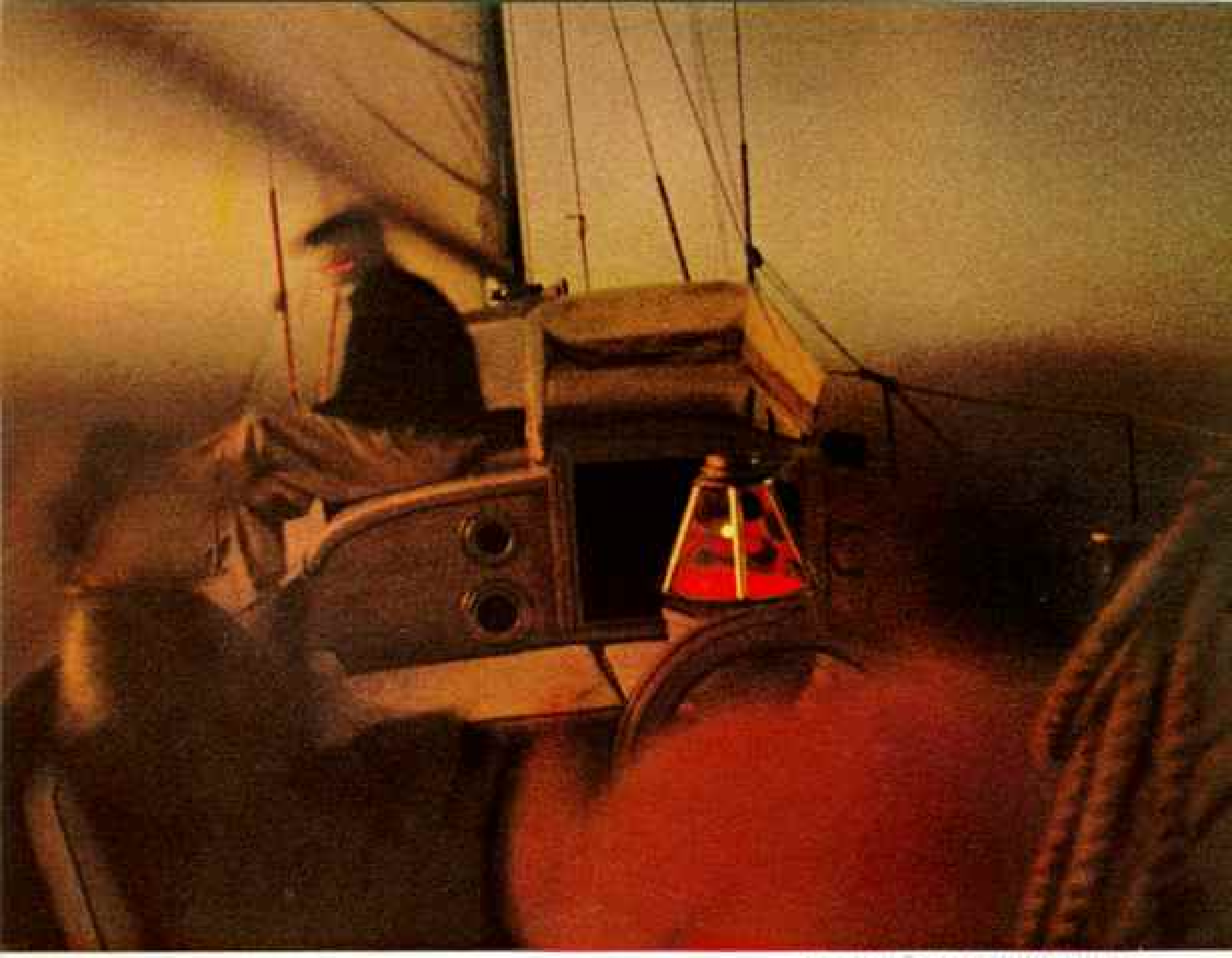


Grande Terre. The palette of the tropic sky began with shades of red and gold, fading through tones of rose to the palest lavender. As the moon climbed and brightened, it transmuted the sea into molten silver, and, after *Finisterre* came into the full sweep of the Atlantic swells, we rushed through the night with spray glittering as it blew aft.

We were going too fast. I didn't want to enter the narrow mouth of Antigua's English Harbour until dawn lighted the way; we

French city an ocean from Paris, Pointe-à-Pitre lifts modern buildings to the morning sun. Slum-dwellers among its 26,000 people adjust to modern conveniences in a "Citée Transit," while urban planners rebuild ramshackle neighborhoods. Trading sloops unload produce in the old harbor at left; ocean-going ships tie up to new wharves at right. Scudding clouds snag on mountainous Basse Terre, the half of Guadeloupe first explored by Columbus in 1493. Its name, "low land," stems from its sheltered position to leeward of pancake-flat Grande Terre (foreground).


To Nevis
ROUTE OF YACHTS
MONTSERRAT
UNITED KINGDOM
Plymouth
Caribbean Sea
St. John's
U. S. Air Force
Tracking Station
ANTIGUA
U.K.
Arawak Settlement
English Harbour
Guadeloupe Passage
N
Atlantic
Ocean
Sainte Rose
BASSE TERRE
GUADELOUPE
Soufrière
Basse
Terre
Vieux
Fort
Capesterre
Fort Napoleon
ILES DES SAINTES
GUADELOUPE
Bourg des Saintes
Port Louis
Petit Canal
Rivière Salée
Airport
Pointe-à-Pitre
Petit Bourg
Gosier
GRANDE TERRE
GUADELOUPE
Moule
Sainte Anne
St. François
GUADELOUPE
FRANCE
MARIE GALANTE
GUADELOUPE
St. Louis
Grand Bourg



EXTACHROMES © NATIONAL GEOGRAPHIC SOCIETY

By day's afterglow, *Finisterre* sails for Antigua—her compass, gleaming red in its binnacle, pointing the way. The moon lowers as the yawl waits nearly motionless (opposite, top) for first light to reveal the hidden entrance of English Harbour. Another yacht foundered on a reef that night while seeking the secluded anchorage.

Named by Columbus, the double island of Guadeloupe—plus Marie Galante, the Îles des Saintes, and three other islands—enjoys the status of a French department. Off the Saintes, British Adm. Sir George Rodney vanquished a French fleet under Admiral de Grasse, who surrendered his flagship *Ville de Paris*, finest of her day. The classic action avenged De Grasse's blockade of Yorktown, Virginia, which helped the American colonies win independence. A United States tracking station on Antigua monitors the flights of rockets fired from Cape Kennedy.

therefore flattened down the mizzen, trimmed the jib to windward, and lashed the helm hard a-lee.

Now we lay at an angle to the oncoming crests, almost without headway. Miraculously the seas seemed to smooth, and like a resting sea bird *Finisterre* swooped up and down, decks dry, the moan of wind in the rigging a lullaby. "Heaving to," as the maneuver is called, has been done since the earliest days of sail, to slow a vessel in dangerous water or to ride out heavy weather.

The three of us were a well-shaken-down crew. Henry Davis, a professional seaman, had sailed with me for many years. Winfield Parks had come along as photographer, but speedily developed into a competent hand, although he was most likely to be at the masthead or in the scuppers with a camera when the going was rough.

Finisterre, a 38-foot centerboard yawl, combines in a small package the ability to go almost anywhere with speed and comfort. Her speed was proved by an impressive record of racing victories; her comfort by such luxuries as electric refrigeration, ample bookshelves, and a hi-fi system—to say nothing of the gourmet meals that Henry cooked for us.

As the moon set and the sun climbed above the Atlantic to reverse the colors of the evening before, we could make out the narrow cut leading into English Harbour, perhaps the most moving reminder of vanished wind ships still in existence. Nelson, Rodney, and

Monument to British naval might in the golden age of sail, Antigua's landlocked English Harbour offers a snug, stormproof anchorage. Pleasure craft cluster at restored Nelson's Dockyard, where proud warships once refitted, protected by enveloping fortified headlands. A gleaming ship threads the twisting entrance through which Capt. Horatio Nelson, later the hero of Trafalgar, brought the frigate H.M.S. *Boreas* into the harbor when he was assigned to the base in 1784.

A young salt dreams of the days when pigtailed jack-tars strained at these capstans. Lines turned about the devices careened ships so that hulls could be scraped and repaired. Such facilities at English Harbour allowed ships to stay in fighting trim without returning to England for overhaul.

The Friends of English Harbour, organized in 1951 with backing from Britain's royal family, saved the yard from decay—providing a tradition-steeped haven for modern lovers of the sea.

Hood had warped their warships through the winding entrance to lie snug within, safe from hurricanes and enemy fleets, while their crews rested and their vessels were refitted. English Harbour was the key to British naval power in the Caribbean.

From the wheel, I stared in disbelief. Eighteen years before, English Harbour's buildings had been crumbling ruins and *Carib* had shared the anchorage with a single native sloop. Now a forest of masts surrounded the stone quays, and on going ashore I found the dockyard looking much as it must have when pigtailed seamen walked there.

I knew that The Society of the Friends of English Harbour had been formed in 1951 to save the yard from decay, and that contributions had come even from the British royal family. Volunteers from visiting navy ships had given up their leave to work. But I had not expected such an amazing transformation. Now John Christian, supervisor of the dockyard, refreshed my memory:

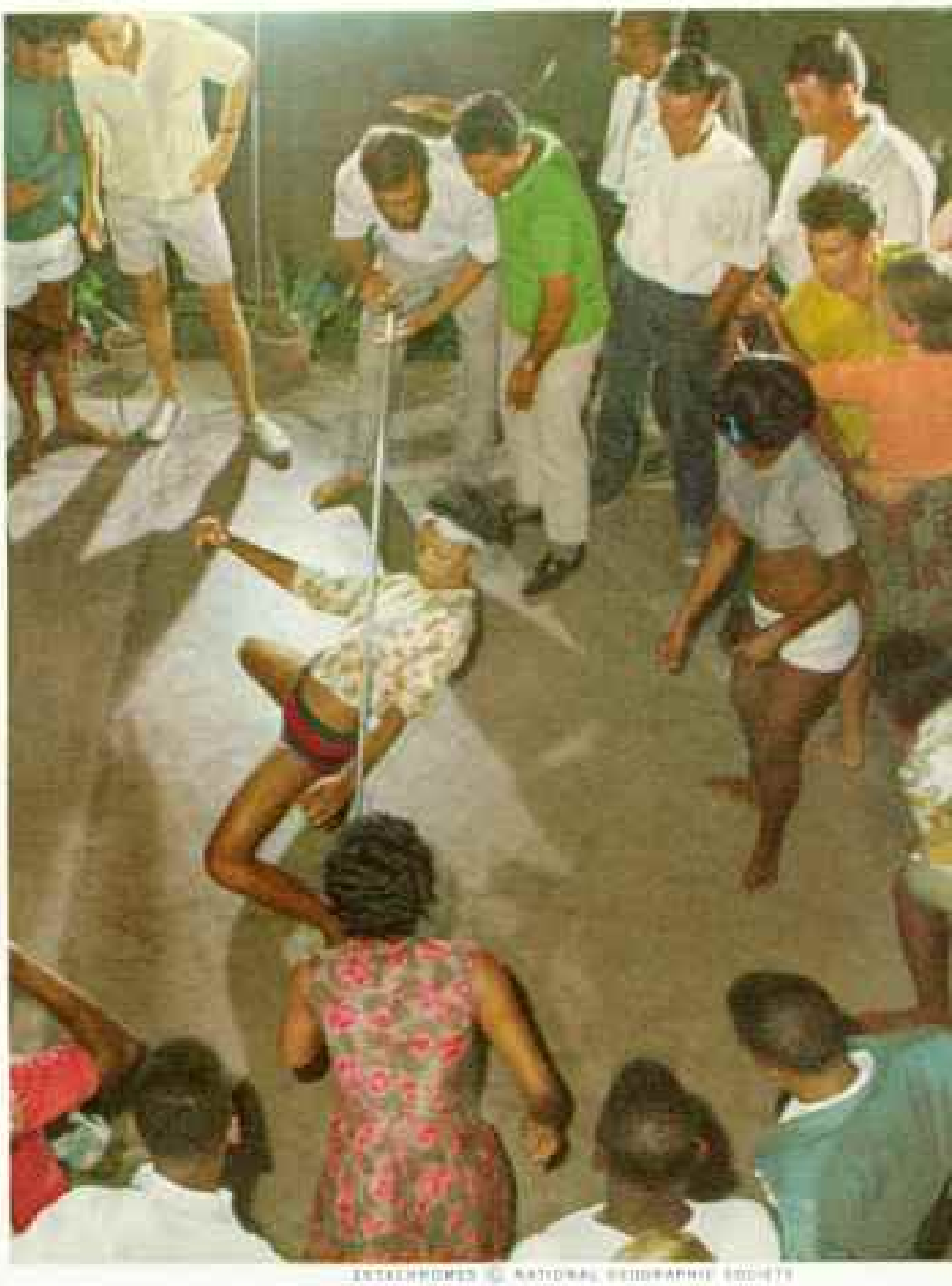
"By searching Admiralty records in London, the original plans of these buildings were unearthed. We were able to find carpenters retaining the skills of 18th-century shipwrights. In our reconstruction, even the beams were hewn by hand with adzes, and pegged with wood instead of being nailed."

As the abandoned naval base was reborn, it became a yachting center, partly because of its discovery after the war by retired Comdr. Vernon E. B. Nicholson, Royal Navy.

"I sailed out with my family from England in the schooner *Mollihawk* for a holiday," Commander Nicholson said as we sat in his office, masts visible through every window, "but we were also looking for a nugget. In English Harbour we felt we had come upon something terrific, so we offered *Mollihawk* for charter. We were besieged. The next year we added a second vessel, a ketch. Now I go to the Mediterranean to recruit vessels, and we operate a fleet of about forty yachts."

Despite English Harbour's martial history, only once was a shot fired in anger, and only once was an attack attempted.

Hoping someday for a ship of his own, a lad of Antigua rafts across English Harbour, towing his toy sloop astern. Other youths (below) chase goats—one outlandishly costumed—in a race witnessed by guests at the Admiral's Inn, once a naval workshop and store. Both the best-dressed and the swiftest beasts win prizes. A limbo dancer (opposite), in time with the rhythm of a steel band, defies gravity to wriggle beneath a rod. Lower and lower inches the bar, forcing the performer to arch shoulders nearer the floor.



ENTREPRISES © NATIONAL GEOGRAPHIC SOCIETY

In 1798 two young officers—Thomas Pitt, the second Baron Camelford, and Charles Peterson—got into an argument as to who had the duty that night. One had to row guard in the harbor, and both wanted to go to a ball. Each claimed to be the senior officer and ordered the other to remain on the station.

After a furious argument, Lord Camelford demanded for a final time if Lieutenant Peterson still refused to obey. Upon his reply, "I do!"—Lord Camelford shot his rival dead. Tried and acquitted, the young peer later ended a turbulent career by being killed in a duel.

The assault attempt took place in 1803, when the governor of French Guadeloupe sent 700 men in 13 schooners to carry out a surprise attack. A cruising frigate, H.M.S. *Emerald*, met the fleet in the channel, captured three vessels, and sent the rest scurrying.

In such surroundings, it is easy to recapture the past. One day as I walked beside the Officers' Quarters with John Christian, he said musingly, "It is not surprising that people who can see ghosts see them here. I have, for the first time in my life. Late one afternoon I put down a book, and before me stood an officer dressed in the uniform of Nelson's day—dark-blue cutaway coat, white stock, pigtail and all. He was in profile, and I saw him put his hand to his face and cough nervously. The poor chap looked exactly like a man preoccupied with problems, about to have an unpleasant interview.

"Later I found from old drawings that when Nelson was stationed here, between 1784 and 1787, he lived in a house on the site of the present Officers' Quarters. So I'm convinced I saw a ghost who came to be ticked off by the boss!"

How to Find an Indian Encampment

Antigua's greatest modern assets are its beaches and sunshine. While Dominica, 100 miles to the south, seems to have a pipeline to the sky, with 360 inches of rain annually in the uplands, Antigua has only 42. "We have 23 hotels and guesthouses," a businessman told me in St. John's, the capital city, "and more building every year."

Time seems to get scrambled on Antigua. Over its U. S. tracking station, a key link in the Atlantic Missile Range, rockets pass on

Mother colony gave birth to pirates: St. Christopher sheltered both English and French in the 17th century, as rival homelands planted their first settlements in the West Indies. When Spaniards drove them away temporarily, some of the refugees turned *boucanier*—the buccaneers of the Spanish Main. Official documents use the formal names of British St. Christopher and Dutch St. Eustatius. Islanders know them simply as St. Kitts and Statia. With slave labor English planters coaxed fortunes in sugar cane from the volcanic soils of St. Kitts and Nevis. When the future American patriot and statesman Alexander Hamilton was born on Nevis in 1755, the island's wealth, lavish

their way toward orbit or splash-down.* Yet, practically in sight of this symbol of man's future, vanished Antiguans lived in pastoral simplicity. Fred Olsen, a retired chemist and research engineer whose interest now centers on the original inhabitants, took me to the site of an Arawak settlement he had found.

"I asked myself what a tribe would want in an encampment, and decided there were five requirements," he said as he stood over an excavation. "First, they would need an offshore reef that would provide good fishing. Second, a sand beach for pulling up canoes. Third, a source of fresh water. Fourth, a hummock to shelter them from the wind. And fifth, flat land for growing manioc, from which cassava cakes were made.

"When I found a site combining those features, I dug, and came on this kitchen midden. Radio-carbon tests place the upper deposits at about A.D. 1100, but deeper layers go back another 700 years."

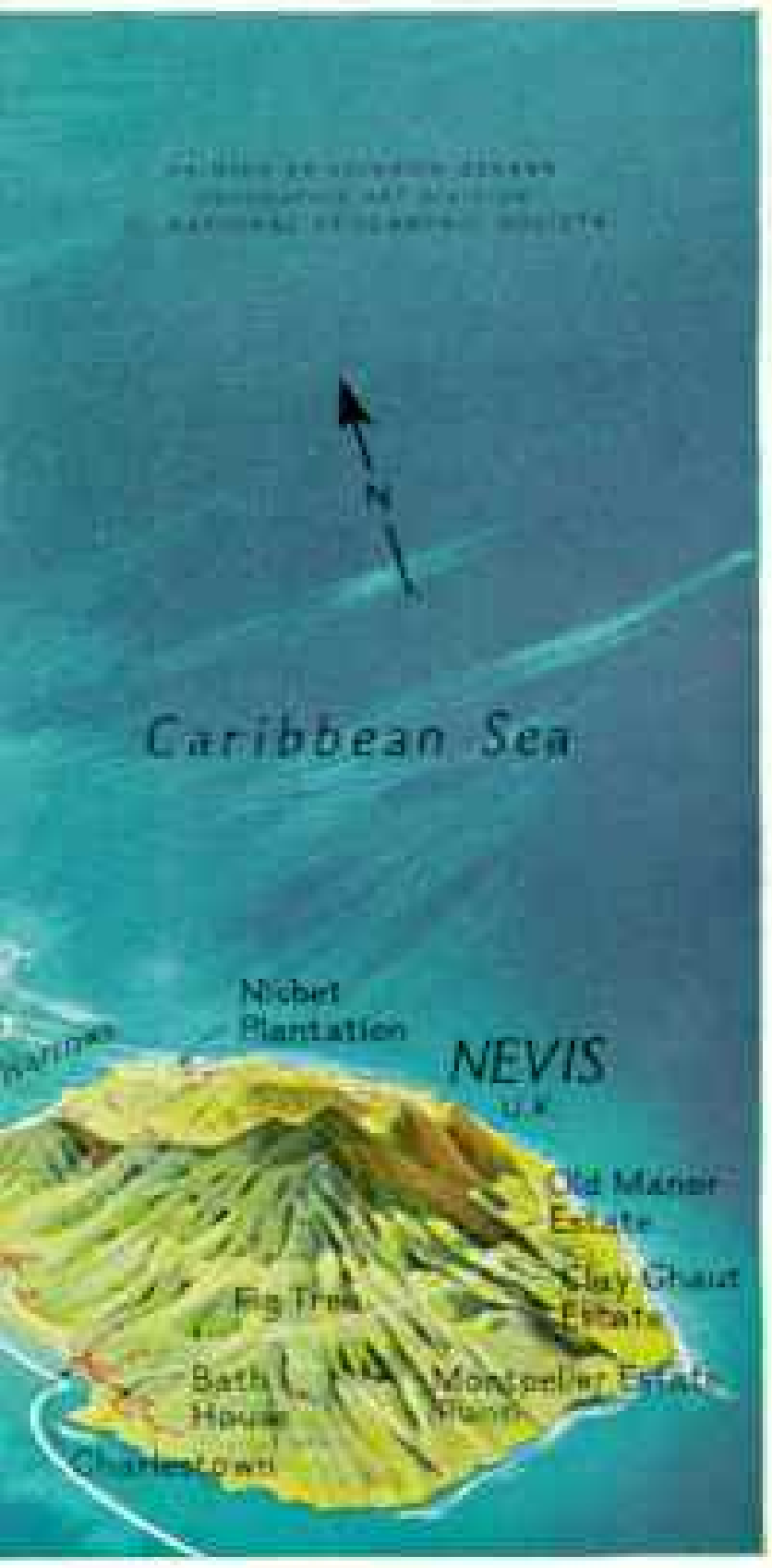
Leaving English Harbour, we sailed almost west for Nevis, putting the wind astern. Through the afternoon Nevis lifted its peak, enveloped in a cream puff of cloud. As we sailed close in the soft light before sunset, we saw a checkerboard of green and yellow fields on the slopes, dotted by cylindrical stone towers that had once been windmills for crushing sugar cane.

Sugar Sweetened Life on Nevis

I think of Nevis more than any other island as symbolizing the sugar economy of the 18th and 19th centuries, an era that ended with Britain's abolition of slavery in 1834. It gave Nevis a way of life that gained

*See "Cape Canaveral's 6,000-mile Shooting Gallery," by Allan C. Fisher, Jr., GEOGRAPHIC, October, 1959.

scale of living, and beauty had earned it the title "Queen of the Caribbees." Today, crumbling manor houses stand in mute testimony to its former glory; empty stone towers, once windmills for crushing sugar cane, dot its cloud-misted mountains.



Now an artist's studio, the last sugar mill to operate on Nevis rises behind flaming poinsettias and bougainvillea mixed with plumbago. A working model beside it shows how the mill looked until 1940. Inside, a workman poses for Miss Eva Wilkin, one of four survivors of old plantation families remaining on Nevis.

Slashing an ocean crest that breaks across her foredeck, *Finisterre* drives to windward. The 38-foot yawl, at her best against the wind, won the rugged Newport-to-Bermuda race three consecutive times—the only boat to achieve such distinction. Here, with mizzen, main, and sweeping genoa jib set to capture even the lightest zephyr, the graceful yacht shows her winning style.

When launched in 1954, *Finisterre* broke all rules of racing design with beamy, almost fat lines. Mr. Mitchell wanted a roomy cruiser as well as a fast racer. Her breadth and weight permitted *Finisterre* to carry larger sails than many boats of her length could accommodate. The broad hull also allowed spacious cabins equipped with every device necessary for a comfortable home afloat.

At Pointe-à-Pitre (left), Mr. Mitchell treats guests to a gourmet repast by candlelight: *langouste*, wine, French and Dutch cheeses.

EXTACHROME (ABOVE) BY WINFIELD PARKS; KODACHROME BY A. ANTHONY STEWART © N.G.S.

her acclaim as "Queen of the Caribbees."

Ashore, I telephoned an old friend, Mary Pomeroy. Of pure Arab blood, Mary was born on the Mediterranean island of Malta, studied ballet in a Russian school, and worked in London as a decorator and in Italy as an underground radio operator for British Intelligence. She finally arrived in Nevis and bought a plantation that had been started by William Nisbet in 1778—not long before dashing Capt. Horatio Nelson sailed into Nevis aboard H.M.S. *Boreas* to court and marry the widowed Frances Nisbet.

That night at dinner, as candlelight gleamed on mahogany and silver, Mary commented sadly, "The old days are almost ended for Nevis. Once the great houses were famous for their luxury and lavish receptions. Now only four descendants of the plantation families are living, and they have no children."

Next morning we visited one of these descendants on the Clay Ghaut Estate. I had met its owner, Miss Eva Wilkin, a painter, on a previous visit (preceding page). She had carried on sugar milling in the traditional island manner, with an old sail mill, until World War II. As we sat on the stone base of the mill, now converted into an artist's studio, Miss Wilkin explained how the mill used to work:

"The sails turning above provided the power to crush the cane between heavy iron rollers. The juice ran off into kettles fired by bagasse, the refuse of the stalks. After the juice had thickened, it was ladled into slatted wooden trays. When the molasses dripped away, it left muscovado—raw sugar—still retaining the smell and taste of molasses.

"Once almost every plantation in the West Indies made its own sugar the same way. Today we buy it at the grocery."

Before returning to *Finisterre*, we stopped by Old Manor Estate, a great house of superb colonial Georgian architecture. Another

Nevisian of old family, Bertie Croney, hospitably showed us through high-ceilinged rooms whose once splendidly paneled and brocaded walls and marble floors had been wrought by craftsmen imported from Europe. In the detached kitchen was a fireplace big enough to roast a whole ox.

American Patriot Born on Nevis

Once Nevis's Bath House Hotel was the most fashionable spa outside Europe. The island's hot springs were first described by Capt. John Smith, who stopped here in 1607 on his way to Virginia, "to wood, and water, and refresh my men." They "found a great Poole, wherein bathing themselves, they found much ease. . . ."

In Charlestown, Nevis's capital, we were reminded of two other famous men. We saw the site where Alexander Hamilton was born on January 11, 1755, marked by a plaque commemorating him as "one of the founding fathers of the United States of America." The Courthouse recalled black days in the career of Horatio Nelson.

The young officer had zealously enforced an unpopular act that restricted United States trade in the British West Indies. When Nelson seized four American ships off Nevis in 1785, angry islanders persuaded the captains to sue for £4,000 damages. Nelson was vindicated, but his popularity on the islands reached a low point.

Not far out of Charlestown, we encountered another Nelson memento. In the register of Fig Tree Church, we deciphered a faded entry: "1787. March 11th. Horatio Nelson, Esquire, Captain of His Majesty's Ship, the Boreas, to Frances Herbert Nisbet, Widow." The marriage took place

THIS PAGE FOLDS OUT

in the great house of Montpelier Estate, now vanished.

Only a two-mile channel separates Nevis from its bigger neighbor—St. Christopher on most charts but usually called St. Kitts. As *Finisterre* boiled across The Narrows under genoa jib, I noted in the log, "Best sail of the winter!" For St. Kitts, like Nevis, is lovely, tapering from a culminating peak to a coastal plain. And nowhere did the sea seem a deeper blue or the clouds a purer white.

Standing by the shrouds, I had both St. Kitts and Nevis in sight and was reminded of other paired islands I had seen from a small cruiser's deck: Tahiti and Moorea in the Pacific, Ischia and Capri in the Mediterranean, all different but all conveying the same sharp stab of beauty.

On arriving at the quay in Basseterre, I was surprised to

Time-mellowed ramparts of Fort Brimstone Hill (left) look across St. Kitts' velvet cane fields to the hazy peaks of Statia and distant Saba. Called "Gibraltar of the West Indies," the bastion earned glory while losing the only battle it ever fought.

In 1782, a British garrison of fewer than 1,000 Royal Scots, East Yorkshires, Royal Artillery, and militia fought off 6,000 French besiegers for a month. Local citizens, resentful of Admiral Rodney's sacking of Statia in 1781, refused to lend slaves to carry heavy guns from the beach to the fort's defenders. Capturing the cannon, the French turned them on the British and forced their surrender. But the king's troops fought so gallantly that the French let them go, "with drums beating, colours flying . . ."

The British, returning to St. Kitts in 1783, rebuilt and expanded the fortress, but abandoned it in 1851. Vegetation now almost obscures the ruins when viewed from the sea (below).

Carib Indians believed that Brimstone Hill—named for the sulphurous odors around it—blew like a giant plug out of the crater of cloud-wreathed Mount Misery beyond.

In waters off the historic citadel, GEOGRAPHIC Editor Melville Bell Grosvenor, at the helm, sails *Finisterre*. The author, foreground, entertains Lt. Col. Henry Howard, retired administrator of St. Kitts.

Green gold of the Caribbees, sugar cane thrives on St. Kitts, the "Fertile Isle." Success or failure of this important crop and fluctuations in the world price of sugar can spell the difference between a European vacation and belt-tightening for the island's sugar planters. Thirty-six miles of railroad track takes cut cane from the fields to a mill near Basseterre. Dressed in Sunday best, families of cane workers walk home from church.

be met by an official limousine that whisked me off to Government House. There I was presented to Lt. Col. Henry Howard, until recently administrator of St. Kitts, Nevis, and Anguilla, who became our guide during our stay in St. Kitts.

"I come from a line whose ladies tend to lose their heads," he said jokingly. "Catherine Howard was the fifth wife of Henry VIII, and Anne Boleyn's mother was also a Howard."

Before we began our explorations, *Finisterre* welcomed a new crew member aboard, Melville Bell Grosvenor, President and Editor of the National Geographic Society, an old shipmate and an able skipper himself. Ahead lay more open-water sailing than we had encountered to the south, so an experienced fourth hand was most welcome.

English First Settled St. Kitts, the "Mother Colony"

Like Nevis, St. Kitts is a volcanic island patterned by fields extending from the seashore to slopes too steep to till. Caribs called it Liamuiga, the "Fertile Isle." Its fruitful soil welcomed Capt. Thomas Warner in January, 1624, when he landed with his wife, son, and other settlers to found the first English colony in the Caribbean.

The island equally deserves the title of "Mother of the French Antilles." French settlement on St. Kitts began a year after the English arrived. The English took the center of the island, the French the two ends. A French governor, Philippe de Poincy, built a castle here in the grand manner during the 17th century—the Château de la Montagne. To signal special announcements, musicians played clarions from the roof.

As we drove past the ruins, Henry Howard told us, "Legend has it that by a trick of the echoes, the sound traveled down the valleys, so it could be heard throughout the island. There is also a belief that a secret escape tunnel extended more than two miles from the chateau to St. Peter's Church. About 1689 the chateau was destroyed by an earthquake. The ground opened nine feet in places, swallowing whole sugar mills."

But the sugar industry still flourishes on St. Kitts. A narrow-gauge railway (opposite) feeds stalks into a factory at the eastern end of Basseterre roadstead. There the juice is converted into sugar and molasses for England.

Dominating the peaceful sugar fields stands a fortress that was to the land warfare of the area in the 18th century what English Harbour was to the navy. As we walked the battlements, Henry Howard told us the story.

"Military engineers planned Brimstone Hill as a bastion that could never be captured. Oddly, the only time it was attacked, by the French in 1782, it fell. The people of St. Kitts, enraged by Admiral Rodney's pillage of Statia the year before, refused to help the British garrison move its cannon to the fort. The French turned the guns against the defenders, and the fortress surrendered. It came back to British rule the next year" (pages 509-511).

From the heights we marveled at the enormous complex of defenses. Thick masonry walls lifted above sheer cliffs of rock, every approach commanded by batteries. St. Kitts was dwarfed to the scale of a relief map, and beyond we could see across blue channels our next island goals, Statia and Saba.

Next morning, as *Finisterre* scudded past Brimstone Hill under a smiling sky, it was hard to imagine that the intrigues and violence of European politics had ever bloodied these sunny isles. Yet lifting higher as we shot each wave crest loomed St. Eustatius, or Statia, scene of a shameful episode in Europe's struggle for Caribbean supremacy.

Statia's tragedy stemmed from her thriving business as a free port, trading with the rebellious American colonies in defiance of British restrictions. She further infuriated Britain when, on November 16, 1776, her governor

CATACOMB (OPPOSITE) AND HOUSEHOME © N.G.S.

returned the salute of the American brigantine *Andrew Doria*—the first foreign salute to a flag flown by the Continental Navy.

At the outbreak of Anglo-Dutch hostilities —before Statia even knew she was at war— Admiral Rodney in February, 1781, swooped down on the unsuspecting island. Rodney's raid netted a rich haul, worth an estimated $10,000,000 in the currency of the time. To increase the bag, he left the Dutch flag flying over Oranjestad for more than a month, luring in unwary latecomers.

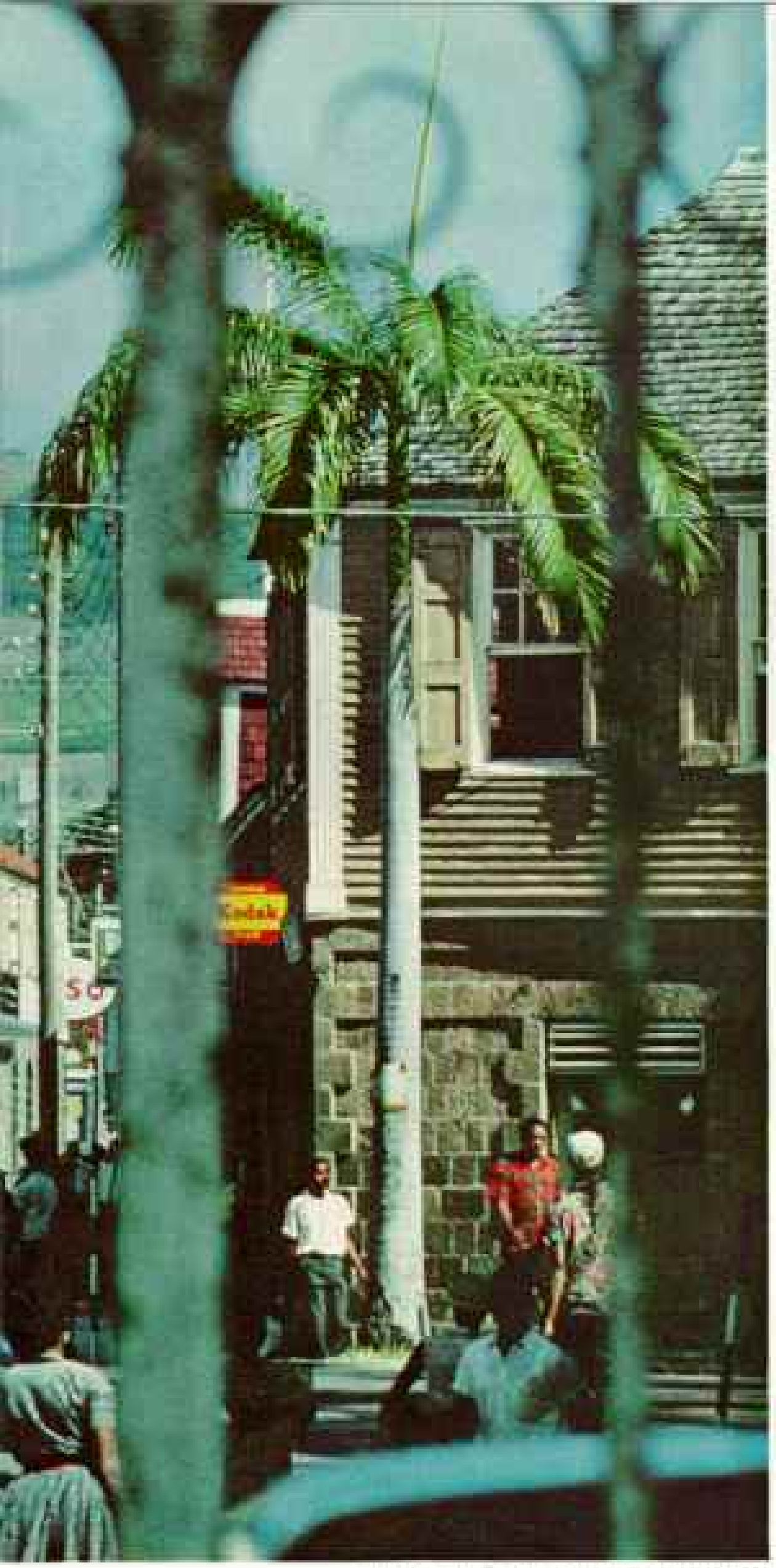
Going ashore, we crossed a barren beach, the site of Oranjestad's vanished Lower Town (pages 516-17). We climbed to the clifftop above, and our footsteps echoed in the almost deserted streets of Upper Town, once a community of imposing houses and churches.

Walking with Administrator Laurens Rosema in the courtyard of Fort Oranje, I was startled when a buzz of voices broke the silence. A crowd had gathered at a window.

"It is plane day, when the mail comes in," explained Mr. Rosema. "Names are called out and the letters handed over, just as they were when sailing ships came."

As we turned away, we passed a monument to Statia's role in American history. At the base of the fort's flagpole a bronze plaque presented by President Franklin D. Roosevelt in 1939 recalled that day in 1776 when Statia returned the *Andrew Doria's* salute.

Before returning to *Finisterre*, Mel Grosvenor spoke to the administrator. The result was a pleasant surprise for me as we lowered our colors at sunset. A police officer manned the Netherlands flag flying above Fort Oranje, and when we dipped our ensign, we received



"**A Town of a good bigness,** whose Houses are well built, of Brick, Freestone, and Timber . . ." a 17th-century traveler described Basseterre, capital of St. Kitts. Here the author explores the central plaza, or Circus, with its clock tower surrounded by palms, government buildings, and shops.

a salute in return. This time there was no Rodney to disturb the peace.

Meanwhile, wonderful aromas wafted from the galley as Henry prepared *poulet à la Finisterre:* chicken sauteed in butter, simmered in stock, and seasoned with herbs and wine. With candles on the table, soft music from hidden speakers, tropical fruit, and French cheese within reach, we enjoyed one of the delights of small-boat cruising—to be at home while sampling the finest from distant lands.

Stars were still bright as we set sail for Saba. At dawn, the silhouette often compared to Napoleon's cocked hat lay close ahead (page 518). The peak of a mountain thrusting sharply from the ocean floor, Saba has only narrow ledges offering a precarious hold for an anchor. Certain that it would be impossible to anchor long enough at Saba for carefree exploration of the heights, I had sent a radio message to the administrator requesting that a surfboat stand by to take off Win Parks and his photographic equipment.

As the boat approached, I wondered how we could make the transfer. On the crests of rolling seas the two boats were like elevators passing in opposite directions. Finally the Saba boatmen yelled as the vessels hung poised on the same wave for an instant, and Win tumbled aboard.

Finisterre repaid us for not tethering her off the bleak shore; she romped over the seas like a colt galloping across a hilly pasture.

"Flight Deck" Perches Above the Surf

At noon we swept into Philipsburg on St. Maarten, to swim and lunch before Mel Grosvenor and I boarded a Dornier 28 for an aerial return to Saba. Although the 28 can climb and descend almost as steeply as a helicopter, I still questioned how we would get down on a runway carved from the rocky pinnacles of Saba.

The island's highest peak was wreathed in cloud as we drew near; mist hid the valleys. Suddenly the pilot pointed, and through a rent in the veil I saw something that looked like an aircraft carrier's flight deck balanced on a spur of rock, both ends hung over the sea, surf booming below.

Our approach headed us directly for a cliff. At the final moment before disaster a swooping turn touched our wheels down. I looked at Mel, and Mel looked at me with raised eyebrows. We shared a feeling of thanksgiving.

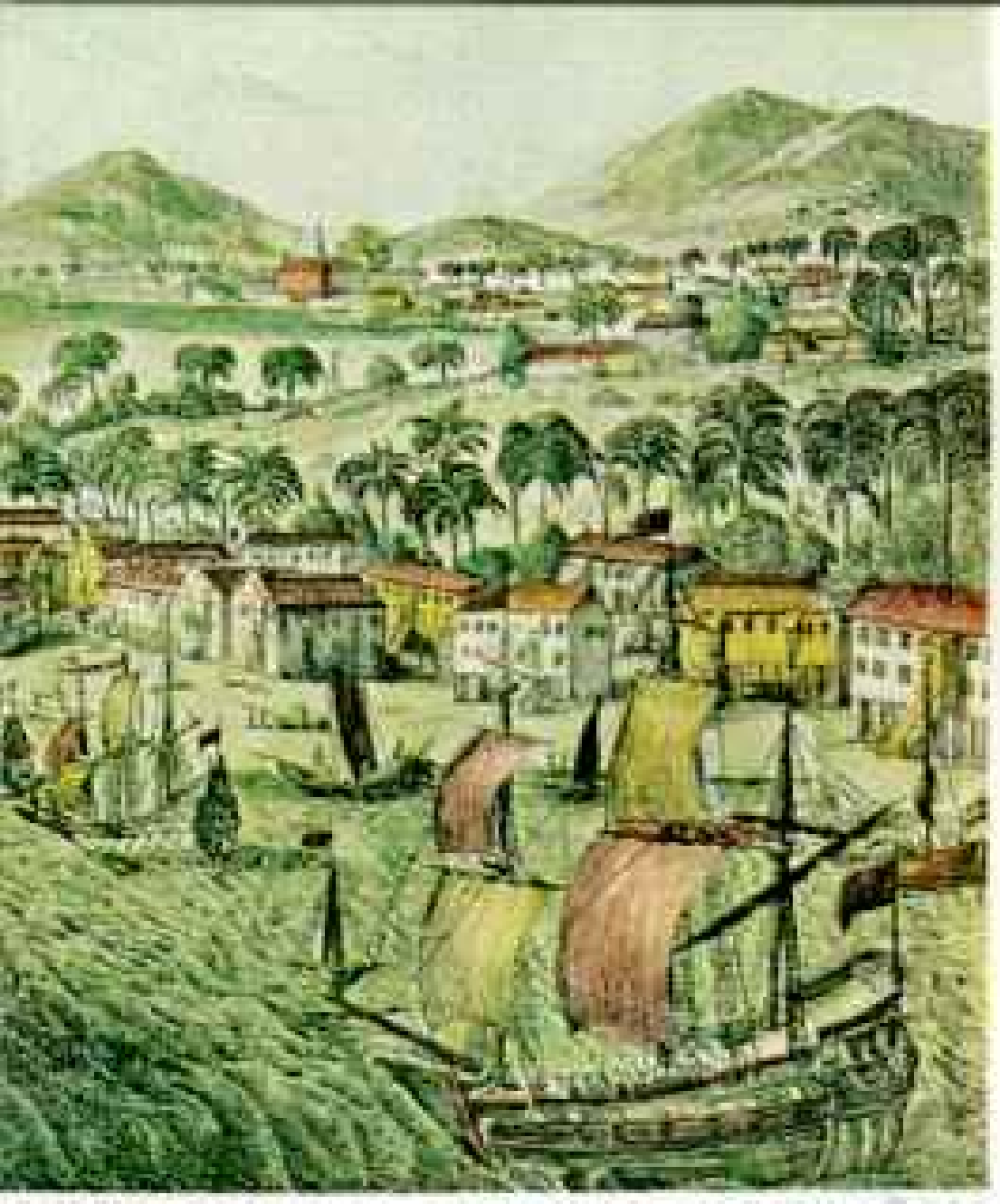
The airport prepared us for other surprises in this tiny Dutch island that has an atmosphere of never-never land. Boarding a jeep, we climbed a zigzag road—another piece of engineering that can't exist, but does (page 520). At the top we found the neat little gingerbread town of Windwardside. Passing red-roofed houses half hidden by picket fences and flowers, we arrived at the guesthouse, where Win Parks greeted us. Then, from a balcony 1,200 feet above the sea, we watched the sunset.

Islanders and Dutch are working together, trying hard to gear Saba to the present. "The airport and roads are planned by the Sabians

"**Dat mon Rodney!**" In lilting West Indian English, a Statia youngster gave the author his opinion of the British admiral who sacked his home island in 1781. Statia's port, Oranjestad (right), then a prosperous city harboring as many as 200 ships at a time, carried on a lively trade with the rebellious American colonies in defiance of the British. Dutch islanders also irked Britain by giving the first foreign salute to a ship of war flying an American flag. The old print errs in placing Fort Oranje on a spit of land at sea level. In fact, the fort stood on the cliff above the narrow beach.

Children (below) scamper among the ruins of one of the Lower Town's toppled warehouses, some of whose walls have fallen into the sea.

ETCHING COURTESY OF



MUSEUM OF ST. MAARTEN (ABOVE); ENTACHROME BY WINFIELD PARKS © N.G.S.

and financed by the Netherlands Government," Gerard van der Wal, the administrator, told me. "Though outside engineers helped with the landing field, the roads are native. Lambert Hassell, a Sabian with only elementary schooling, laid them out by walking the terrain and planting stakes, and they were built by manpower—not by bulldozers and heavy graders.

"Perhaps if he had gone to college, he would have used a slide rule and said, 'Impossible!' "

When I visited Saba in 1947 aboard *Carib*, a single road connected the main boat landing with The Bottom, the island's capital, which lies above in the shelter of an extinct volcanic crater. To me then, the road was a miracle, as was the first jeep to the island children.

"Now there are more than six miles of paved road," Mr. van der Wal said. "At the town of Upper Hell's Gate the road rises to 1,400 feet. We have 50 vehicles and three guesthouses as well as electricity and radiotelephone communication."

When I revisited the boat landing, I found one thing which had not yielded to modernization. Passengers and freight arriving by sea still must land through surf (following pages).

While I watched, a boat was skidded to the water's edge. At a shout, the crew scrambled aboard and paddled furiously to avoid being thrown back and overturned by the next crest. Taking two women from a native sloop, the crew had less luck getting back. The boat yawed, turning almost broadside. The following wave broke aboard, soaking the two women and the suitcases they carried.

As they waded ashore, an old man sitting in the sun commented, "It's calm today. You should watch when it's rough, and a jeep has to be landed."

Sabians Repelled Pirates With Stones

Saba, colonized by the Dutch about 1640, was saved from invasion on several occasions by its nearly vertical slopes. Père Labat, a 17th-century traveler, wrote how Sabians drove pirates away by raining down stones. Then for a time Saba lived in quiet contentment, but in recent decades the men have had to seek work elsewhere, so that Saba has sometimes been called "the island of women."

An American student, Julia Crane, who lived there a year doing research for her doctorate, explained: "Saba achieved this reputation in the late 1930's. Men left to go to sea, sending money back to their wives. Some settled with their families in New York. When maritime jobs grew scarce, Sabians shifted to the oil refineries of Aruba and Curaçao. The women have gone to join them there and some have found work too. So while other parts of the world are experiencing a population explosion, Saba's population has declined."

Mr. van der Wal told me later: "We have no

more than 200 overnight visitors a year, although others come for a few hours on the three-days-a-week plane."

On their cone-shaped homeland the remaining residents fish, cultivate small plots, and work as surfboatmen. The women still make and shyly offer for sale the famous drawn work of Saba, which resembles lace but whose patterns are actually created by drawing threads in woven fabric (page 521).

"Sorry, All Booked Up!"

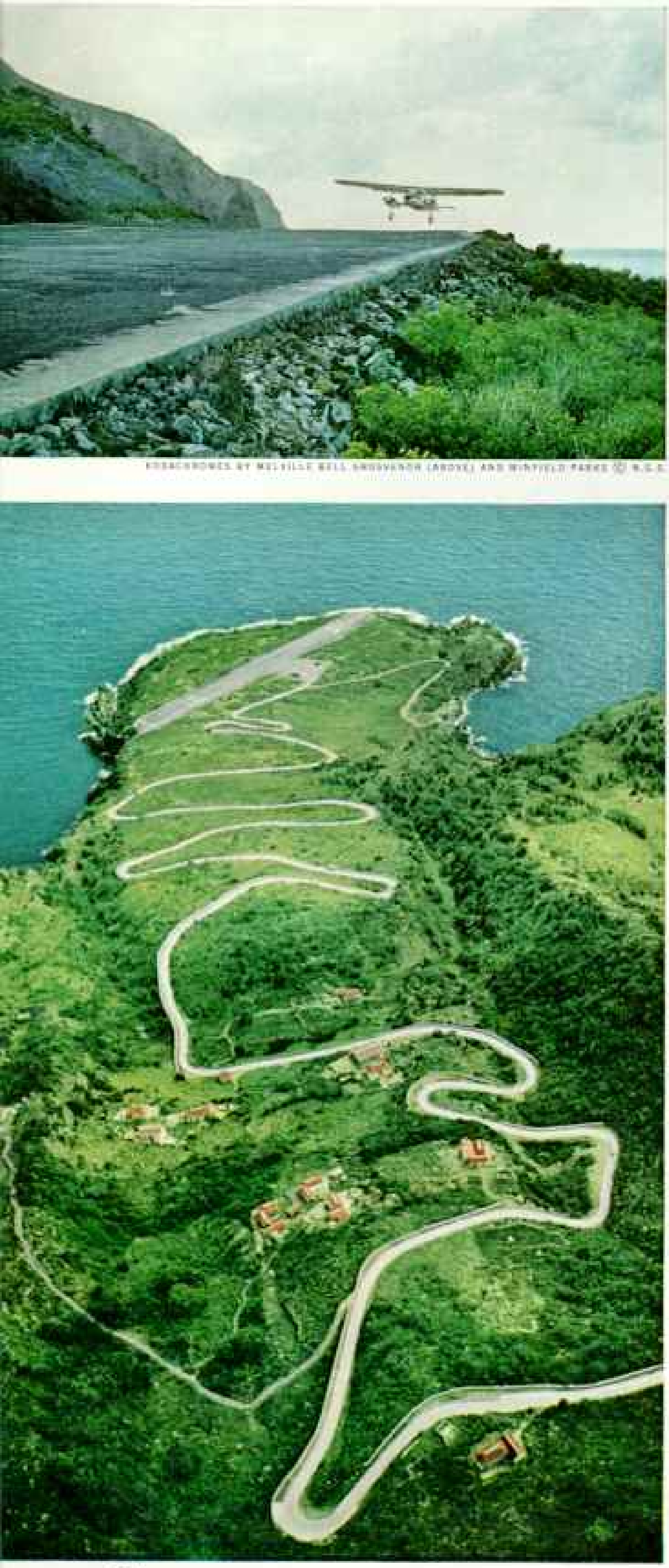
While Saba feels left behind, not so St. Maarten—as 20th century as its concrete-and-glass airport. "Dinner for four?" repeated the maître d'hôtel of a smart beachfront restaurant in Philipsburg. "Sorry, sir. We're all booked up today."

The island is in the midst of a boom. "We can't keep up with the demand for rooms," Lt. Gov. J. J. Beaujon told me. "Every two years or so traffic to the West Indies doubles, and we seem to be getting more than our share."

Air-conditioned showrooms of smart shops display tempting items culled from everywhere, for Philipsburg is a free port. Typical of the freedom of the island, too, is the frontier between the Dutch part and the French part. A marker at the roadside lets the traveler

KODACHROME BY WINFIELD PARKS © N.G.S.

Saba's nimble boatmen trick the treacherous surf into helping them make a safe landing on a rock-strewn strip below soaring volcanic cliffs. Even the jeeps arrive in this manner, lashed to a platform between two boats. Above the customs house at Fort Bay fly the tricolor flag of the Netherlands and that of the Dutch Antilles' six islands. A mountaintop rising sharply out of the sea, Saba has no true port. Its steeply sloping sides (above) plunge to 100-fathom depths as close as 600 yards from shore, making it virtually impossible to anchor off the coast except in calm weather.



PHOTOGRAPHS BY MELVILLE BELL GROSVENOR (ABOVE) AND WINFIELD PARKS © N.G.S.

"Spanish work" absorbs two generations of Sabians in a hibiscus garden of Windwardside. Drawing threads from linen fabrics, the islanders create lacy designs in tablecloths and handkerchiefs. They shyly offer them for sale to visitors to the red-roofed hamlet, perched in the path of northeast trades.

Corkscrew road writhes from Saba's flight-deck airstrip past homes of Lower Hell's Gate, 900 feet high. Pride of Saba, the twisting track of hand-laid stone follows a route marked out by an islander, Lambert Hassell.

Nimble Dornier 28's, with special flaps for short-stop landings, visit the island from St. Maarten three days a week. When winds buffet Saba, the plane must hurtle toward the cliffside, veer at the last minute, slow to 30 miles an hour, and plop down (upper left) with as many as seven shaken passengers.

know he has passed from one side to the other merely by changing the spelling from St. Maarten to St. Martin.

An old tale has it that the division between the two nations was settled when a Dutchman and a Frenchman stood back to back at the water's edge and began to walk around the perimeter until they met at the other side. A line drawn between the two points would form the boundary.

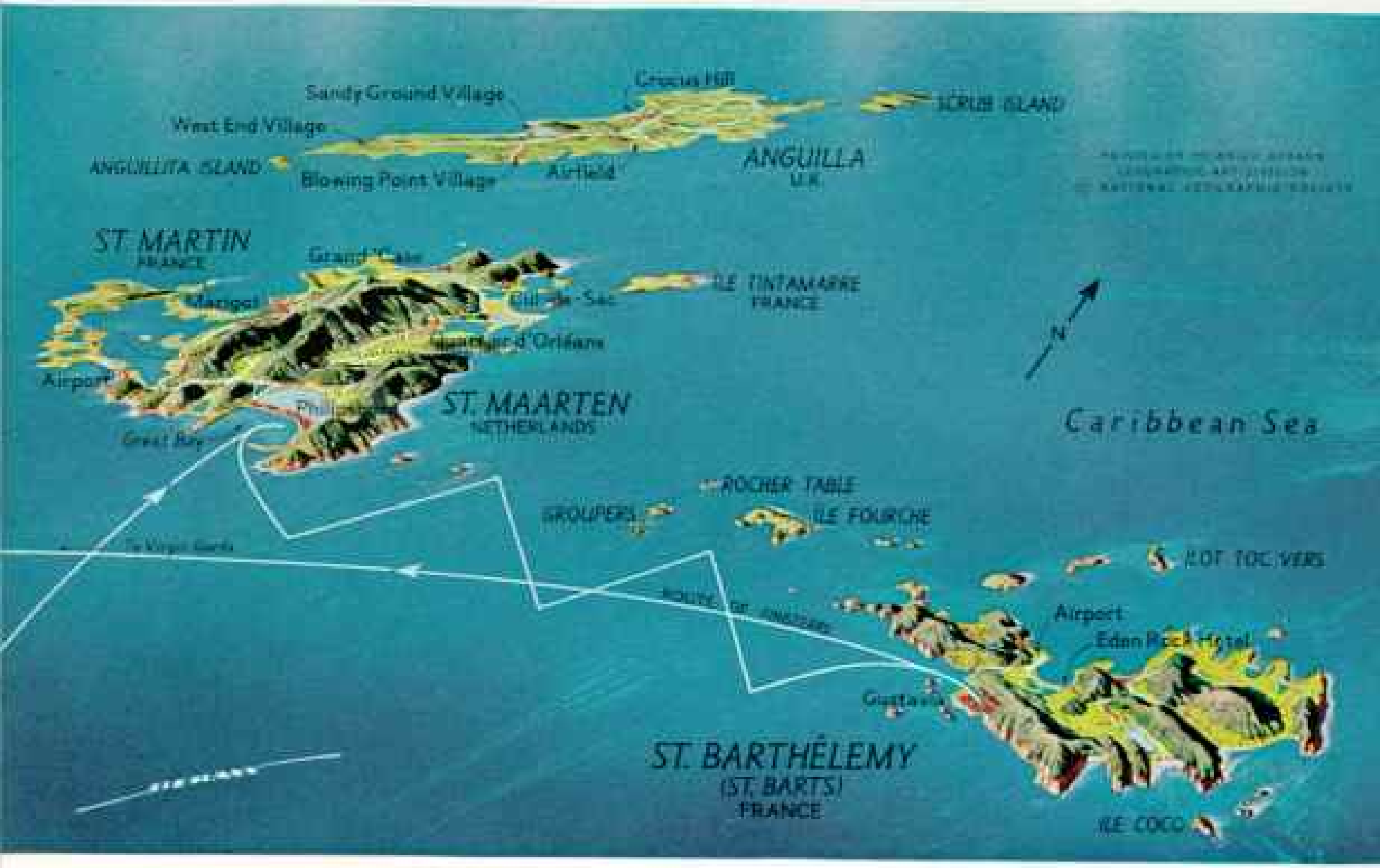
The Dutchman is reputed to have brought along a bottle of Holland gin; after a few nips, he napped in the shade while the Frenchman plodded ahead, covering more distance. In any case, France has the larger part, 20 square miles against 14 for the Netherlands.

To our surprise we found a bit of Japan tucked away in a corner of Philipsburg's harbor. Trim fishing boats bristling with electronic gear fan out over the Caribbean to return with catches of tuna and other deep-sea denizens (page 523). While we watched, crewmen clad in fur coats and mittens swung tons of frozen fish into the refrigerated holds of the *Chikuzen*, a mother ship. Along the upper rails, sharks' fins and tails were drying for use in Chinese soup.

"Only a small part of our catch goes back to Tokyo," said the Japanese manager of the operation, Hiroshi Shimamori, as we sat in his office. A kimonoed geisha doll stood in a lacquer case behind his desk, near an elaborate tea service. "We sell some fish locally, but most goes to canneries in Puerto Rico."

Trade Winds Force a Windward Detour

To reach our next goal, French-owned St. Barthélemy, or St. Barts, we had to backtrack in terms of the trade wind. For the first time since leaving Antigua, we flattened sails. Inside the bay the breeze had been fresh, but as we drew away from the shore, I realized that gusty squalls funneling down the slopes had fooled me into carrying too small a jib.



Finisterre gently rose and fell to the seas, lacking drive. From the snail's pace of the bubbles alongside it was obvious we were getting nowhere. Squinting at them lazily, I hoped no one else would notice.

"Well, skipper?" asked Mel Grosvenor with a rising inflection, mildly protesting our inefficient rig. So I temporarily abandoned sun-bathing to help set a larger jib.

Now *Finisterre* came alive. We sliced through the crests, and foam hissed along the sides. At 11:45 the ship's log recorded a rare event: "Sighted whale breaching clear of water, falling back with geyser of spray."

St. Barts Election Enlivens the Sabbath

I confess having looked forward to St. Barthélemy's port of Gustavia. After English Harbour we had lain in a succession of open roadsteads, coves rather than snug havens, protected from the wind but not the swells; *Finisterre* was never quiet. Often we had to perform acrobatics to stay in our bunks.

Gustavia looked ideal on the chart, a narrow cut deep into the land, and I anticipated utter peace (page 524). Alas! We found swells curling in that sent *Finisterre* shooting ahead and astern. As she surged against her lines, the impact almost brought us to our knees.

Suddenly our expected tranquillity was shattered in another direction. It was Sunday afternoon, and on one of the more remote Leeward Islands we anticipated a Sabbath hush. Instead, horns blared as an auto cavalcade surged over a hill across the harbor. The parade wound through the town and halted on the quay at our stern, still tooting.

We had arrived just before this tiny dependency of Guadeloupe voted for a mayor, and the boys were whooping it up on election eve!

Gustavia added a dash of Scandinavian to the smorgasbord of cultures we had already encountered, for Sweden owned St. Barts from 1784 to 1877, when it was sold back to France. Gustavia still bears the name of Sweden's Gustavus III, and the scroll patterns of the far north decorate many of its houses.

St. Barts has a scalloped shoreline, deeply indented bays cradling white sand beaches. To reach those on the northern shore, we hired a car. We had barely climbed the hill behind Gustavia when an airplane seemed about to dive into a window.

"Duck!" Mel exclaimed.

Because the landing strip lies in the valley beyond, one of the few flat spots on the island, a pilot must cut his power where the road crosses the crest, then follow the slope of the hillside down to the field.

Soon we came to the Eden Rock Guest House, perched on a jutting promontory with crescents of white sand embracing pale green

"B" for Beatrix emblazons the Courthouse in Philipsburg, St. Maarten, honoring a visit by the Netherlands crown princess. France calls its portion of the shared island St. Martin.

A legend explains that to make the split, a Dutchman and a Frenchman stood back to back, then walked the shoreline until they met. The Hollander lagged, so France won 20 square miles to the Netherlands' 14. Islanders ignore the international boundary.

International corner of the Antilles: St. Martin and St. Barts are dependencies of French Guadeloupe; St. Maarten is Dutch; Anguilla, British. Salt ponds, in pale blue, once yielded a major mineral export.

Bunched like bananas, frozen tuna head for the hold of a Japanese refrigerator ship at Philipsburg. A vessel from the island-based Japanese fishery brought in the catch. Much of it will go to canneries in Puerto Rico.

and blue shallows at either side. While Win Parks photographed a spectacular coral reef through the clear water, Mel Grosvenor disappeared. When he returned, he announced, "I've found dinner! Come along."

In a rock-walled pool below he pointed to dozens of *langoustes*, clawless lobsters penned for diners' choice. From every shaded cavern long antennae protruded, while other fine specimens crawled on the sand.

"We'll take that one, and that one," said Mel to a small boy, choosing sizes to fit *Finisterre*'s biggest pot (below).

Before leaving we visited the winter residence of U. S. banker David Rockefeller, built on a point that can be reached from Gustavia only by boat. The dwelling defies description, except that it seems to grow out of a rocky hilltop. Coming ashore on invitation, we were met by its designer, Nelson W. Aldrich, who explained the theme as we walked through rooms of unusual shapes.

"The basis is a parabola—whose lines never meet—as free a mathematical curve as can be achieved. We wanted to convey the sweep of the islands across the sea and also to funnel the breeze through. Yet the detached guesthouse is triangular, to pick up the feel of the conical rocks and shape of beacons and buoys, since it is oriented to the sea."

Finisterre Heads for the Open Ocean

We returned to *Finisterre*, and by sunset were sailing past the triangular house. I took a bearing on it as easily as on any beacon. To starboard lay a collection of dangers to avoid, a scattering of pinnacles rising abruptly from deep water. Slowly we moved into the 97-mile span of the Anegada Passage, our longest open ocean run of the cruise.

PHOTOGRAPHED BY FRED MARD (OPPOSITE) AND WINFIELD PARKS © N.G.S.

Gustavia's sheltering hand shapes the harbor on St. Barthélemy, or St. Barts. Expecting a calm mooring in a snug haven, *Finisterre* surged constantly to swells that curled in from the left. Once Swedish, St. Barts now belongs to France, but most of its 2,100 people know English. Tiny Île Fourche crouches before the hazy bulk of St. Martin.

Clawless langoustes, caught on St. Barts' reefs and penned in shallows, pass through the hands of young middlemen en route to the author's table.

Lifeline strung to his parents' boat protects a French lad (right) as he practices swimming. Henry Davis, on *Finisterre*, encourages him.

PAINTING BY MELVILLE BELL GROSVENOR © N. G. S.

"Collection of delights," Carleton Mitchell calls the Virgins—"interesting islands and pleasant anchorages, splendid weather with nearly ideal sailing conditions, clear water and simple pilotage." Spicing these charms, the isles once hid pirates and buccaneers, and framed a setting for Robert Louis Stevenson's classic *Treasure Island.*

A third of the hundred or so islands make up the British Virgins, with Roadtown the capital. The United States bought the American Virgins from Denmark in 1917 to protect the approaches to the Panama Canal. St. Croix, largest of the American group, lies off the map 35 miles south of St. Thomas.

Greedy graveyard of the sea, Horse Shoe Reef shows its skeletons to divers. Skipper Mitchell surfaces with a coral-encrusted cannon ball. The projectile went down with a British frigate at least 150 years ago; its cannon still litter the reef (right). Thrusting 14 miles along a major north-south passage into the Caribbean and swept by powerful currents, Horse Shoe Reef is strewn with the bones of hundreds of ships—slavers, traders, and men-of-war.

Atlantic Ocean

ANEGADA

Leaving Finisterre in Little Dix Bay, author explores wreck-strewn reef by motorboat.

Horse Shoe Reef

MOSQUITO ISLAND

North Sound

Little Dix Bay

South Sound

Anegada Passage

VIRGIN GORDA

Airfield

The Baths

Spanish Town

GUANA ISLAND

White Bay

FORT AT CAMANOE

BEEF ISLAND

East End

Road Bay

Road town

TORTOLA

PETER ISLAND

NORMAN ISLAND

ROUTE OF FINISTERRE

Caribbean Sea

Finisterre rolled along before a light breeze, her bow waves plashing. At eight Henry served a dinner of Mel's langoustes, boiled in sea water scooped from over the side. Afterward Mel took the wheel for a four-hour watch, while I sat near him in the cockpit. As the warm breeze and gentle motion lulled me, I sought my bunk, leaving Mel alone with his thoughts and the stars.

When I came back on deck, the wind had gone more directly astern. With a spinnaker pole we pushed the jib out and ran "wing-and-wing." Now it was Mel's turn to bid me a sleepy good night.

Islands Named for 11,000 Maidens

There is a unique sense of detachment aboard a small boat on the open ocean at night, as though the rest of the world and its problems no longer exist. The mast wove a pattern among the stars, the breeze was warm and friendly on my bare shoulders, and the lift of *Finisterre* to the seas was a lullaby.

After the miracle of a tropic dawn, we saw ahead the purple shapes of many islands. When Columbus found the same cluster of peaks breaking the horizon, they seemed so numerous that he had been reminded of the legend of St. Ursula.

Ursula was a princess who begged her father to allow her to go on a cruise before becoming the wife of a pagan king. So many other maidens asked to be included that it took 11 ships of her father's navy to transport the 11,000 young ladies who had signed on. After three years they had the misfortune to be visiting Cologne when it was sacked by the Huns. Columbus named the archipelago Las Virgenes in their honor.

Gradually I could make out individual islands—off to starboard the ample contours of Virgin Gorda, the "Fat Virgin," and a whole string of lesser cays to port.

The administrative center of the British Virgin Islands is Roadtown, on Tortola, and we were supposed to enter there, but we could not resist pausing off The Baths, a strange formation of mammoth boulders on Virgin Gorda, piled as a child might build a castle with pebbles (opposite).

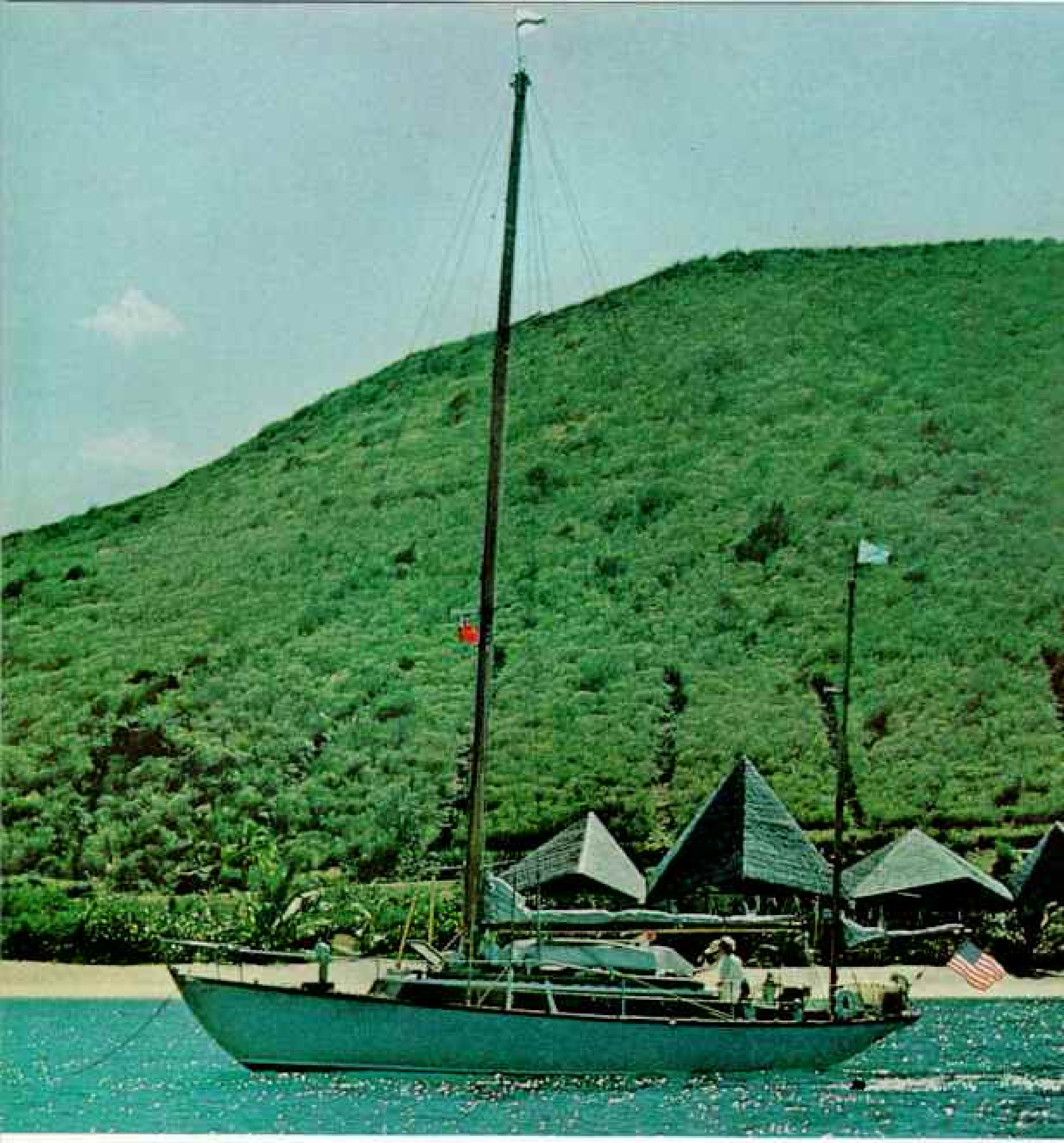
In water so clear that *Finisterre* seemed floating in air, we swam. Afterward we lazed on deck under the cockpit awning and ate another meal of langouste, this time chilled and flanked by salad.

On arriving at Roadtown, we found a busy waterfront, in contrast to my memory of a sleepy village under palms. Ferries connecting with St. John and St. Thomas, in United States territory, bustled in and out. Waiting

Beneath tilting three-story boulders, beachcombers explore a grotto of The Baths on Virgin Gorda. Ages of erosion ate away softer surrounding rock, sculpting a labyrinth of salt-water pools out of the massive granite.

As if daubed by an impressionist's brush, a swimmer lazes near The Baths, washed by the interplaying light and crystal waters of the Virgins.

KODACHROME (ABOVE) BY MELVILLE BELL GROSVENOR; KODACHROME BY WINFIELD PARKS © N.G.S.



at the dock were taxis painted in gaudy colors and Detroit-built station wagons looking as long as Pullman cars after the small European automobiles of the southern islands.

When I tried to pay my taxi driver, he stared in surprise at the "Beewee" money I offered, although it is the official currency of the other British West Indian islands.

"What's that?" he demanded suspiciously. "We takes only U. S. dollars here."

Tortola, together with most of the Leewards, was suffering an almost disastrous drought. We were on the verge of a disaster ourselves. Henry reported one water tank empty and the other nearing bottom. We appealed to the Public Works Department and were saved by a tank truck that rumbled to the dock and put aboard a fire hose.

Ashore, Mel Grosvenor hired a Land-Rover to take us to the remains of the original rain forest on Mt. Sage. Once the entire Virgin group was verdant, but careless timbering and planting by early settlers caused cumulative erosion. Yet when we came to the highest slopes of Mt. Sage, where trees had never been cut, we found lush green. These stands, though not rain forests in the sense of Dominica's or others of the Windwards, where precipitation is almost continuous, nevertheless demonstrate the ability of wooded

peaks to draw moisture from the atmosphere (page 535).

On our way back to Roadtown we looked down on a terraced hillside and saw sugar cane being cut, loaded on donkeys, and carried to a small mill. Intrigued, Mel Grosvenor suggested we find out what was going on.

We left the Land-Rover and plunged down a steep path to a clearing. We could hear the swish of knives and the voices of the cutters in the nearby field as the stalks were taken off the backs of the donkeys and fed directly between iron rollers. The juice—pure "cane squeezin's"—ran down a cement trough to a fermenting vat.

Dubiously we approached a nearby still, fearing it might blow up at any moment. Pieces of rope held together a serpentine coil. Wisps of steam escaped, but from the bottom of the coil a clear stream flowed from a spigot.

When Mel leaned closer to have a look, he was handed a brimming calabash of rum still warm from the still. After one sniff he recoiled, exclaiming, "Now I know what Ozark 'white lightning' must be like!"

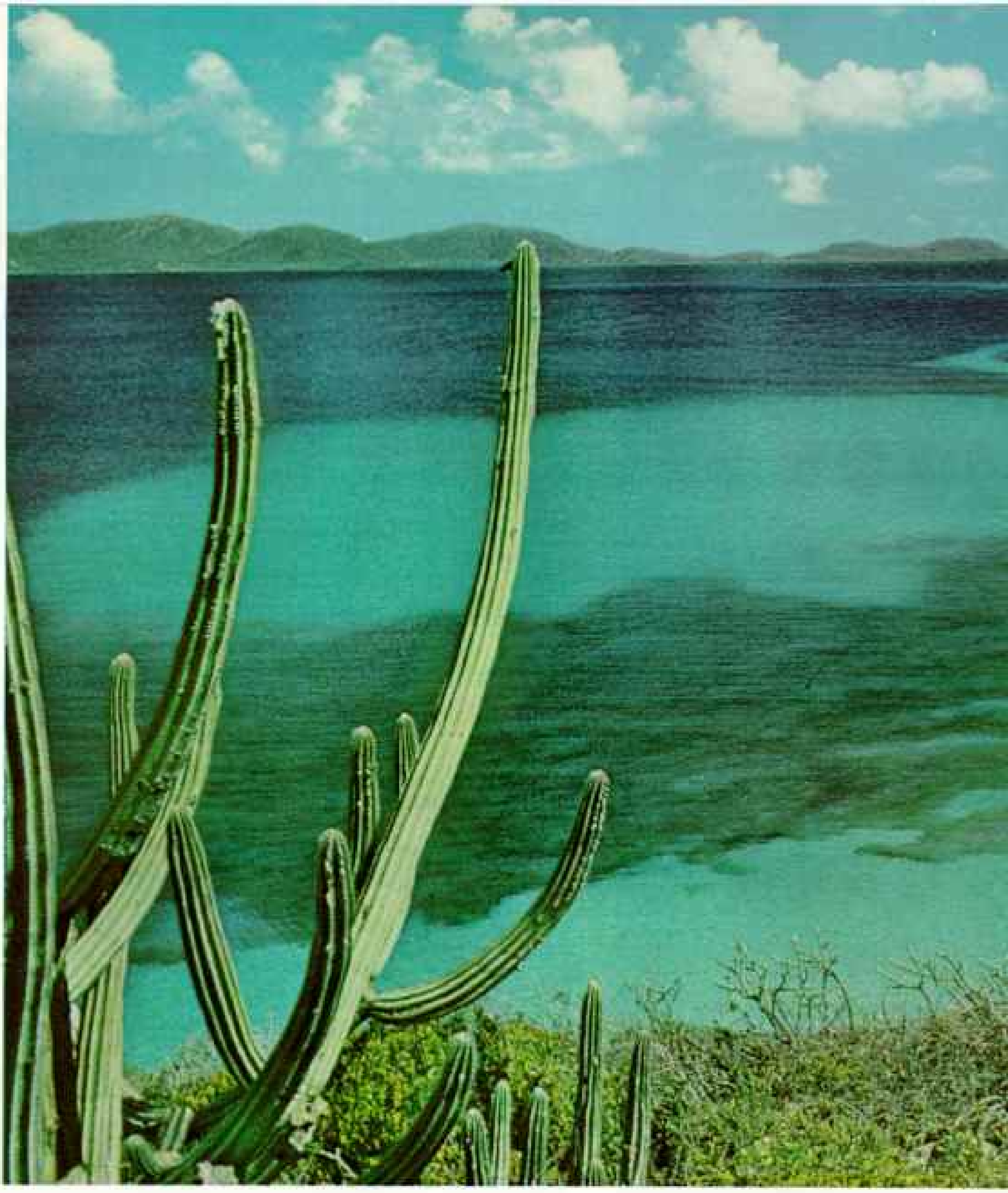
Before sunset our bow sliced Sir Francis Drake Channel,

BY MELVILLE BELL GROSVENOR (ABOVE) AND EVE MARS © N.G.S.

Coolie-hat roofs of the Little Dix Bay resort poke above *Finisterre* off Virgin Gorda, the "Fat Virgin." Surveyors' lines, hacked with machetes, climb precipitous Cow Hill.

Long sharing the poverty of most of the Caribbees, Virgin Gorda breathed with new life when Laurance S. Rockefeller, a Trustee of the National Geographic Society, launched the Little Dix Bay resort in 1961. Today 50 breeze-swept units nestle in a setting of rustling palms, powdery beach, and turquoise water.

Royalty visits the Virgins: Queen Elizabeth II and Prince Philip flank Mr. Rockefeller and his wife Mary at Little Dix Bay during last winter's tour of British Caribbean outposts. The American couple presented the Queen with a book on the British Virgin Islands illustrated by NATIONAL GEOGRAPHIC cameramen.



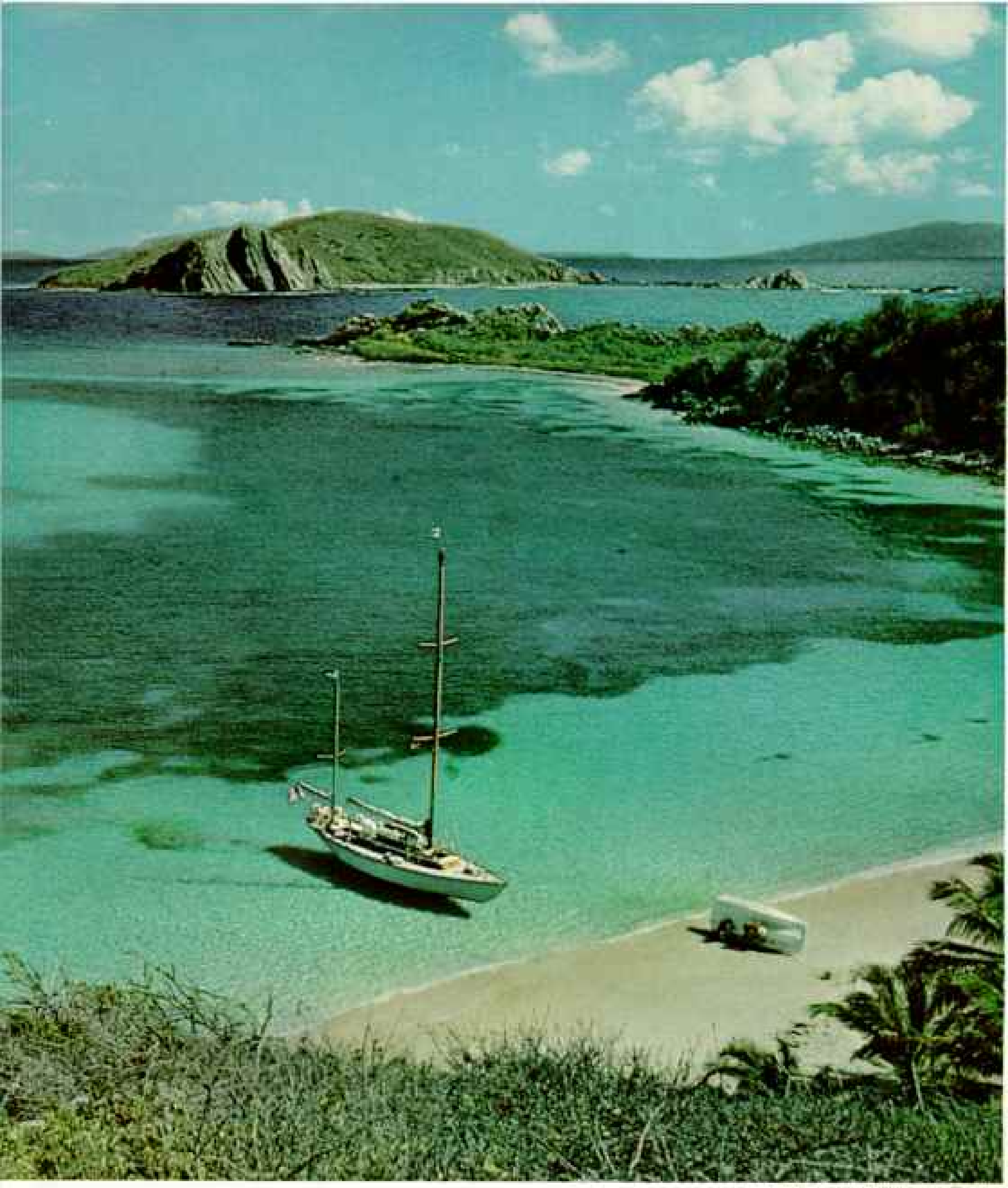
crossing the wake of the doughty Elizabethan who harried the Spanish up and down the Caribbean nearly four centuries ago. I was coming back to one of the most enchanting anchorages in the West Indies.

From the deep blue of the channel *Finisterre* sailed onto a patchwork of shallows, finally dropping the hook to lie in a sandy white semicircle framed by waving palms (above). Deadman Bay on Peter Island had not changed since my last visit; nor had nearby Dead Chest, which by local lore is the "dead man's chest" of Robert Louis Stevenson's *Treasure Island*.

Next morning we set to work much as buccaneers might have before a foray. We made fast a line to a palm tree and hauled *Finisterre*'s bow to the beach. Standing in the shallows, we scrubbed away marine growths that had accumulated on the bottom. Then we gave the same treatment to the Boston Whaler we towed astern as a tender and occasional photographic platform.

Guarding the Islands' Natural Splendor

Next, a leg back through Sir Francis Drake Channel took us to Little Dix Bay Hotel on Virgin Gorda. *Finisterre* entered through a narrow slot to swing within easy reach of hot showers, charcoal-broiled steaks, and other



EDACHROME BY MITCHELL PAYNE © N.G.S.

contemporary amenities. Little Dix features cottages rimming a superb beach, protected from Atlantic swells by a fringing reef. It is part of Laurance S. Rockefeller's program of preserving and developing areas of unspoiled natural beauty (pages 530-31).

It is impossible to write about the Virgin archipelago without paying tribute to the vision of this American philanthropist. Not only on Virgin Gorda but on St. John, he has bought land for future generations to enjoy. He donated his holdings on St. John for the new Virgin Islands National Park.

From Little Dix we explored dread Horse Shoe Reef, bounding the western side of the Suspended as if in air, *Finisterre* rides the transparent water of Deadman Bay, Peter Island. Crew members careen the yawl's tender, an outboard-powered Boston Whaler. Tines of pipe-organ cactus appear to jab at Tortola across Sir Francis Drake Channel. A palisade guards Dead Chest Cay, named by British buccaneers; the isle probably inspired Stevenson's:

Fifteen men on the dead man's chest—
Yo-ho-ho, and a bottle of rum!

Author Mitchell found the bay "the kind of setting a man might dream about when sleet begins to rattle the windowpane."

Anegada Passage, a graveyard of ships. We sped through North Sound in a motorboat piloted by Paul West, a former U. S. Navy submariner who now runs a charter service.

"Horse Shoe Reef is more than ten miles long," Paul told me. "It rises above the surface in only a few places. In darkness or bad weather no land is in sight, and you have no way to calculate the currents' effect on a vessel's course."

We anchored in what appeared to be open ocean, and Mel, Paul, and I donned flippers and masks to swim over a marine garden, beautiful but deadly to ships. Suddenly Paul swam into my area of vision and pointed.

Strewn across an open patch of sand were unmistakable outlines of muzzle-loading cannon, marked with the broad arrow of British naval ordnance. Research had established the wreck as probably that of a frigate of the late 18th or early 19th century. Between the crisscrossed guns were scattered round objects which I recognized as cannon balls even through their growths of coral. Lungs bursting, I made a final lunge to seize the nearest and somehow got it to the surface (pages 526-7).

Bones Spill From Ghostly Wreck

Only a few hundred yards away lay another wreck. Approaching what looked like a pinnacle of rock awash, with seas breaking over, we dropped anchor. Paul said, "That's all of the *Rocas* left above the surface. Islanders say she was a freighter wrecked during a storm in 1979. Each time I come I feel like a boy visiting a haunted house. I won't tell you why, but you'll see."

Floating on the surface, we hung over a large iron ship, which at first glance seemed almost intact. We could see chain, winches, even cargo booms. But then I realized that I could also see *Rocas*'s boilers and an engine, standing upright as if ready to continue the voyage—a weird X-ray view of a ship. The bow hung on a ridge, so it was the stem I had mistaken for a wave-lashed rock, but she sloped downward until the stern was submerged some ten fathoms.

Then we saw what made the *Rocas* eerie. Around her shattered sides, bones carpeted the sea floor—thousands of bones. Seeing huge jaws and teeth, I realized they were of horses or cattle and not of humans, but nevertheless my imagination sped to the sharks that such a cargo would attract.

I envisioned the scene: the *Rocas* striking the reef, passengers and crew abandoning ship, the animals whinnying in terror, the sharks moving in for the kill. The same thoughts were racing through Mel's head, for he told me later, "You could almost hear the hoofs pounding the decks!"

Before going over the side, Paul had demonstrated an underwater scream to use if sharks appeared. Sounding rather like the "Rebel yell" of the Confederacy, it had a dual purpose—to warn other swimmers and turn the beasts.

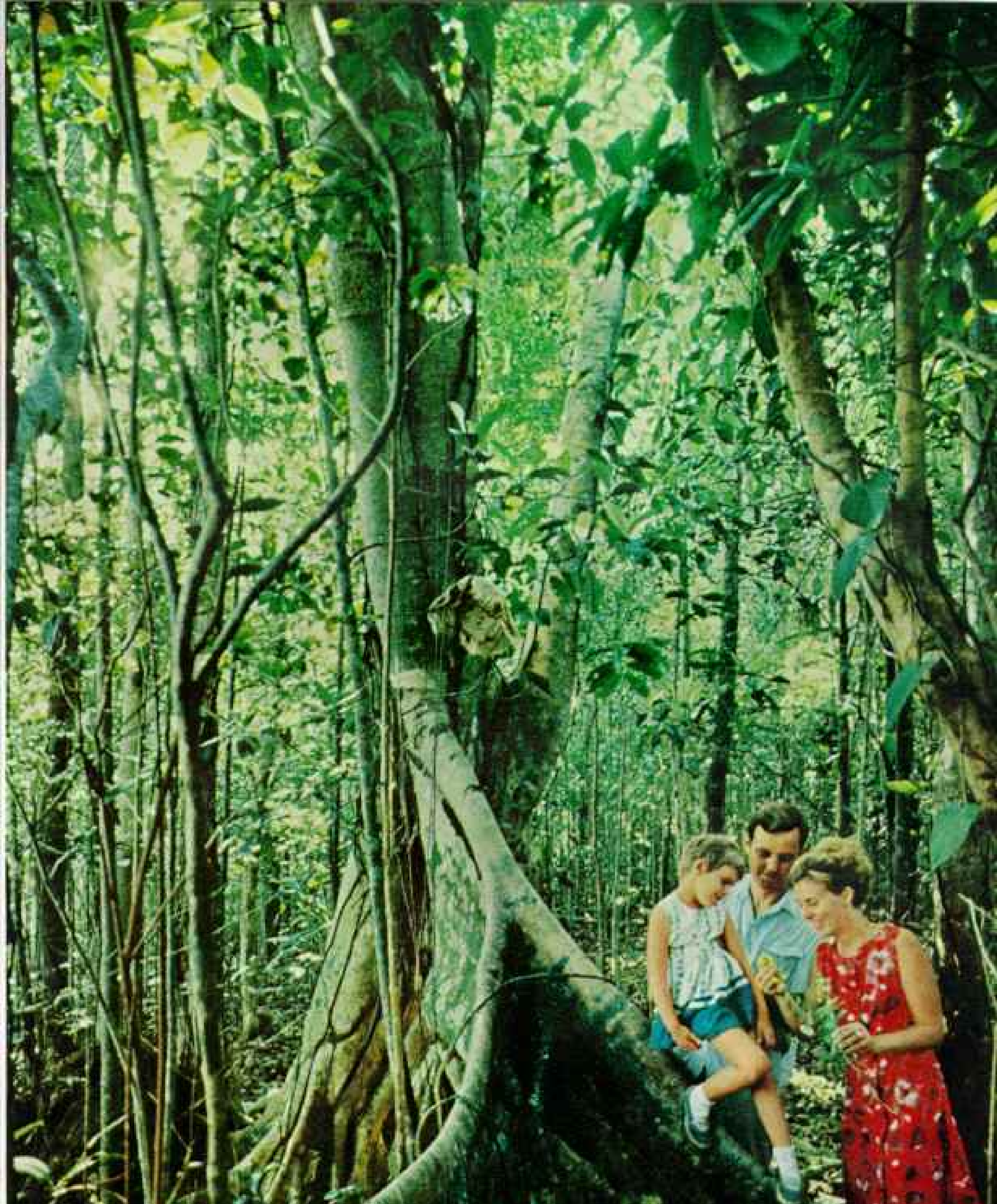
Just as my thoughts were most gruesome, I heard the yell. Paul had seen a shark. Had an official timer been present, Olympic records would have fallen as I swam back to the boat!

Homeward bound, Paul explained the grisly cargo of the *Rocas*. "She carried dried animal bones to be converted to phosphates, not living animals. Otherwise, nothing would remain." But even with this explanation, the spooky feeling persisted.

I had long looked forward to revisiting my friends Louis and Beth Bigelow on Guana Island. After searching unsuccessfully

Turkey-foot roots of a jungle tree grip rain-forest floor on Tortola. The tangle clings like a topknot to the British Virgins' tallest peak, 1,710-foot Mt. Sage. Jackson Hole Preserve, Inc., a foundation for conservation, donated money to island officials to preserve this remnant of the rain forest that once covered these islands.

Lush flowers abound in the Virgins, including oleanders (below, from top), coral bush, and Turk's-head cactus.



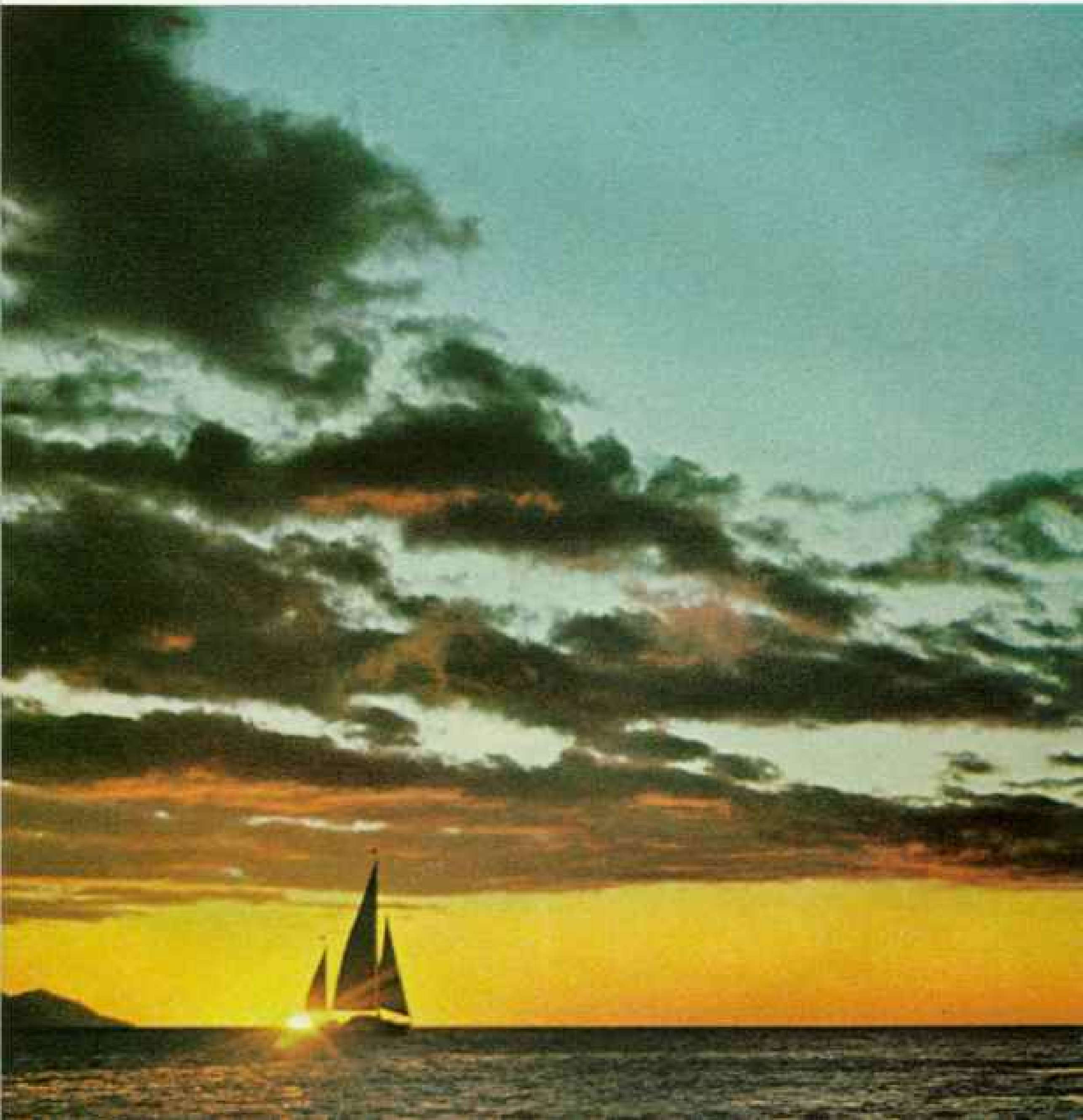
through the South Pacific for a tropic island they could develop into a home as well as a club limited to acquaintances, they had come to Guana in 1935. An old man from Tortola remembered hearing talk of ruins on the crest of a hill when he was a boy, and a climb disclosed the foundations of a plantation house built by a Quaker settler. This formed the basis of the Bigelows' island home.

They asked us to stay for dinner. While we were talking on the beach, a flock of pelicans "pointed" the first course. Leaving rock perches surrounding White Bay, the ungainly birds gathered to crash-dive the shallows. Small fish leaped in shoals.

"Do you like whitebait?" asked Beth Bigelow, referring to the English delicacy of crisply fried whole fish, minnow-size, eaten almost like potato chips.

While Louis supervised the netting, we decided on a busman's holiday—a sunset sail. Guana Island takes its name from a rock formation at one corner, a silhouette of the head of a giant iguana, which I wanted to show Mel and Win (below, right).

As we neared, sunset colors tinted the sky,



and the photographer in Win took charge. He and Henry cast off the Whaler to make pictures. Aboard, we changed jibs to a freshening breeze. The sun dipped below the horizon, and night shadows gathered on the slopes of Tortola while *Finisterre* drove along rail down—a truly perfect sail.

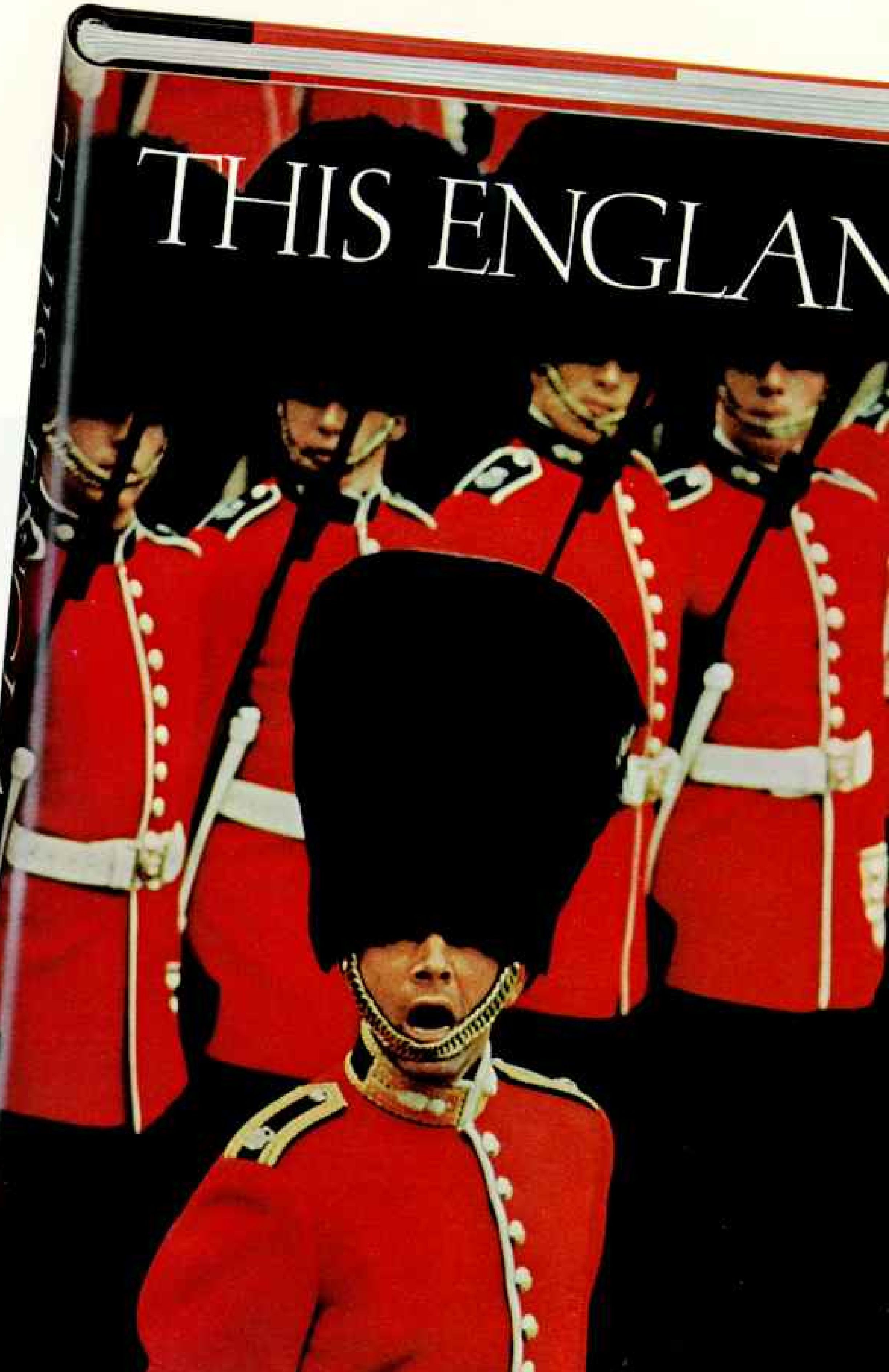
Next morning we slipped away from Guana under a cloudless sky, as a thousand points of sunshine glinted on wave crests rolling in from the open Atlantic. Before noon we explored our last Leeward Island, Jost Van Dyke, cruelly scorched by the drought, but with a magnificent harbor for a final swim and cockpit lunch.

While *Finisterre* moved gently to small swells, a champagne cork popped in reluctant celebration. For though we would soon continue to St. John and St. Thomas, in the United States Virgin Islands, and then would thread a passage through the Bahamas to the U. S. mainland, our cruise of the Windwards and Leewards as we had planned it had come to an end. Our wake astern had become part of the West Indian tapestry, part of a sailor's memories.

THE END

GOLDEN AS MEMORIES OF A PERFECT SAIL, *sky and sea wrap* **Finisterre** *in vesper light, and shadowed islands drop astern. Thrusting its snout toward distant Tortola, the iguana-shaped rock that gave its name to Guana Island witnesses the last leg of the Leewards cruise.*

EKTACHROME BY WINFIELD PARKS © N.G.S.


THIS ENGLAN

Announcing the Society's newest book, THIS ENGLAND

"this precious stone set in the silver sea"

Moore

Armstrong

Grosvenor

Ellis

Wood

By MELVILLE BELL GROSVENOR, LL.D., Sc.D.
President and Editor, National Geographic Society

WILLIAM SHAKESPEARE gave us the title for the new 440-page book which the National Geographic Society proudly announces this month, and England itself gave us the inspiration.

"This blessed plot, this earth, this realm, this England. . . ."

Down the centuries England and its "happy breed of men" have wielded an influence out of all proportion to size. From this island off the coast of Europe—only 1/2500th of the surface of the earth—adventurous and energetic men have spread their language and their laws, their ideas of liberty and human worth, to the farthest inhabited reaches of the globe.

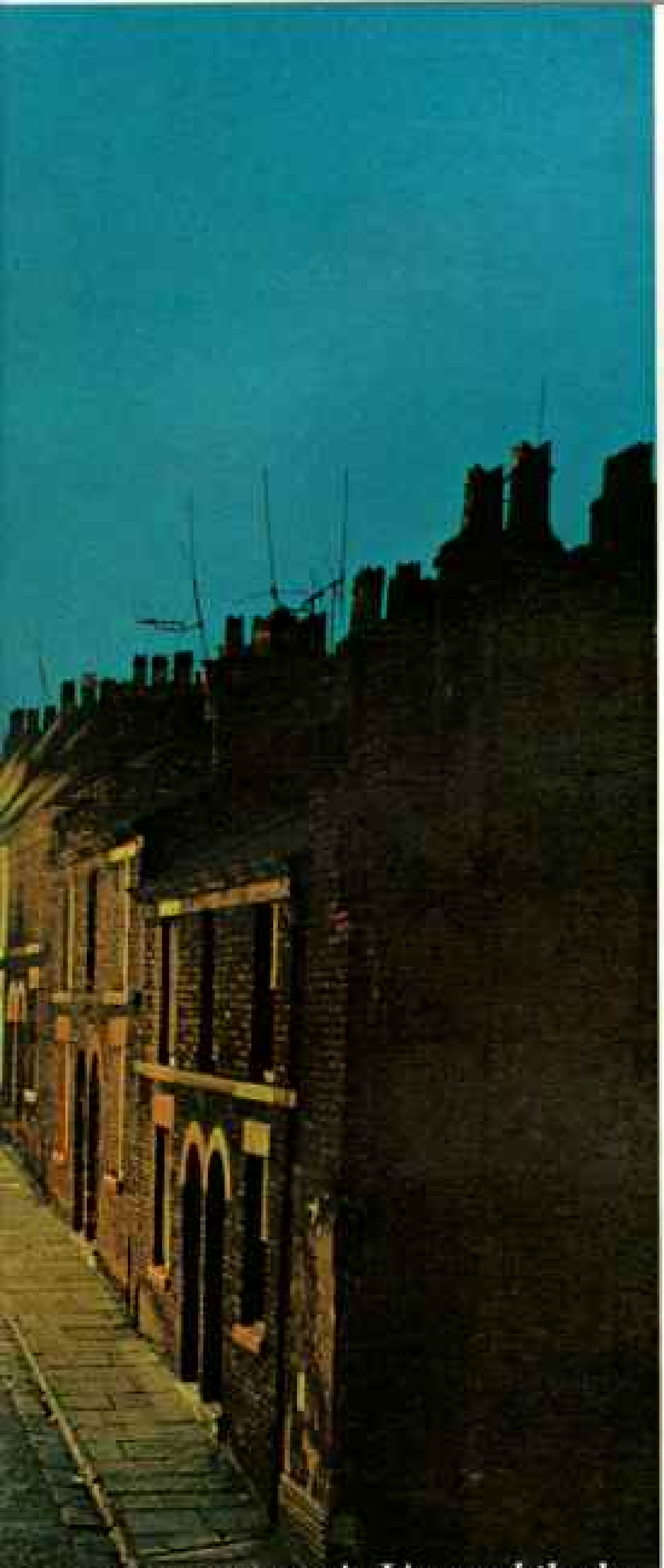
To most Americans, a journey to England becomes, in a sense, a home-coming. This royal land is part of our heritage. Ten of its kings and queens were our monarchs too, and we share a priceless cultural legacy.

Celt, Roman, Saxon, Norman—all left their mark on the land. These ancient battlements withstood a siege. On that field "manie a nobil erle and valrous knyghte . . . fell . . . in bloudie fyghte." In this chamber a king was foully done to death; there an archbishop martyred. At this table, with this pen, a poet wrote his masterpiece. Magna Carta is not just a phrase; it's a parchment you and I can read—and a living symbol of the freedoms and traditions we all share.

Not only the land but the seas round about reflect a great and adventurous heritage. With Alan Villiers, who writes two vivid chapters in the book, I have cruised this moat of liquid history, and what I remember best is an eerie feeling of having touched hands with Lord Horatio Nelson himself!

In a sturdy ketch we had plowed waters the Spanish Armada had sailed. We had put in at Devon ports that Drake and his sea dogs knew, and called at Cornish coves once haunted by smugglers. Now the wind sang in the rigging

Pageantry, glory, tradition—a tranquil land, a courageous people. All England, which has given its language, its free institutions, and its sons to many other countries, fills the pages of the National Geographic Society's new book, *This England*. Grenadier Guards parade across the cover. Pride of heritage produced family coats of arms; the College of Arms in London maintains records of thousands of such crests.



LONELY STREET *in Liverpool throbs with the beat of a rock-'n'-roll combo, but silence cloaks the mysterious monoliths of Stonehenge, mute reminders of prehistoric times on Salisbury Plain. Quiet also reigns in the gentle Cotswolds, a rolling region of cottages and clear streams. Timbered pub gives the Englishman his round-the-corner club; he indulges in his passion—cricket—on the village green. Pages at right are typical of the 440 in the Society's new book.*

as the ketch hissed across Spithead toward Portsmouth, and I thought of other ships that had come this way.

At Spithead, in 1346, Edward III gathered 700 ships to move his army to France and fight the Battle of Crécy. Capt. William Bligh's ill-starred *Bounty* sailed from Spithead in 1787, and Lord Nelson's *Victory* lay at anchor there in 1805 when he stepped through Portsmouth's sally port and strode down the wooden steps to his admiral's barge, leaving England for the last time.

At the helm in dripping oilskins, I came out of my reverie and peered at the darkening harbor of Portsmouth ahead.

Suddenly dark spars towered above us. Nelson's *Victory!* We slipped almost under the transom of the proud old flagship of Trafalgar, which England preserves as a national shrine. What a thrill to see her, light streaming from the great cabin as though the admiral himself were aboard!

Just before the battle that cost him his life—but cost Napoleon his hopes of invading Britain—that doughty sea fighter had said, "England expects that every man will do his duty." Grim words, uncompromising words, and as memorable as those of another great Englishman faced with the threat of invasion: "I have nothing to offer but blood, toil, tears and sweat."

More Color Than in Any Other National Geographic Book

How to encompass all this, and much more, in a book? For many months our authors and photographers sought the essence of England in all its diversity. They returned with a treasure of fascinating lore and an incomparable photographic record. *This England's* 620 full-color pictures add up to more color than the Society has ever before published in a single volume.

And the writing—I wish I could convey its flavor, as edited by that perfectionist, Merle Severy, brilliant Chief of the Society's Book Service. Here Englishmen may learn much they never knew about their country—such as the fact that No. 10 Downing Street was built by the second graduate of Harvard—and the rest of us will get a new understanding of England and the English. Want to understand cricket—or even play it? Baffled by British currency? Do you know how dukes, marquesses, earls, and barons rank in the peerage? *This England* will tell you.

Much of the mighty sweep of English history spreads before you in the book's opening "Pageant of a Storied Realm." Then ten different authors take you to every corner of England.

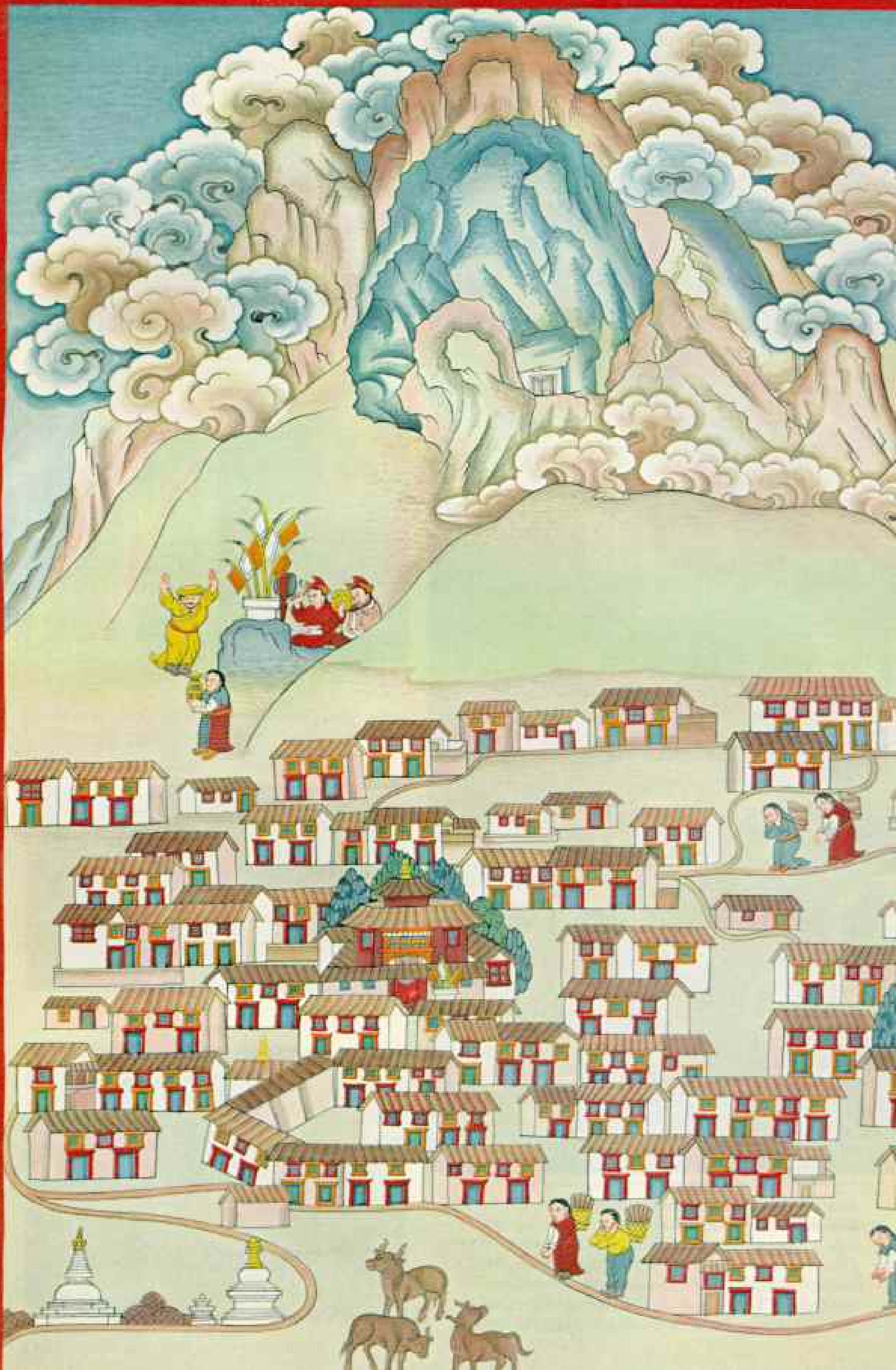
Some may feel a special nostalgia for London; others for the Lake District or the Midlands, or wherever they were stationed during the war. To friends of those days, we hope, *This England* will prove the perfect gift. But this is a book for all ages and for those who have never been to England, as well as for those who know it well.

I admit to a deep personal involvement in *This England*. Like many Americans, I am proud to trace my roots in English soil and was delighted to read in a classic of heraldry that with William the Conqueror 900 years ago "came one *Gilbert le Grosvenour*,"

Steaming mounts, milling hounds, and a stirrup cup to warm the blood—members of the Quorn (pronounced corn) Hunt prepare for the chase over Leicestershire's grasslands. England

ACCEPTANCE BY NATIONAL GEOGRAPHIC PHOTOGRAPHER KATES LITTLEDALES © N.G.S.

wears her traditions proudly. Pages from the book: Dignitaries celebrate Shakespeare's birthday with a solemn parade through Stratford-upon-Avon. Narcissus bouquet brightens a schoolgirl's garb. York's historic Micklegate Bar once bore the severed head of the Duke of York. Venerable Norfolk wherry, the 100-year-old *Albion*, leads racing sloops across the Broads.



Sherpaland, My Shangri-La

By DESMOND DOIG

EVERYONE, AT SOME TIME, has a vision of a fabled valley cradled in high mountains, where the harsh realities of existence are unknown. In his famous novel *Lost Horizon*, author James Hilton imagined such a place; his name for it, Shangri-La, has become a synonym for all such places of retreat, peace, and beauty wherever men imagine them.

For me, the closest thing to a real Shangri-La exists in exactly the setting of Hilton's novel, in unforgettable Solu Khumbu, a high world of the Sherpas, below Mount Everest in distant Nepal.

There, in a winding ribbon of emerald valleys, each more beautiful than the last, is a paradise into which outsiders have only begun to stray. The glistening summits of earth's highest mountains watch over it. To the devout Buddhist Sherpas, they are mighty deities: Chomolungma, "goddess mother of the world," as they know Mount Everest; Makalu, goddess of destruction; Taweche, about which heavenly horses gallop, sometimes stamping hoofprints into the rock; great Khumbila, his influence so all-embracing that one has only to speak his name to be comforted.

Pious Sherpas Pray to a Snow-capped God

"Sho, sho," chanted Ang Temba, my Sherpa companion, *"Sho, sho* Khumbila—All hail to Khumbila." He addressed this Sherpa prayer to the vast tower of snow-veined rock standing before us in silhouette against the icy fortresses beyond.

We had stumbled to the top of a 15,000-foot pass. From that wind-whipped height, I again looked down upon the calm valleys of my Shangri-La.

Ang Temba reverently placed a stone on a pile of others, a cairn as old as the travels of his people. Collecting wild flowers—rhododendrons and azaleas—he placed them on top of the cairn.

"Sho, sho," he prayed again. I, too, lifted a stone onto the cairn and offered my own thanksgiving: *"Sho, sho* Khumbila."

Then we descended into the gorge of the foaming Dudh Kosi, the

With stylized simplicity, the Sherpa artist Kalden portrays the Himalayan homeland of his people, brave, devout, and incredibly hardy mountaineers. Clouds with buttonhook eyes wreathe the peak of Khumbila, so sacred that no Sherpa may stand on its summit. Above the village of Khumjung, lamas and laity pray before a flag-bedecked shrine. Stair-stepped houses crowd close to a Buddhist temple. Women trudge through the streets with backpacks, while cattle roam near chortens harboring revered relics.

Up, up, up they climb! As sturdy as their menfolk, Sherpa women develop lungs and legs attuned to the heights. Unperturbed by thin air and rugged trails, they carry heavy loads for a mountaineering expedition. Broad headbands help support the

KODACHROME BY WILLIAM SIX © NATIONAL GEOGRAPHIC SOCIETY

weight. Baby sleeps as mother walks barefoot, her toes gripping the rocky path like fingers. Over drab homespun she wears a striped apron, and bone bracelets circle her wrists. T-bar hiking staff doubles as a rack for her load when she rests.

Milk River, born on the Himalayas' frozen flanks. We went down through a forest of oak, pine, rhododendron, and magnolia with blossoms so profuse and luminous against the dark fabric of the trees that they seemed almost artificial.

Ang Temba began to sing, and suddenly the forest, the valley, the whole magnificent, tumbled world of high mountains was full of song and laughter, as a procession of Sherpa porters below us took up the song. They clapped and whistled. The sun burst in a million golden splinters through the trees. Khumbila, framed in foliage, grew mightier as we slipped and slithered to the valley floor. To the Sherpas, the sight was one of boundless joy. They were home again, in their own valleys, among their own gods.

Schools Betoken Climbers' Gratitude

For me, it was also a home-coming. Though I had known Sherpas since childhood, it was not until the winter of 1960-61 that I first visited their homeland, as a member of a scientific expedition led by Sir Edmund Hillary (page 572). Our object was to study the effects of high altitude on the human body and brain. We also gave a school to the village of Khumjung as a token of gratitude to all Sherpas who had ever served with foreign mountaineering expeditions.*

Now, with Ang Temba, I had returned on a mission close to my heart: to help build two more village schools, at Pangboche and Thami. Sir Edmund had interested the World Book Encyclopedia in long-term sponsorship of the program.

We arrived at Khumjung on an April morning during Lhaptsang, a ceremony in honor of Khumbila, and the mountain accepted the homage with serenity. Darkness still hid the peak as the first tapers and incense fires were lighted and the first prayers intoned. Day came. The skies faded from purple to green to gold, and then to a shimmering turquoise. Khumbila wore ceremonial scarves of mist about his gray shoulders.

In late afternoon and evening it snowed, very gently, so that Khumbila changed from sapphire and gray to white, then slowly vanished in thickening snowfall as night fell.

This land of beauty where my Sherpa friends dwell is a 600-square-mile area in Nepal, averaging 15,000 feet in altitude. To the north rears the curving rampart of the Great Himalayas—Gauri Sankar, Cho Oyu, Gyachung Kang, Everest, and Makalu (map, page 556, and painting, pages 559-61).

The turbulent Dudh Kosi rises in this massif and plunges southward through Nepal. The land of Sherpas lies almost entirely within its green valleys, extending through three areas of Nepal—Khumbu, near the Tibetan border, Pharak, farther south, and Solu. But the Sherpas seldom mention Pharak; they speak of their homeland as Solu Khumbu.

Every far-ranging Sherpa has a village that he regards as home, even though he may be away from it herding or trading for more than six months of every year. The most important families in his village are usually "true Sherpas" or "old Sherpas," as members of the 18 traditional clans are called. Other residents include mixed Sherpa-Nepalese families and immigrants from Tibet.

Marriage is not permitted within a clan. A man sometimes has more than one wife, or a wife may have more than one husband.

"Snow Tigers" Lived in High Khumbu

In cloud-wreathed Khumbu, habitable only in the sheltered folds of the mountains, are the villages of the world-renowned Sherpa porters and companions—those "Tigers of the Snow" like Tenzing Norgay, who with Hillary in 1953 made the first ascent of Everest; Nawang Gombu, the only man to climb Everest twice (page 564); Ang Kami and Phu Dorje, also Everest summiteers; and a hundred others whose names will forever belong to the history of Himalayan climbing.†

I will never forget my first sight of Khumbu. I was standing beside Sir Edmund on the Tesi Lapcha, a high pass that is a gateway to Sherpaland. I felt his excitement when, after

(Continued on page 554)

*See "Wintering on the Roof of the World," by Barry C. Bishop, and "We Build a School for Sherpa Children," by Sir Edmund Hillary, K.B.E., both in the October, 1962, NATIONAL GEOGRAPHIC.

†The story of the British climb, first ascent of Everest, appeared in the NATIONAL GEOGRAPHIC, July, 1954; the American climbs, in the issue of October, 1963.

Swallow's nest in the eaves of the world, Thyangboche Monastery offers its 30 lamas an idyllic setting for a life of contemplation. Around the wooded 13,000-foot-high spur rear magnificent peaks whose snowy caps catch the first rays of sun and hold them to the last. Only 15 air miles from Mount Everest, Thyangboche has welcomed all expeditions moving toward the monarch from the south.

World traveler, champion dancer, and elder of Khumjung village, Khunjo Chumbi visited Europe and America in 1960 with the author and Sir Edmund Hillary. An instant success in the United States with his robes, boots, and Tibetan hat, he appeared on television and sent gifts to President Dwight D. Eisenhower.

Mother nak—female of the yak—nuzzles her newborn calf in a lofty meadow. The beasts provide milk for butter, wool for clothing, leather for shoes, and dung for fuel. Yaks pack supplies across the passes and plow fields hard-won from the mountainsides.

Fanfare of 15-foot horns welcomes the visiting abbot of Thyangboche Monastery to Thami village. Lamas wear wool hats shaped like the helmets of ancient Greeks. An unnamed peak guards the 19,100-foot-high Tesi Lapcha pass to Sherpaland.

PHOTOGRAPHS ABOVE AND LEFT BY LISA M. BISHOP © N.G.S.

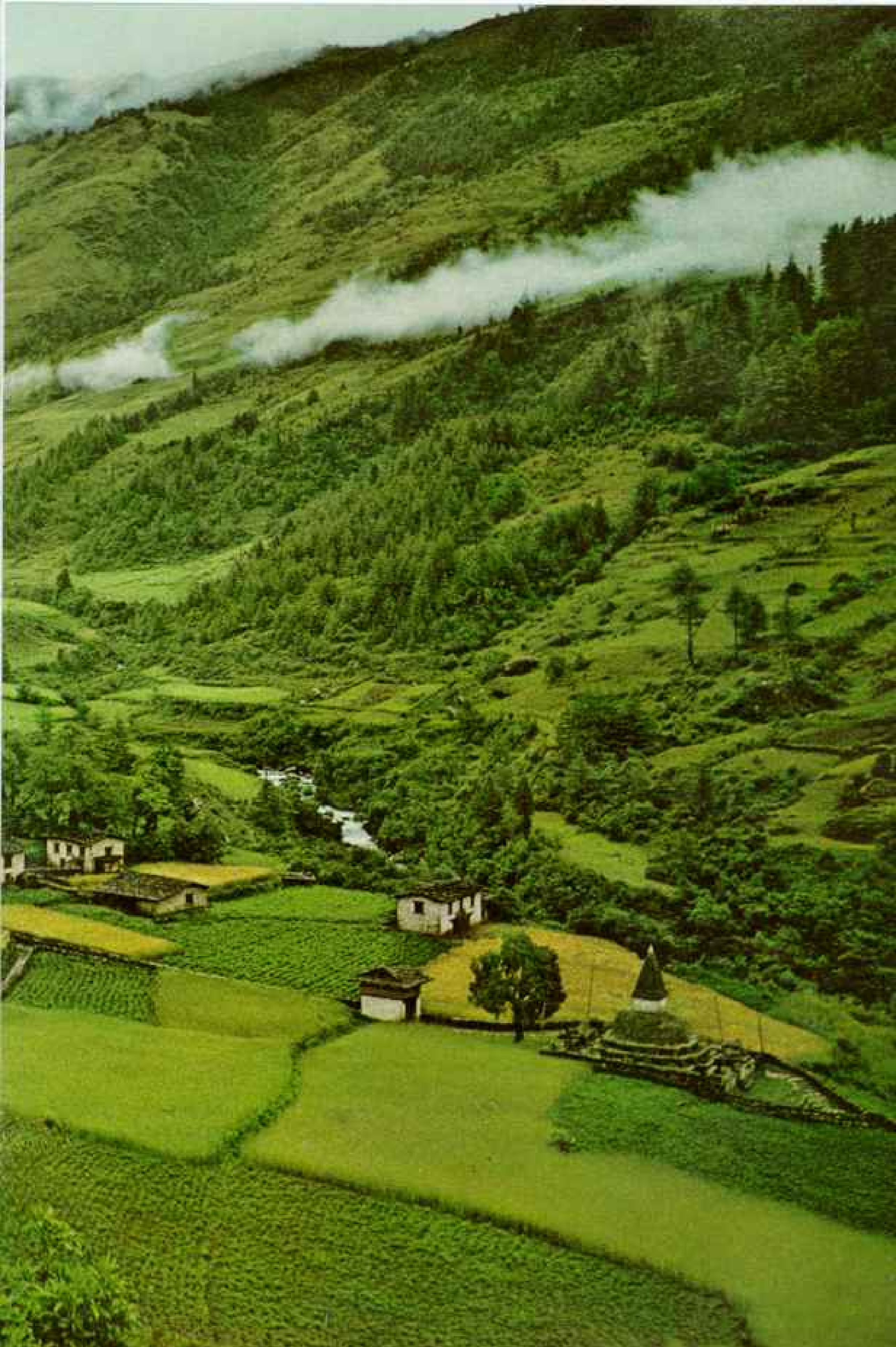
"**Thick as gruel** and with a powerful kick," author Doig describes chang, homemade Sherpa beer brewed from grain or potatoes. The girl ladles out the beverage to thirsty porters.

Drums pound, trumpets blare, and prayer wheels spin as villagers of Pangboche await the arrival of the Rimpoche (pages 566-7), head lama of Thyangboche Monastery, revered as the reincarnation of its founder. Banners, whipping in the wind, emerge from the village temple only for such gala ceremonies.

Modern-day David, a Sherpa boy rounds up yaks with a sling woven from the animals' own hair. Shouting and swinging, he pelts strays and laggards as far as 200 feet away to drive them back into the herd.

Green as Ireland, its pastures streaked with clouds, the village of Junbesi sits at 10,000 feet amid fields of wheat, barley, maize, and potatoes. Rock-walled trail leads north to lofty Namche Bazar, the unofficial Sherpa capital.

552



a difficult glacier crossing, we looked down upon the valleys of Khumbu—emerald slashes amid the purple-and-white confusion of the mountains. A gale howled about us at 19,000 feet, but down there, in that distantly alluring world, it looked calm and peaceful.

Sir Edmund pointed at a far-off mountainside and said, "That's Mingbo, our base, and down there, behind that ridge, is Thyangboche Monastery. And about there is Khumjung, where most of our men come from."

I could not see a village then, but a few days later we topped a small pass and there below us, huddled at the base of Khumbila, were the rock-and-shingle houses of Khumjung (painting, pages 544-5).

The village, aflutter with prayer flags, seemed to shiver in the morning cold. The houses waded in fog. Smoke curled from under their eaves and poured slowly onto terraced fields to form a pool at our feet. Through it, like a pier in a mother-of-pearl sea, sliced a prayer wall punctuated by elegant stupas, or towers, and a ceremonial gateway.

Yaks plowed a field. Women raked a pile of dried peppers the color of blood. A procession moved toward a dark grove of trees in which stood the Buddhist temple—squat, ocher, topped by a golden finial. Sounds crept out of the fog: dogs barking, a chapel bell, the wail of a sacred trumpet, a child crying, laughter, the murmur of prayer.

Travelers' Welcome: Scarves and Beer

Men and women welcomed us at Khumjung's gateway with scarves and pots of chang. The giving of scarves at welcome and parting is a tradition brought by the Sherpas from their original homeland in eastern Tibet. Chang, Sherpa beer made from potatoes or grain, flows at the slightest provocation.

"Here," cackled an ancient crone, offering me a bowl overflowing with the thick white brew. "You know my son Temba. He tells me you are his sahib. Greetings, greetings."

I hesitated a moment, especially since Sherpa custom demands the draining of a cup three times. Fortunately, the brew was a good one, tasting like sweetened Western beer.

That night we were wined and dined by the village elders of Khumjung and its close neighbor Kunde. Seldom have I seen four more colorful characters—Nima Tashi, burly and bronchial with fat laughter, a turquoise earring dangling from one ear; Dorji Mundo, thin and wiry; Gnana Chumbi, "headman" of both villages, pale and haughty under a wide-brimmed felt hat; and our host, Khunjo Chumbi, of the unexpected blue eyes (page 550).

Yaks and People Share Sherpa Houses

Khunjo's house, like all Sherpa houses, was made of stone and rammed earth, with a rock-and-shingle roof. The dwellings are generally double-storied and have unglazed windows on one side only. The ground floor, used for storing firewood, fodder, and other things, is where the livestock live in winter.

Never wander into a Sherpa house after dark without a light. If you are not eaten at the door by a ferocious Tibetan mastiff, you are apt to fall over a sheep or be butted by a yak. The stairway is nothing but a notched log, worn and slippery from constant use—a death trap at night.

Upstairs, a large room stretches the length of the house; it is usually partitioned to allow a small chapel and storeroom at one end. The focal point of the house, indeed of Sherpa life, is the *thap*, or open hearth, found at the top of the log stair. Here is the master bed, piled with gay Tibetan rugs. Here the women tend the children and cook. And here the men of the house drink, gossip, and entertain friends. A guest's importance is measured by how close he is seated to the thap.

Copper and brass household utensils—huge water containers, small pots, chang bottles, tea strainers, long-spouted jugs for pouring votive oil and water into cups on the family altar—rest on wooden shelves at the rear of the room. Beautiful things, hand-beaten and hand-decorated, they glow warmly luminous in the dim light (pages 562-3).

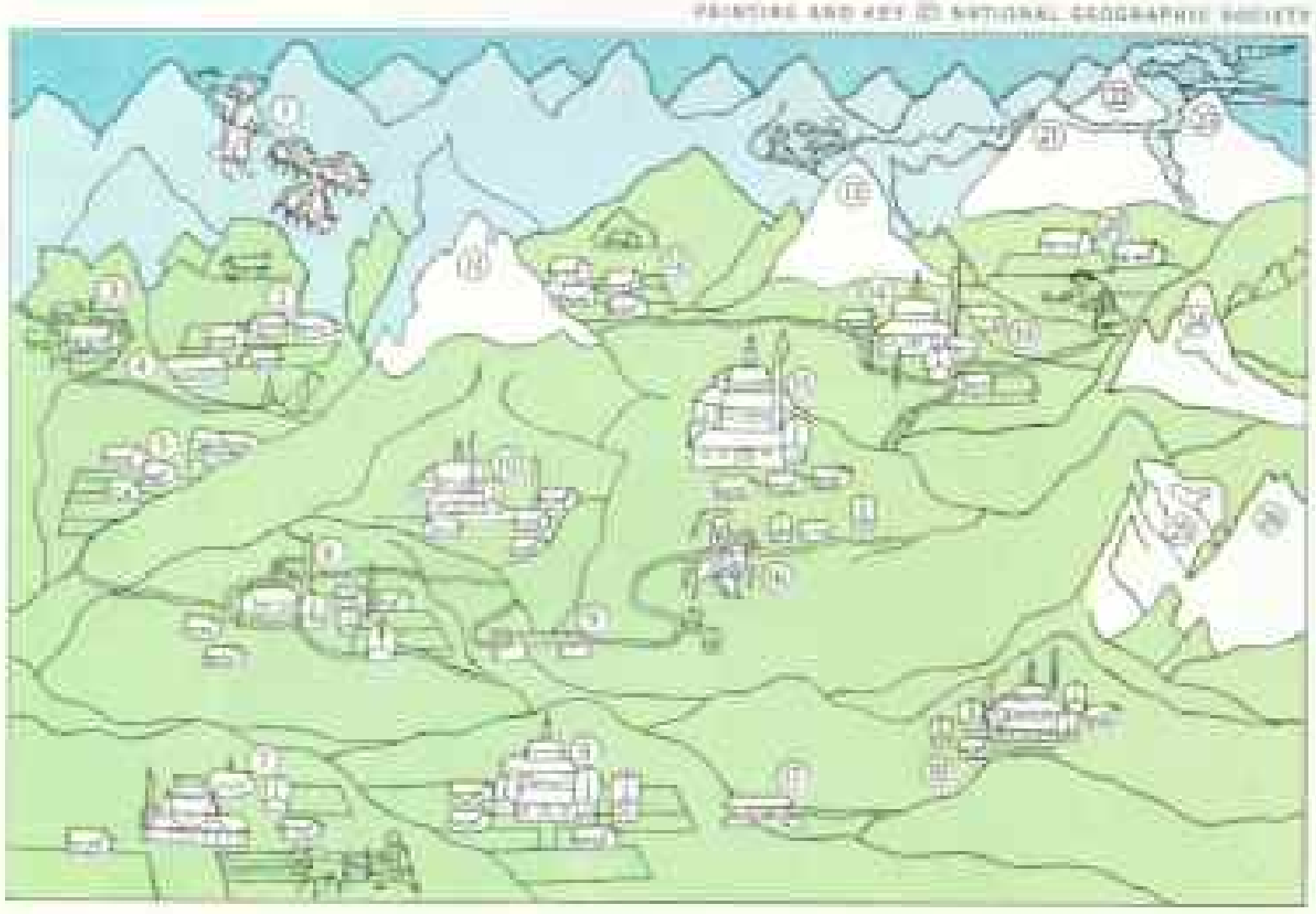
Pressure lamps borrowed from our expedition's mess tent lit Khunjo's house. It was full of smoke, for Sherpa houses have no chimneys. It seemed as if all the village squeezed into the room, as close as hairs on a yak's back. In no time people were dancing—men and women in a line, arms locked, singing and

(Continued on page 562)

Losing her shyness but never her smile, a young Sherpani reflects the natural gaiety of her people. She weighs but 85 pounds, yet can carry an almost equal weight during 15-mile-a-day treks. Climate, not rouge, reddens her cheeks. Her costume: wrap-around robe and striped apron, coral and turquoise earrings, necklace of coral and agatelike bead, and silver waist clasp.

World's highest mountains cast their shadows across ridges and valleys where some 50,000 Sherpas dwell (maps). Their name means "easterners"; about six centuries ago, say most Sherpas, their ancestors migrated to Nepal from eastern Tibet. To artist Pasang Sherpa, whose beloved land shows at right, ice-clad heights and green vales pulse with life and legend. Gods reign on the peaks, and the mysterious yeti, or "Abominable Snowman," stalks the slopes, bringing ill fortune, even death, to those who see it.

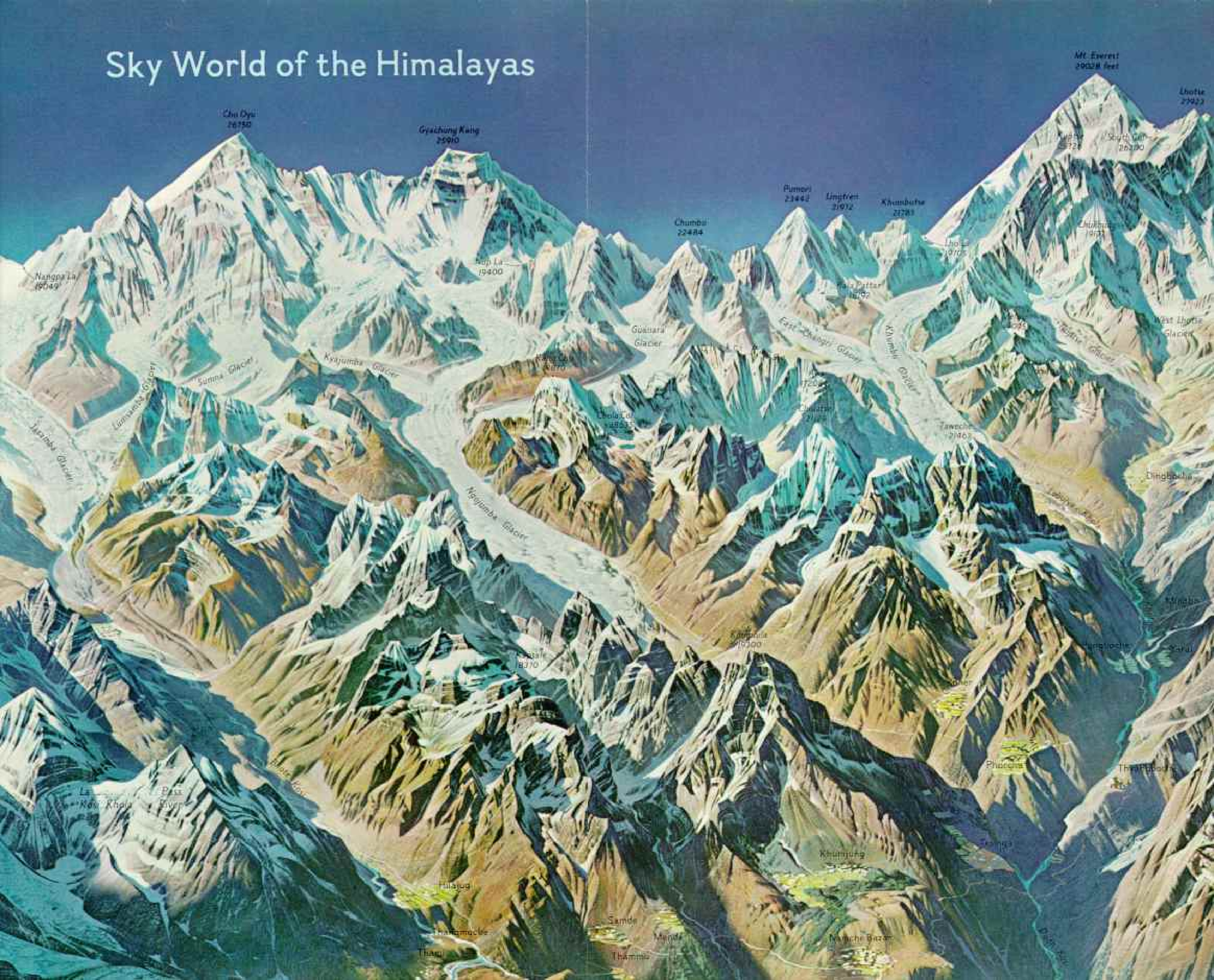
In another portrayal (foldout, pages 559-61), world-renowned panoramist Heinrich C. Berann paints a 35-mile sweep of Sherpaland. He based his work on personal observation and on more than 100 photogrammetric views made by the noted Himalayan mapper and climber Erwin Schneider between 1955 and 1963. The result, after 600 hours at the drawingboard: a unique portrait of the Everest region that Berann regards as the "crowning achievement of my 25 years of panoramic activity." With a technique that seems three-dimensional, he delineates gorges, glaciers, and aerie-like hamlets with a clarity no photograph could equal.



Key to painting at right: 1 Tibetan yak train crossing the Nangpa La (19,049-foot pass). 2 Thangmoche village. 3 Thami Monastery. 4 Thami school built by 1963 Hillary expedition. 5 Thami village. 6 Namche Bazar, "capital" of Solu Khumbu, and its temple. 7 Chyangma village. 8 Junbesi village and temple. 9 Bridge of rock and logs over the Dudh Kosi, the Milk River. 10 Khumjung village and temple. 11 Khumbila (19,300 feet). 12 Pheriche village. 13 Taweche (21,463 feet), about which gallop heavenly horses. 14 Pangboche village and temple. 15 Thyangboche Monastery. 16 Reincarnate lama of Thyangboche. 17 Covered bridge. 18 Jiwong Monastery. 19 Hillary school (1963) at Pangboche. 20 Summer village of Dingboche. 21 Nuptse (25,726 feet). 22 Mount Everest (29,028 feet). 23 Lhotse (27,923 feet). 24 Ama Dablam (22,494 feet). 25 Kangtega, the Snow Saddle (22,340 feet). 26 Thamserku (21,730 feet).

OPPOSITE PAGE FOLDS OUT

Sky World of the Himalayas




Makalu
27824
Makalu II
25120
Peak 38
Chago
22590
Cho Polu
Pethangtse
22080
Lhotse
Glacier
East Lhotse
Glacier
Imja
Ama Dablam
22494
Pyramid Peak
22430
Mingbo
Glacier
Mingbo Khola
Peak 43
22208

stamping their feet to the rhythms of Tibet.

The star was Khunjo Chumbi himself, who never stopped dancing. He had once won a dancing contest in Lhasa and was still, at 52, the highest stepper in all Sherpaland.

Women had donned their holiday best; the room blazed with heavy jewelry, old Chinese brocades, and rainbow-hued striped aprons. Older men wore their hair long, in plaits, beribboned and coiled about their heads. The four elders never removed their hats. Younger men, particularly our expedition Sherpas, sported hair styles of the West and wore their mountaineering outfits with obvious pride.

In the men's clothes could be traced almost every foreign expedition that had come to Nepal: scarlet Japanese overcoats, blue French jackets, British pullovers, New Zealand tweed trousers, German stockings, Swiss caps.

Tragic News Inspires an Epic Run

Those clothes were symbols of one of the important turning points in Sherpa life, the arrival of mountaineering expeditions. With lungs and legs at home in high altitudes, the men of Khumbu came to the world's attention as loyal Himalayan porters.

And little wonder that they became famous.

Roasting barley in a pan of hot sand, a shaven-headed nun keeps eyes shut tight. Later she will sift out the roasted grains and grind them to make *tsampa*, the bread of the high valleys.

Cheer of the hearth draws Nawang Sherpa, his family, and friends together in the second story of his home. Copper and brass pots gleam on shelves. In the churn at left, Sherpas mix chunks of pressed Tibetan tea with hot water, salt, and yak butter, a beverage "delicious or nauseating, depending on whether or not you're a Himalayan," says the author.

Feats of superhuman endurance are not exceptional in the Sherpa way of life. Our first expedition employed two young men, Rin Norbu and Lhakpa, as runners. They carried the mail between Katmandu and Khumbu, a 350-mile round trip usually requiring 32 days. They regularly completed the journey in 15 to 18 days—an incredible achievement. In any single day they had to climb and descend many thousands of tortuous feet.

One of the runs remains an epic. Rin Norbu received word that his home, in a valley beyond the Tesi Lapcha pass, had burned down. He persuaded his companion Lhakpa to join him in making the scheduled trek to Katmandu by way of his village rather than over the well-beaten track to the Nepalese capital. This meant crossing the high pass in the dead of winter, when venturing above the snow line is an open invitation to death.

Wearing only cloth boots and woolen jerseys over their Sherpa felt clothes, they successfully crossed one of the Himalayas' most treacherous passes. Luck obviously was with them, and with Rin Norbu's family as well. Though his house had been destroyed, none of his family had been hurt, and most of their belongings had been salvaged.

Calamity is always close in Sherpaland. A Sherpa working with me once received the news that his wife and two children had died mysteriously in a wayside house five days' journey away. I gave him leave to go at once, but he looked at me calmly.

"What's the use," he said. "There's nothing left, is there?"

The hard but beautiful Solu Khumbu breeds this stoic attitude. My friend from Solu, Nawang, once gave me an illustration of this aspect of the Sherpa character. He had been away from his wife and three children, traveling with me, for nearly eight months. A day's journey from his home, I suggested Nawang go ahead in order to have some time alone with his family. He looked surprised and declined my offer. As we approached the village, I pushed him forward and loitered deliberately to take in the view. Nawang waited also.

Finally we entered his house together and surprised his wife and children by the fire. She merely looked up and went on feeding the baby. "Make some tea for sahib," he told her as he helped me off with my pack. That was a Sherpa's home-coming—no fuss, no emotion, but a warm and comforting sense of welcome.

Two days later we departed with a similar lack of fuss. We simply put on our packs and walked out of the house.

Mountain God Banned Pigs and Chickens

If the Sherpa way of life seems hard today, the wonder is how they ever survived at all without the potato. The potato is now the staple diet of Khumbu; little else grows in the fields of that cold northern district. It is boiled, curried, fried, fermented to make chang, chewed like gum by women to feed to their infants, and thrown to the dogs. Mountaineers like it or lump it, since practically everything other than the potato and dried meat must be carried into Khumbu on a man's back.

How the Sherpas found the potato remains a mystery. It was brought to India by English settlers in the mid-19th century and perhaps, as one of my Sherpa friends said, "It must have been pulled out of a sahib's garden." Others are convinced the gods bestowed the potato in answer to the Sherpas' prayers.

Chickens and pigs are rarely kept by Sherpas in Khumbu, since the god Khumbila considers them unclean. They are not killed even when kept. As Buddhists, Sherpas refrain from killing or hunting any living thing. But they have nothing against eating meat once someone else has killed it. In most Sherpa villages, therefore, can be found a family of low-ranking Tibetan butchers who provide sheep, goat, or yak meat for a small fee or payment in kind. Where none reside, they are invited to visit once a year during the fall slaughtering season.

The meat is smoke-dried above the open hearth or laid out in the winter sun. But Sherpas wait at least a day before preparing the meat, to let the soul of the dead animal seek reincarnation, perhaps in human form.

Ironically, these people who live closest to earth's highest mountains believe that to scale the great summits is to intrude among the angels. Even migrating geese cause angry weather by flying over the heads of the mountain gods.

Tenzing Norgay told me after his historic climb with Hillary:

"At the top I immediately prayed. I offered some chocolate and biscuits I had with me, burying them in the summit snow. Then, as I thanked the gods for their great kindness, I also asked their forgiveness."

TENZING NORGAY

NAWANG GOMBU

Tigers of the Snow: Tenzing Norgay, climbing with Sir Edmund Hillary, attained Everest's summit in 1953. Flags of the United Nations, United Kingdom, Nepal, and India flutter from his ice ax. Only man to climb Everest twice, Nawang Gombu reached the top in 1963 with James W. Whittaker, carrying the flags of the United States, Nepal, and the Himalayan Mountaineering Institute, and the tricolor of the National Geographic Society. He ascended again in 1965 on the Indian expedition, with Ang Kami and Phu Dorje.

Antlike figures of Pemba Tenzing and Nima Tenzing (opposite) descend to Everest's South Col from the American expedition's Camp VI at 27,450 feet. Pyramidal Makalu, world's fifth highest peak, notches the sky.

ADDITIONAL BY BARRY C. BISHOP (RIGHT); JAMES W. WHITTAKER (ABOVE); © N.G.S.; (TOP) MOUNT EVEREST FOUNDATION

In my years of wandering about Solu Khumbu, I have come to understand and appreciate the Sherpas' reverence. It could hardly fail to exist in a land so awe-inspiring.

Nine miles from Khumjung is Thyangboche, the loveliest spot on earth to most who see it (page 548). Here, on a rock where Sherpas believe a saint alighted after flying through the air, has been built a monastery so perfectly attuned to its surroundings it might have sprouted from the earth itself.

And what surroundings! The pyramid of Everest thrusts above the high and dazzling Nuptse-Lhotse ridge at the end of a valley that seems an arm's reach away. Kangtega, the Snow Saddle, soars loftily to the southeast,

To the gods, the tributes of devotion: a lama blows a trumpet carved from a human thighbone (top); a venerable nun twirls her silver prayer wheel. Both invoke a benediction for all who prosper or languish within the six-spoked Wheel of Existence. "I am grateful, Chomolungma," prayed Tenzing at his moment of triumph atop the peak; his devotion strikes a responsive chord in the heart of the humblest highlander.

When the reincarnate lama of Thyangboche bestows his blessings on the faithful of Thami (right), villagers gather before his ceremonial couch and a table bearing the paraphernalia of worship.

so close that one can feel the breath of its avalanches. To the north looms Taweche, tether-post of the heavenly horses, a peak that still defies climbers. Khumbila, Ama Dablam, Kwangde, and Thamserku stand guard, tall sentinels of unyielding rock, mantled by eternal snow.

In a forest of stunted trees around the monastery, live musk deer and blood pheasant so tame they ignore passers-by.

Painting No longer Brings Profits

In the monastery dwells a lama regarded as the reincarnation of the monastery's founder, the Lama Gulu, who died of shock in 1933 when an earthquake destroyed the first building on the site.

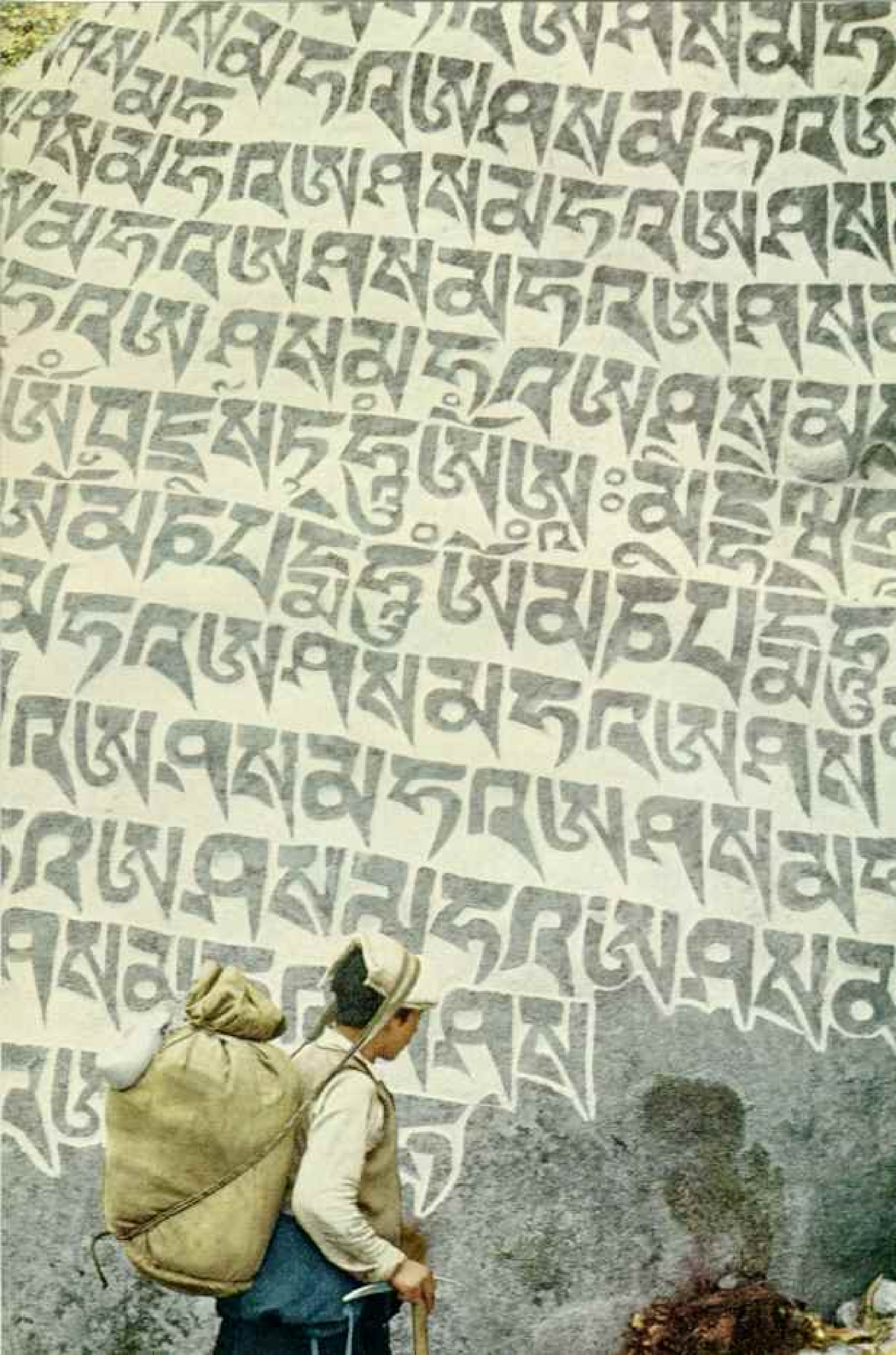
I once visited the Rimpoche, as reincarnates are known, in his beautiful, mural-decorated apartment at the monastery. We sipped Tibetan tea from antique Chinese porcelain cups. He is a charming and intelligent young man, full of wisdom and love, with a lively interest in the outside world (below). We discussed subjects as varied as space exploration and comparative religion.

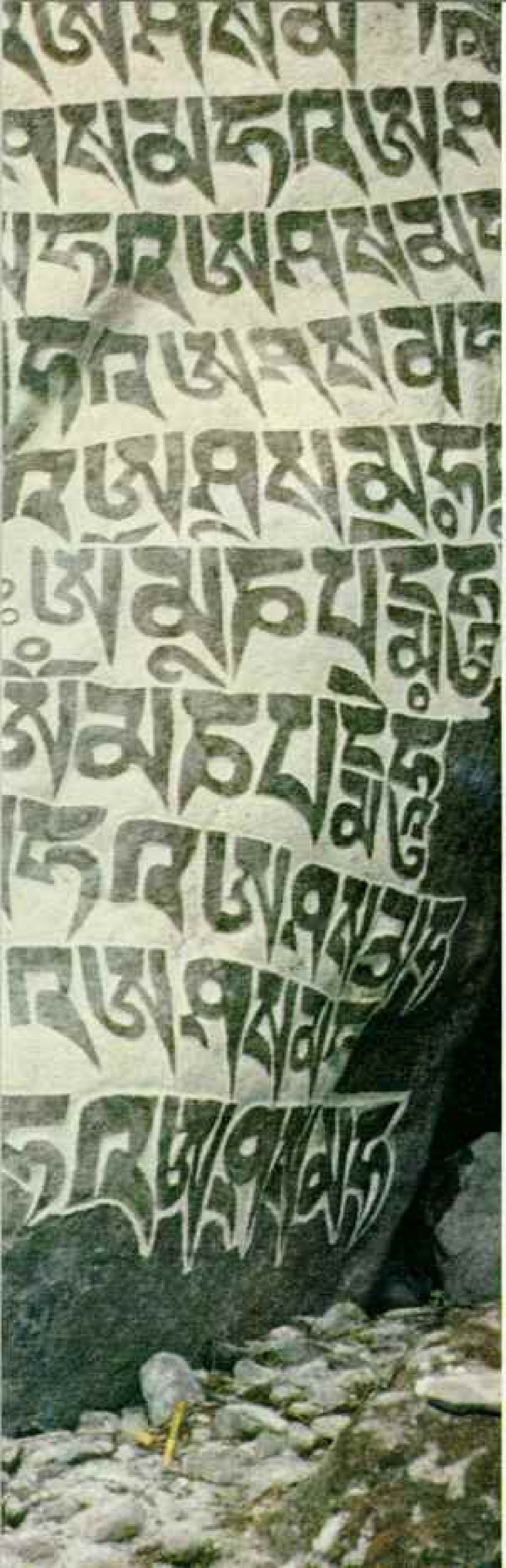
The Rimpoche had built a resthouse for visitors below the monastery, and had just completed a school offering religious instruction to all who desire it. Though educated in Tibet, where he spent many years, he is considered to be a Sherpa, from Namche Bazar, and his people are proud of him.

Many of the murals and images at the Thyangboche Monastery were created by the celebrated Khumbu artist Kalden. His son Pasang had been one of our porters during the 1960-61 expedition and was with us again in 1963 to help build the two new schoolhouses. The beauty of the work at Thyangboche prompted me to ask Pasang whether or not he also painted.

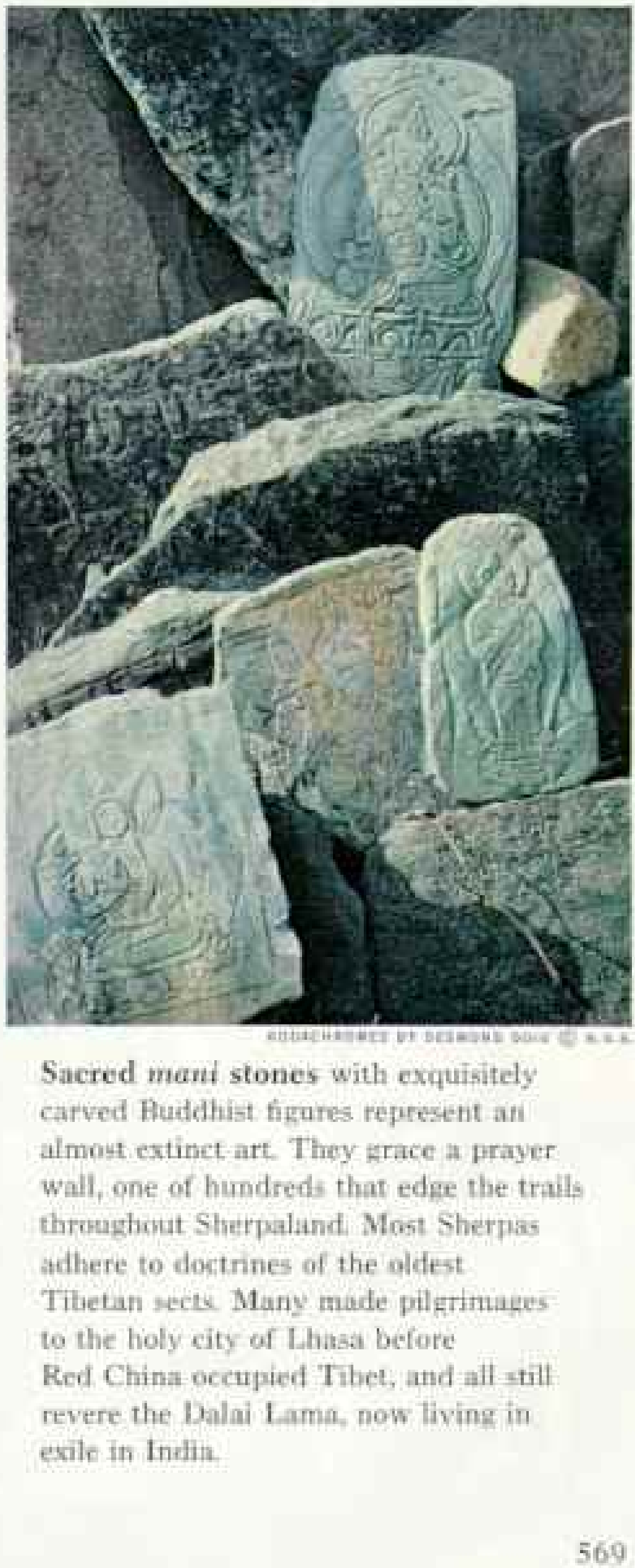
"Yes," he replied, "my father taught me. He is still painting, but I had to stop because there is little money in it now."

Pasang later took me to his father's house





Boulder big as a house carries a Buddhist prayer repeated line upon line —*Om mani padme hum*—"O the jewel in the lotus!" The rock's unknown carver, whether lama or lay Sherpa, may have sought to commemorate dead relatives or to cure an illness. He may have wished to promote the granting of favors or simply to speed himself along the path to nirvana. Regardless of purpose, the massive symbol of devotion lies rooted to the path where each Buddhist traveler can earn merit merely by passing it.



Sacred *mani* stones with exquisitely carved Buddhist figures represent an almost extinct art. They grace a prayer wall, one of hundreds that edge the trails throughout Sherpaland. Most Sherpas adhere to doctrines of the oldest Tibetan sects. Many made pilgrimages to the holy city of Lhasa before Red China occupied Tibet, and all still revere the Dalai Lama, now living in exile in India.

on the slopes of Khumbila, above Khumjung. The interior was the most beautiful in the village. The spacious chapel room was painted in gold and jewel-like tints that age and smoke had mellowed to a warm glow. Karpa Kalden sat by an open, latticed window, pots of color scattered about him, his canvas laced tightly to a wooden frame.

After much bowing and polite sucking in of breath, I asked him why he didn't make his son stay home and paint.

"He's happier outdoors," he said. "Besides, now that Tibet is closed, the great monasteries and the nobles there no longer commission art. That is all a thing of the past."

I commissioned Pasang to paint a picture of Khumbila. Later he did others of his village and his country. When his handmade brush of selected goat's hair proved too thick, he would pluck a hair from his own head to render the finest lines. Two of these beautiful works of art, by Pasang and his father, help to illustrate this article (pages 544-5 and 556-8).

Religious paintings of the Sherpas are

inspired by their devotion. Most of these people are Buddhists of the oldest sects of the Tibetan church. They brought their religion from their mother country, but in Nepal it has been further colored by folklore. Much of this springs from the visits of Indian sages, who crossed Sherpa country on their way to and from Tibet.

These saints left miraculous traces of their stay. I was shown rocks on which they had sat and left an imprint. One brought a dog along—for there are its pugmarks on a slab of stone. Another sat so long in meditation his image was cast on a cliffside like a permanent shadow. Local artists have embellished it with gaudy paint.

In a remote valley peopled only by four hermits, I came upon a large conical rock into which a one-room chapel had been cut. I was told that the rock had once been a saint's pointed cap.

Tales like this are legion in Sherpaland. Small wonder that Sherpas are given to a powerful belief in the supernatural; their way of life leads them to one of the loneliest jobs on earth—summering with their animals in the sky-high pastures.

In late spring Sherpas drive their yak herds to dizzying slopes above the villages, at altitudes as high as 17,000 feet. Dotted about the ranges are crude stone huts in which herders live out the summer, for the animals must be guarded against predators—the snow leopard and that mysterious something Sherpas vow is the yeti, the "Abominable Snowman."

KODACHROME BY JOHN H. MORRISON © N.G.S.

Forces of evil succumb to benevolent spirits as masked lamas enact stories from Buddhist scriptures. In late fall the three-day festival of Mani Rimdu brings hundreds of Sherpas to Thyangboche Monastery, where lamas perform in the courtyard.

Look Upon a Yeti's Face—and Die

"My son saw a yeti over there," an old man told me, pointing across a valley to a lonely mountainside. "At first, he thought it was a nun, because it was red like a nun's robes and walked upright like a human being. It was only when he drew near and saw its face that he knew it was a snowman. Now I fear he will die, since no one can look upon the face of a yeti and live."

Prophetic words! Returning some months later, I was surprised to find the son lying in a corner of the house. He was pale and terribly thin, with the shadow of death in his deeply sunken eyes. I asked the old man why he had not come to our expedition doctor.

"The boy will die," he replied casually. "The lamas have said so. He saw the yeti."

Happily, the boy responded to medicine I had with me. The parents were amazed but surprisingly matter of fact. My demon was obviously stronger than the snowman.

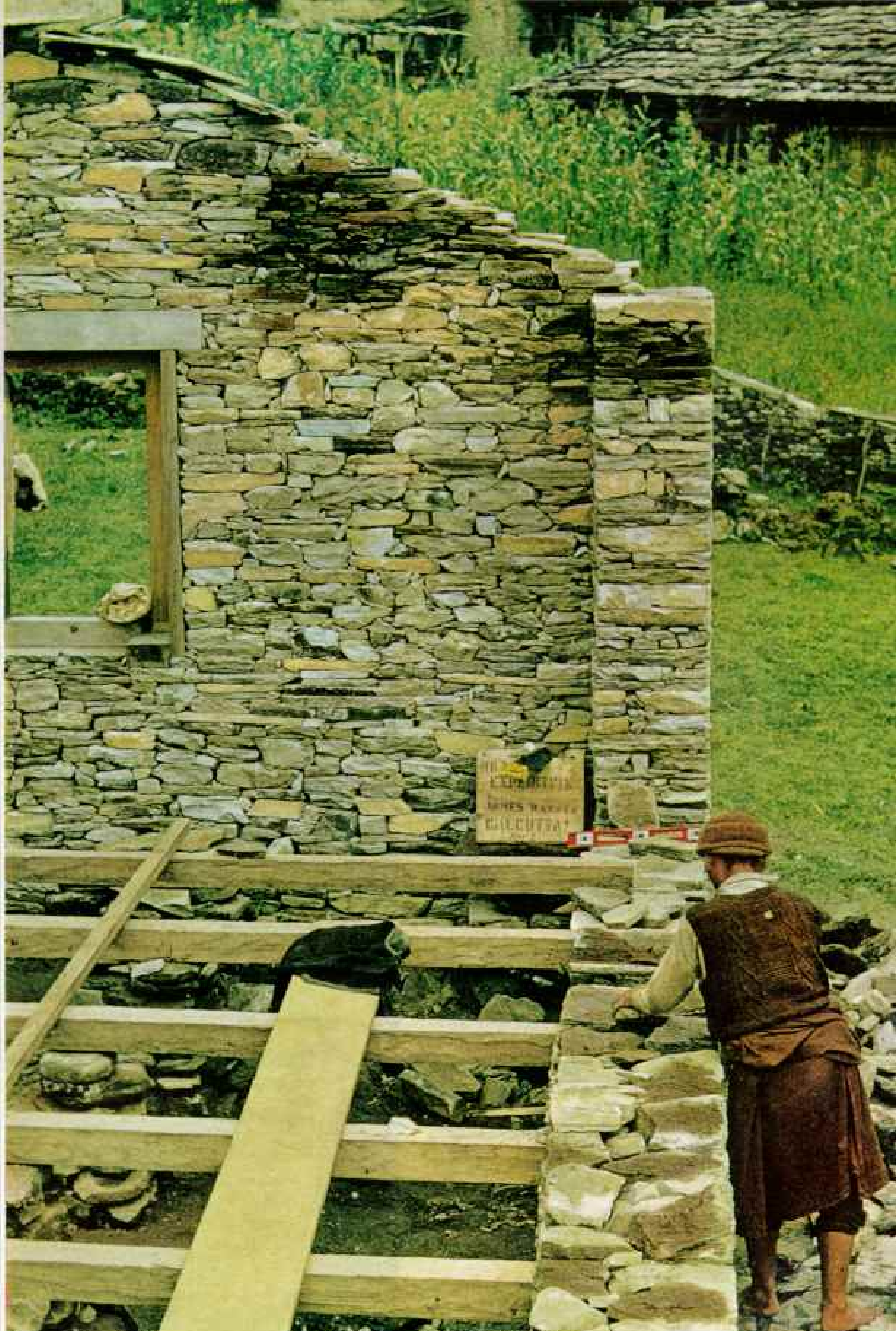
In the fall the lush summer grass that grows below the snow line is harvested for feed. The yaks are brought down from the mountain

Labor of gratitude: Anxious to reward the Sherpas for loyal and courageous service rendered to so many expeditions, Sir Edmund Hillary asked the mountaineers what one thing they most desired. "Schools," an old Sherpa answered. "Our children have eyes, but still they are blind."

Since 1961 a series of Hillary-led Himalayan Schoolhouse Expeditions, aided by World Book Encyclopedia and Sears, Roebuck and Company, have built seven schools in Sherpa villages. Here with hammer and can of nails, the New Zealander fulfills his pledge: "To leave behind something more lasting than just a memory."

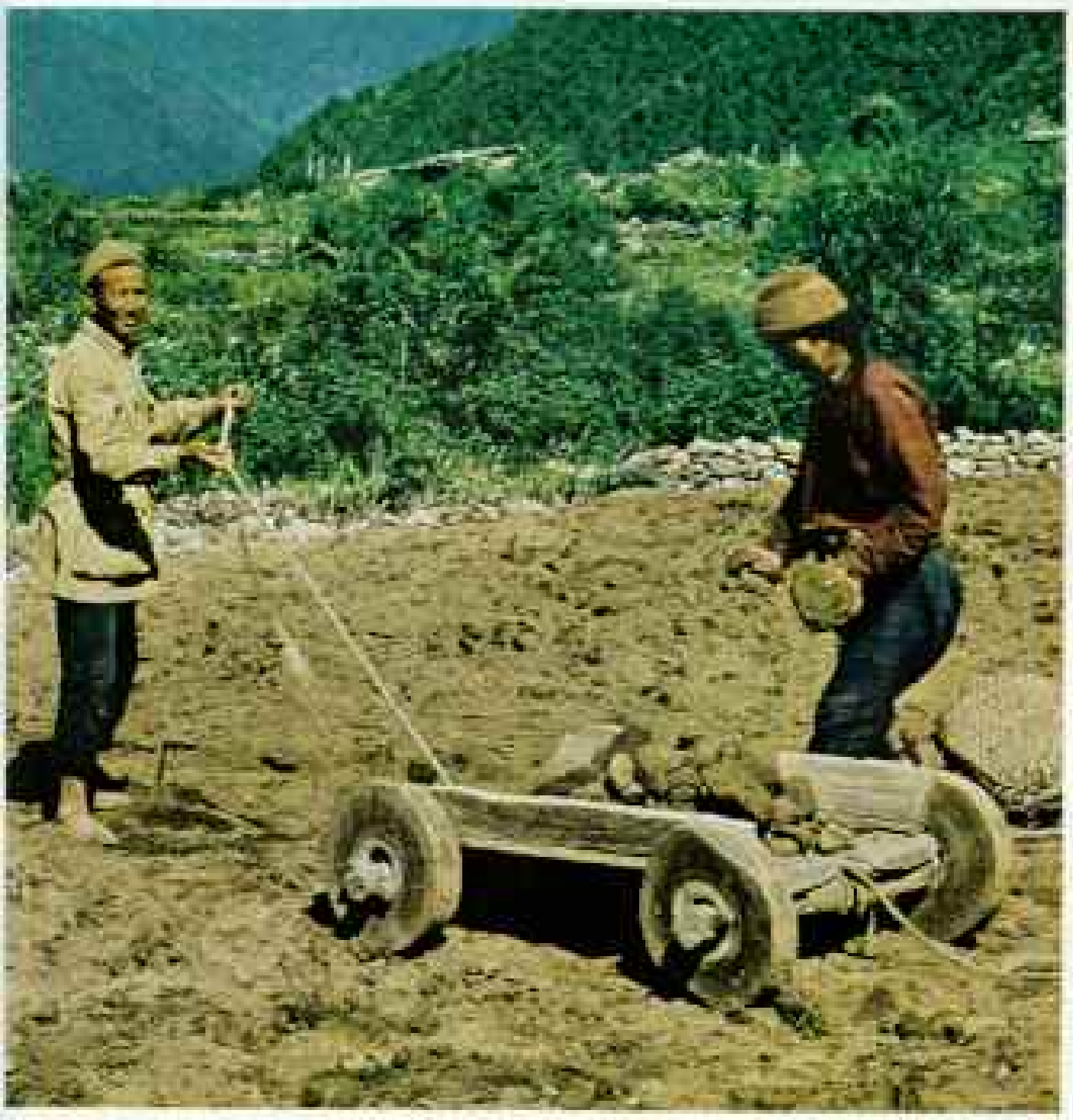
Classroom in the clouds takes shape as a schoolhouse rises in Junbesi. Rock walls are joined without mortar. Timber cut by villagers in nearby forests provides framing.

Beginning to "see," small pupils scribble on slates and notepads in the Khumjung school, the first erected by Hillary's party. Corrugated aluminum walls and roof were flown and portered from Katmandu. Classes enroll 120, aged 4 to 18. Instruction is in Nepali, but the children also learn English.



Straining mountain men pull a heavy log back and forth to grade a meadow for an airstrip. A second major project of the 1964 Himalayan Schoolhouse Expedition, the strip near Lukla brings airborne visitors within two days' walk of Namche Bazar and within five days' hike—for those in good shape—of the base of Mount Everest.

In 1963 Hillary's group piped water into Khumjung and nearby Kunde for the first time, to the joy of Sherpa housewives.



Wheel becomes a Sherpa tool millenniums after man invented it. Highlanders clear stones from fields with a crude cart that "had the only wheels, other than prayer wheels, I ever saw here," reports the author. "Strangely, though Sherpas turned giant prayer wheels by water power, they had never used wheels to carry loads."

Sloping airfield, Lukla's 1,100-foot-long dirt strip lies cupped between towering ridges. Prevailing winds coming up the valley make downhill take-offs relatively easy, despite the 9,600-foot altitude. Planes land with the wind, and let the upgrade slow them. Here a Swiss-built Pilatus Porter races along the runway.

PHOTOGRAPHS BY JIM FISHER (OPPOSITE, LEFT) AND DONALD A. MCKAY © NATIONAL GEOGRAPHIC SOCIETY

slopes to the villages and are stabled on the ground floors of the houses.

The soil of Khumbu freezes hard in winter. Nothing grows. But the Sherpa keeps busy. There is water to carry, firewood to collect, and cattle to be fed. This is also the time for long trading jaunts.

Once Sherpas journeyed to Tibet, where they exchanged grain for salt and wool. When Red China overran Tibet, the trade dwindled. Sherpa eyes turned to the bazaars of Darjeeling and Patna, New Delhi and Calcutta, even Bombay. But in the past two years, trade with Tibet has resumed.

Empty Solu Beckoned as a Promised Land

Darjeeling, in India, served as base for most expeditions in the days before Nepal opened its borders to foreigners. Many Sherpas seeking employment in Darjeeling settled and made it their home. Some have found work as instructors at the Himalayan Mountaineering Institute, built as a memorial to Tenzing Norgay's epic climb. It was the figure of Tenzing, standing at the summit of earth's highest peak (page 564), that made the word "Sherpa" a part of the world's vocabulary.

Tenzing himself is Director of Field Training; Nawang Gombu is his deputy. His large, comfortable house is filled with shaggy Lhasa Apsos, the miniature Tibetan dogs that have recently become popular in the West.

I learned more of the history of Tenzing's people during a journey to the southern district of Solu, the Sherpas' first home in Nepal. It is a region of lush valleys and mild climate, full of running water, luxuriant forests, fine houses, and well-endowed monasteries. The first Sherpa settlers in Nepal found their own promised land in Solu.

For centuries on end, this land belonged only to the gods and remained remote and empty. About 600 years ago, most Sherpas say, their ancestors began to migrate southward from their original home in Kham, in eastern Tibet. They brought with them their language and their reverence for the Dalai Lama, who is still a god in Solu Khumbu.

For a couple of centuries they drifted southward, driving their yaks before them and settling, every now and again, wherever the land welcomed them. They often had to fight when local tribes in southern Tibet resisted them, especially in the valleys about Tingri Dzong and Shekar Dzong. As late as 1910 the Sherpas of Khumbu paid a tribute of butter and cattle to the governor of Shekar Dzong.

Sherpa tales tell of a powerful chieftain, known only by his title, Thakpa Tho—"great leader above all"—who led his people into Nepal, down the valley of the Rongshar Chu, and eastward into Solu. Individual clans followed later over the high pass Nangpa La. Unopposed at last, because there were none to resist them, the Sherpas pressed on into the fertile but empty slopes south of Everest. Tents gave way slowly to homesteads, homesteads to farms, farms to permanent villages.

Today, the district of Solu produces its basic food needs: the Sherpas grow grain, potatoes; some rice, fruit, and vegetables. They breed fine cattle and, recently, poultry.

The people also trade as middlemen in north-south commerce. Moneylending is big business with them, and mountaineering expeditions that pay wages in cash are popular.

Few Sherpas from Solu have taken to actual mountaineering. They find employment as low-altitude porters for foreign expeditions, but seldom venture higher than 18,000 feet. My stoic friend Nawang felt as unstable as I did at 19,000 feet, but on his home slopes

he could walk the legs off a mountain goat.

In the beautiful old village of Junbesi, the 10,000-foot "capital" of Solu, are some of the oldest buildings in Sherpa country, including a Buddhist temple (pages 552-3). Its murals are almost obliterated by the soot from countless offerings of incense and butter lamps. Its beams sag. Its brocades and painted banners are brittle with age. Yet it has offered hospitality to numerous expeditions that have camped in its timbered courtyard. At these times, worship and ritual continue amid high-piled baggage, lines of improvised beds, and the jabber of alien tongues.

Saint's Fingerprints Mark the Moon

Above the village rises a fine new monastery, still in the process of being built. I spent a night there in the tranquil company of some 50 lamas and novices. As we talked that evening, while dusk was still a pale green glow, a full moon rose and filled the sky above us.

"See those dark marks on the moon?" a young lama asked me.

"Long, long ago," explained another lama, "a great saint lived in this valley. He loved the valley so much he could not bear to have it disappear at night. So, one evening, he reached up and pulled the full moon closer to the earth. His finger marks remain on it to this day." And it is after the moon, Jun, that Junbesi is named.

Perhaps the place where the past and the future of Sherpaland can best be read is the exquisite little monastery, or gompa, of Jiwong, southeast of Junbesi, where monks live in painted Tibetan-style houses with window boxes ablaze with flowers. The monastery itself must once have glowed; time-darkened murals still cover walls, ceilings, pillars, and doors. In one of its exquisite shrine rooms is a butter lamp fashioned from pure gold.

Unfortunately, the gompa is in a state of wild disrepair. Cows wander through its classic courtyard and are tied to the pillars. Plaster peels. Murals disintegrate. Expressing shock at this disregard for a treasure so rare, I was given a simple explanation:

A man builds and maintains a gompa for his own glory and salvation, so the gompa is of little concern to others. When the builder dies, his zeal dies with him. The monastery may well collapse if there is no strongly established order of lamas to take care of it.

Unfortunately, that happened at Jiwong. Sangye Lama, the founder, died several years ago. His gompa, though now dying, is still worth traveling days and miles to see.

Sitting around a fire with the lamas one night at Jiwong, I was initiated into Sherpa philosophy and lore.

"A man makes a fine image of clay and leaves it by the wayside as a blessing for travelers," said a lama. "It rains, and a passer-by, fearing the image will disintegrate, takes the straw packed into his boots and makes a covering for the image. Along comes another traveler. He is horrified to see the sacred image covered by something so lowly as straw from a boot. So he flings away the straw and exposes the image to the destructive rain.

"Which of these three men is deserving of greater merit, since all were acting out of sincere religious conviction?"

Today, the old ways are changing. Schools established by Sir Edmund dispense modern learning and spark the urge to catch up with modern times. Politics have entered Solu Khumbu with refugees from Tibet and officials from Katmandu, Nepal's capital. Expeditions have brought the Sherpa employment and income but have left behind a taste for luxury, a demand for modern medicine, a hankering after new foods, new clothes, and new experiences. The old Sherpa gods lose their hold as the people shed primitive fears.

Sherpa Artist Forsakes Fame and Fortune

It takes 16 days of walking to reach Namche Bazar from Katmandu. But an airstrip has now been built just two days' trek from Namche and from the villages of Khumjung and Kunde (page 574). There are still no regular flights, but one day there most surely will be.

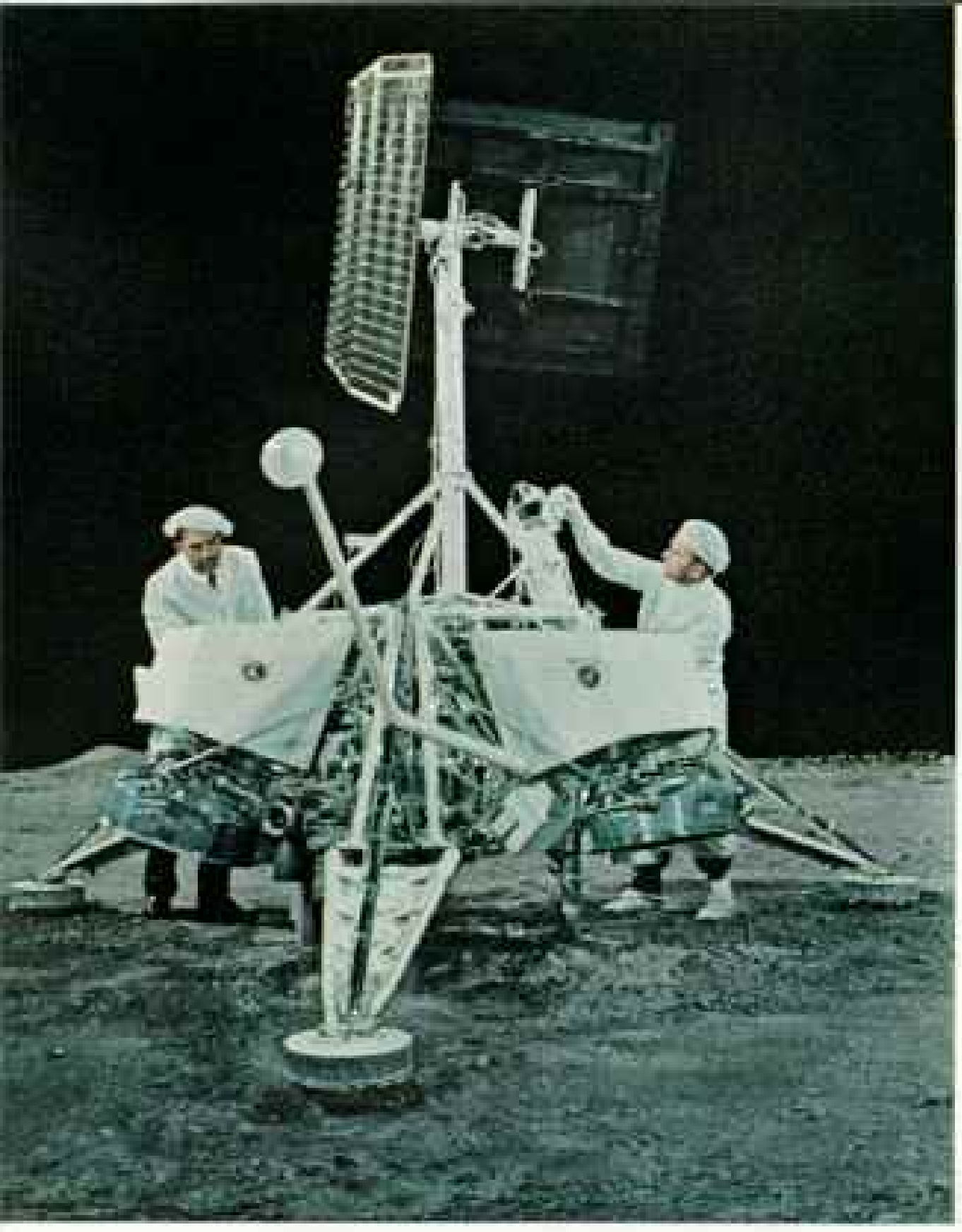
Change will come to the Sherpas. Perhaps someday they will move south again, forsaking their remote villages for less demanding climes. It could be. Except that I have experience of my friend, the artist Pasang. He came with me to Calcutta, began painting again, and then, just when his pictures were in great demand and he was on the verge of profitable fame, he grew homesick.

One morning, most unexpectedly, he announced he was going home. And he went, back to Shangri-La.

I would follow him if I could.

THE END

Mist shrouds a snowy trail through gnarled and mossy rhododendron trees that brave 12,000-foot heights. Trudging dizzying defiles, bent with burdens, Sherpas live with hardship but few permanently forsake their cloud-crowned land for easier climes.



Identical twin of moon-borne Surveyor I crouches on lunarlike rubble for inspection by technicians of Hughes Aircraft Company, builders of the vehicle for the National Aeronautics and Space Administration. Tests with this model helped perfect the sister ship that made last June's landing and took more than 11,000 photographs.

Surveyor: Candid Camera on the Moon

By HOMER E. NEWELL, Ph.D.

Associate Administrator, NASA

TODAY, on a gray and desolate plain of the moon's Ocean of Storms, Surveyor I stands lifeless, a solitary artifact of men who live on another body of the solar system, 240,000 miles away.

Surveyor proved its ability to survive the furnace heat of the lunar noon, then go through the deep freeze of the 14-day-long lunar night at temperatures nearly 500 degrees colder, and still operate.

But now its batteries are dead; its antennas are useless; its solar panel and cyclopean camera eye stare blindly.

Surveyor I is silent, but in its brief life its performance far surpassed our hopes. By television it sent us more than 11,000 splendid pictures from the moon, including the first color

Haunting self-portrait of man's moon scout: Surveyor throws its sixty-foot shadow across rocky terrain Apollo astronauts may tread three years from now. Scanning to the horizon, roughly a mile away, Surveyor sent back hundreds of "chips," from which this striking mosaic emerged. Scientists controlled the robot by radio commands from the Jet Propulsion Laboratory in Pasadena, California, operated for NASA by the California Institute of Technology.

photographs (opposite and page 589). It gave us a remarkably clear and intimate view of the lunar face, so close that we can measure and count particles only a fiftieth of an inch across. It even provided us with a glimpse beneath the moon's surface.

For the first time, because of Surveyor, Project Apollo officials feel real assurance that an astronaut can safely set foot on the moon, that the moon's surface will support him, and that he will not be swallowed up in a thick sea of dust.

Further, Surveyor added substantially to our meager knowledge of earth's natural satellite—information that we will be analyzing and digesting for months to come.

Even more, as Robert Parks, Surveyor Project Manager at the Jet Propulsion Laboratory in Pasadena, California, has pointed out, "The spacecraft gave us an engineering miracle. Its flight and landing worked exactly as expected. On its journey and on the moon, it answered almost flawlessly more than 100,000 radio commands sent principally through our huge antenna at Goldstone, in California's Mojave Desert."

We also used similar antennas near Johannesburg, South Africa, and at Tidbinbilla, near Canberra, Australia.

Surveyor Aim Only Nine Miles Off

Consider, for example, Surveyor I's accuracy. It was launched May 30, 1966, from a point on earth rotating at about 870 miles an hour, at a target moving some 2,300 miles an hour. Sixty-three hours and 36 minutes later, after traveling almost a quarter of a million miles, and with only one minor correction during its flight, it landed within nine miles of its target on the west side of the moon, close to the lunar equator.

Stephen E. Dwornik, Program Scientist for Surveyor, estimates that an expert rifleman firing at a fast-moving bull's-eye 250 yards away would have to hit within the thickness of this magazine to do as well.

Once in the vicinity of the moon, Surveyor's ultrasensitive radar began feeding to its self-contained computer information about its velocity and altitude. The main retrorocket, triggered by the altitude-marking radar, slowed the spacecraft's hurtling descent from 5,800 miles an hour to 290 miles an hour in 40 seconds. Then, small vernier rocket engines almost stopped it a few feet above the surface. Like some giant insect with its spindly

(Continued on page 587)

Moon's gray pallor contrasts with color targets attached to Surveyor in these epoch-making photographs. The craft snapped color pictures of the moon, but not on color film. Instead, its camera shot three separate pictures of each scene—through orange, green, and blue filters. Working under the supervision of JPL scientists, the Geographic's color laboratory took the separation negatives transmitted from the moon and printed them through filters onto one piece of color film.

Close-up at right shows a gold-plated jet nozzle that appears yellow against Surveyor's white frame. Magenta tint came from failure of the camera's green filter to register properly. Photometric disks, identical to one at JPL (inset), provided the guide for reconstituting the color. Subtle color differences between small features help geologists interpret the moon's surface structure.

Spraddle-legged robot beams messages to earth

SURVEYOR bridges a quarter-million-mile gulf to present earthlings with a view of the moon almost as clear as if man himself stood there.

Equipment works flawlessly. The solar panel points toward the distant sun (left), converting its rays into electricity to feed the robot. The TV camera stands man-high at right of the mast. (Russia's Luna 9 scanned a nearer horizon from only knee height.) Electronic gear crams two large compartments. Three antennas receive instructions and transmit pictures and data on temperature, voltage, pressure, and switch positions.

When NASA's deep-space tracking antenna at Goldstone, California, relays an order from JPL, the camera's mirror (page 590) obediently adjusts elevation, swivels left or right, and reflects a section of surface. The camera "reads off" the image, a transmitter beams it to Goldstone in 1.3 seconds, and microwaves flash it to TV consoles at JPL, hub of the project.

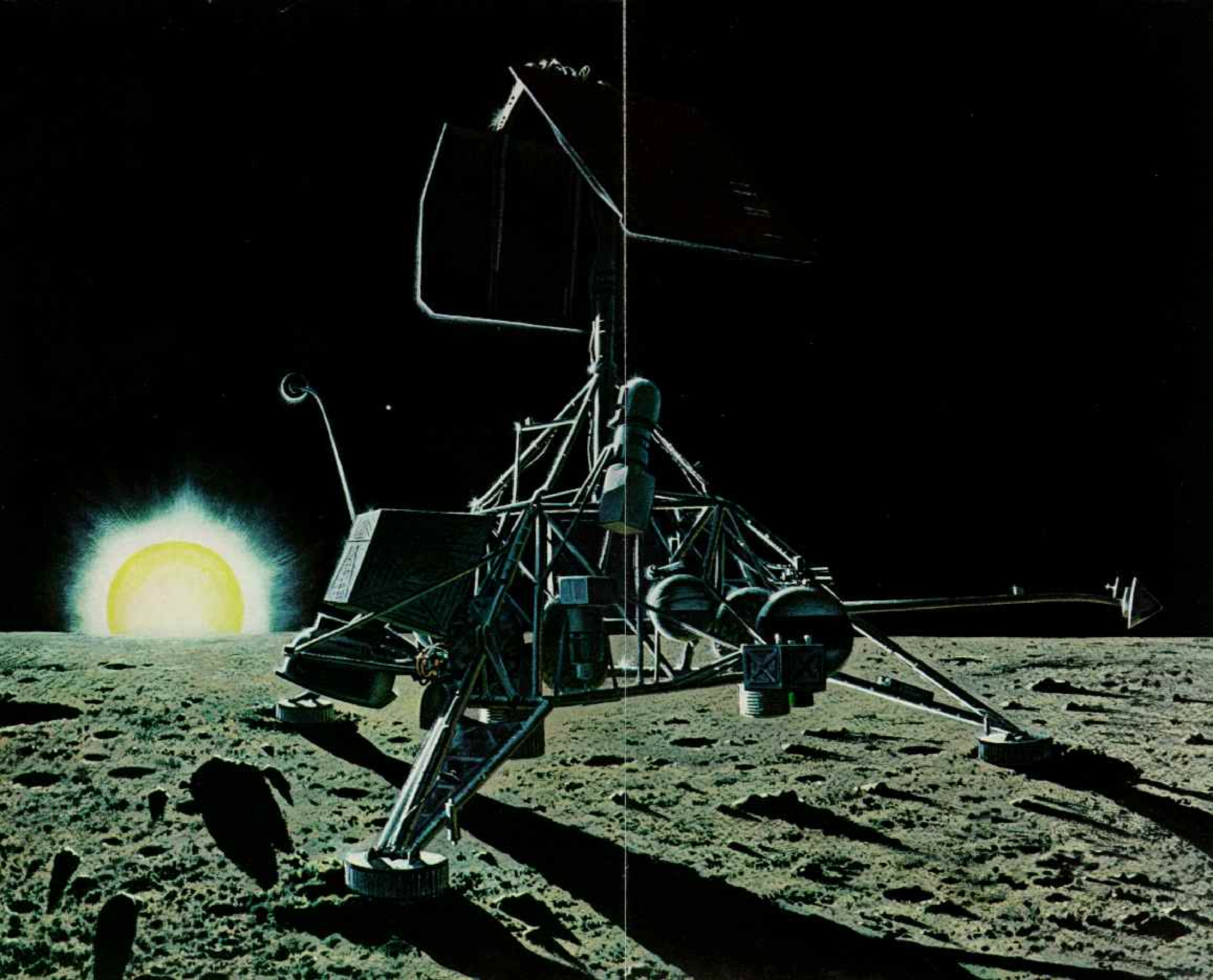
The sun wheels slowly overhead, heating the lunar surface to a searing 235° F. at high noon; on signal, Surveyor shades its camera with its square antenna. Then more data and thousands of pictures. In the photograph below, an ancient crater rim at least 10 miles away rises more than 300 feet above the near horizon.

Long shadows creep behind the spacecraft (right), filling small craters and new holes stamped by the shock absorbers when Surveyor settled on the surface during landing (page 588). The solar panel draws its last energy of the day. Temperatures plunge toward the −250° F. mark.

Now Surveyor's earthbound masters point the camera's mirror toward the vanishing sun; earlier its intense glare would have burned the photosensitive vidicon tube. As the sun sets, the corona—its glowing upper atmosphere—flares like a fiery crown; here, the artist portrays it simultaneously with the still-visible solar orb. Half an hour later, Surveyor took a ghostly photograph—a four-minute exposure of the robot's footpad bathed in earthshine, our planet's reflected light.

Finally, after executing more than 100,000 earth orders during the two-week-long lunar day, Surveyor settled into sleep for a frigid night equally long. But when day broke, it stirred again to life—and sent hundreds of additional pictures.

PAINTINGS BY DAVID WILTSHIRE, RESEARCH BY GEORGE W. BEATTY, GEOGRAPHIC ART DIVISION © N. G. S.; NASA PHOTOGRAPH (ABOVE)



THIS PAGE FOLDS OUT

Pocked Ocean of Storms bares its wounds in a mosaic covering some 100 city blocks. Shallow crater near the horizon lies amid yard-long boulders. Within a few thousand years—mere moments in moon history—eroding hail of space debris may erase holes the size of golf-course divots (foreground). Though micrometeorites may fall like powder on Apollo astronauts, big meteorites crash too infrequently to pose a hazard. Massive impacts such as that which blasted starlike Tycho Crater (right), 850 miles southeast of Surveyor's touchdown (red arrow), spatter debris into space.

Pasting photographs inside hemispheres, technicians produce mosaics with minimum distortion. About 350 "chips" built vista above.

legs spread wide, Surveyor fell the last 13 feet with half the speed of a parachute jumper—approximately 10 feet a second (page 580).

The three-legged robot, weighing about 600 pounds on earth but only about 100 in the moon's lower gravity, bounced slightly, oscillated briefly as its shock absorbers settled, and came to rest undamaged. Its footpads, 12-inch-diameter disks of crushable aluminum honeycomb, dug about an inch into the lunar surface.

At impact, the tubular aluminum legs pivoted to absorb shock, and crushable pads under the "knees" of the legs sank momentarily into the surface. One of the prints shows clearly in the picture at the top of page 588.

What Surveyor saw after it landed was, of course, not totally new. Three Ranger spacecraft had sent back pictures just before crashing into the moon's face.* Russia's Luna 9 landed on the moon last February and took a handful of close-up photographs.

But Surveyor saw with a sharper and clearer eye. And, for the first time, it saw in color. Three separate photographs, taken with orange, green, and blue filters, combined to produce a fairly accurate color representation. As scientists expected, that color seems to be nothing but gray—a plain, neutral gray.

Surveyor had but a single eye, its TV camera. Instead of turning this eye about, it gazed upward at a motor-driven mirror that, on radio command from earth, searched the ground below or scanned the horizon in almost a full circle (painting, page 590).

The camera saw approximately as far as a man's eye would see, since the mirror was about 5½ feet above the surface. The horizon, because of the small diameter and sharp curvature of the moon, lay only about a mile away. On earth the horizon would have been roughly four miles distant.

And what did Surveyor see in the Ocean of Storms? It found itself in a shallow crater some 60 miles across. It had landed on a dark, level, relatively smooth spot. Low-lying hills and mountains of the crater's rim, at least 10 miles distant, poked their crests above the horizon (page 582).

Surveyor Settles an Old Controversy

In every direction stretched an eerie wasteland, scarred with smaller craters from an inch to several hundred feet across and littered with debris. Coarse blocks of rock as wide as three feet and countless smaller fragments lay strewn upon the crater lips and the surrounding areas.

The blocks and fragments represent debris ejected by the constant barrage of meteorites cratering the moon's surface, or rubble thrown out of secondary craters created by the impact of the original flying debris.

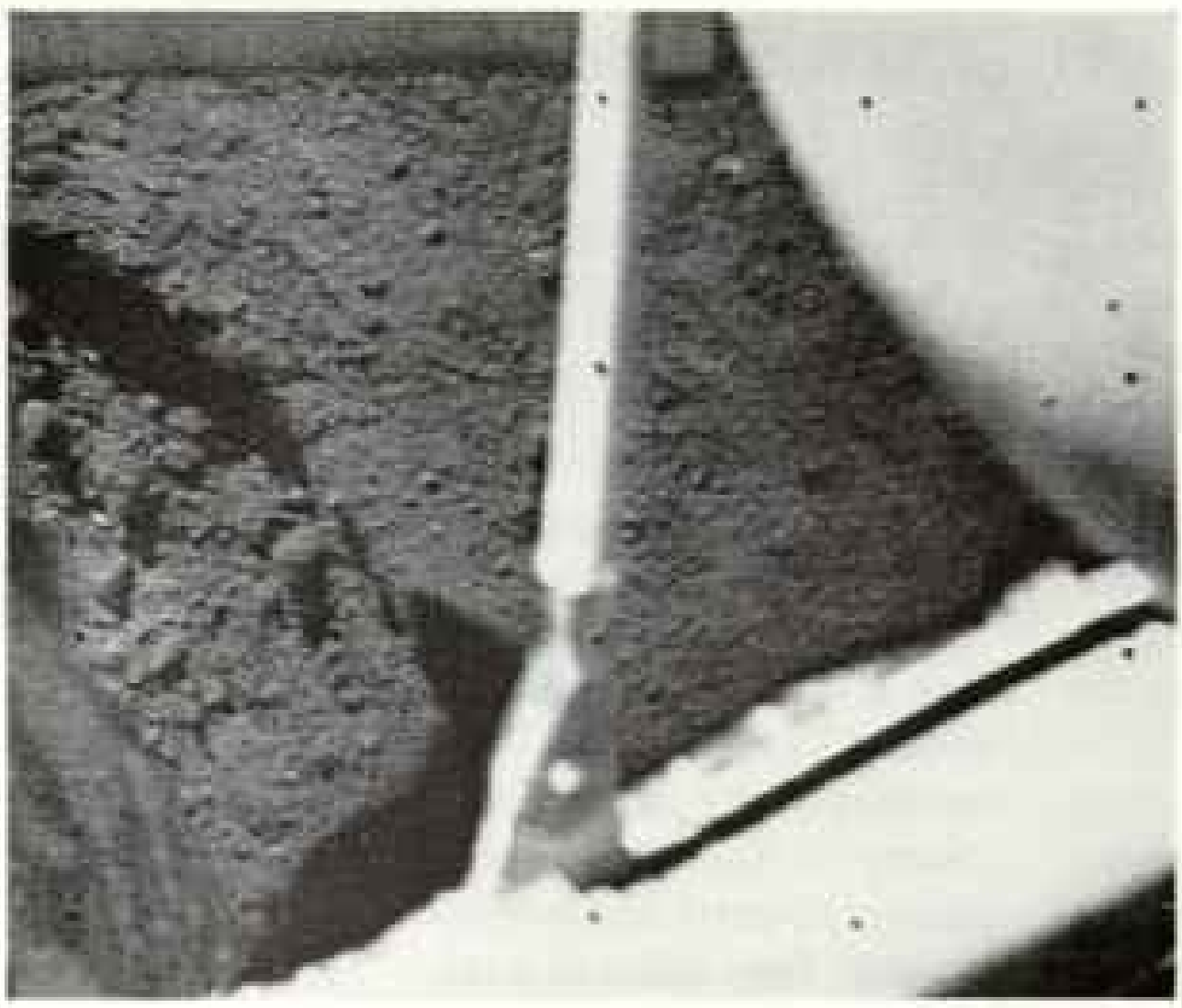
By the time you read this, if all goes well, Surveyor I will have been followed by Surveyor II, next in a series of 10 planned missions. These will examine potential Apollo landing sites and survey other areas.

Lunar Orbiter I also may have flown, whirling round the moon to obtain photographs at altitudes as low as 30 miles and transmit back to earth pictures of potential Apollo and Surveyor landing zones (page 592). But so well did our first lunar soft-lander work that many scientists doubt that its successors will radically change our impression of the surface of the moon's vast "ocean" plains.

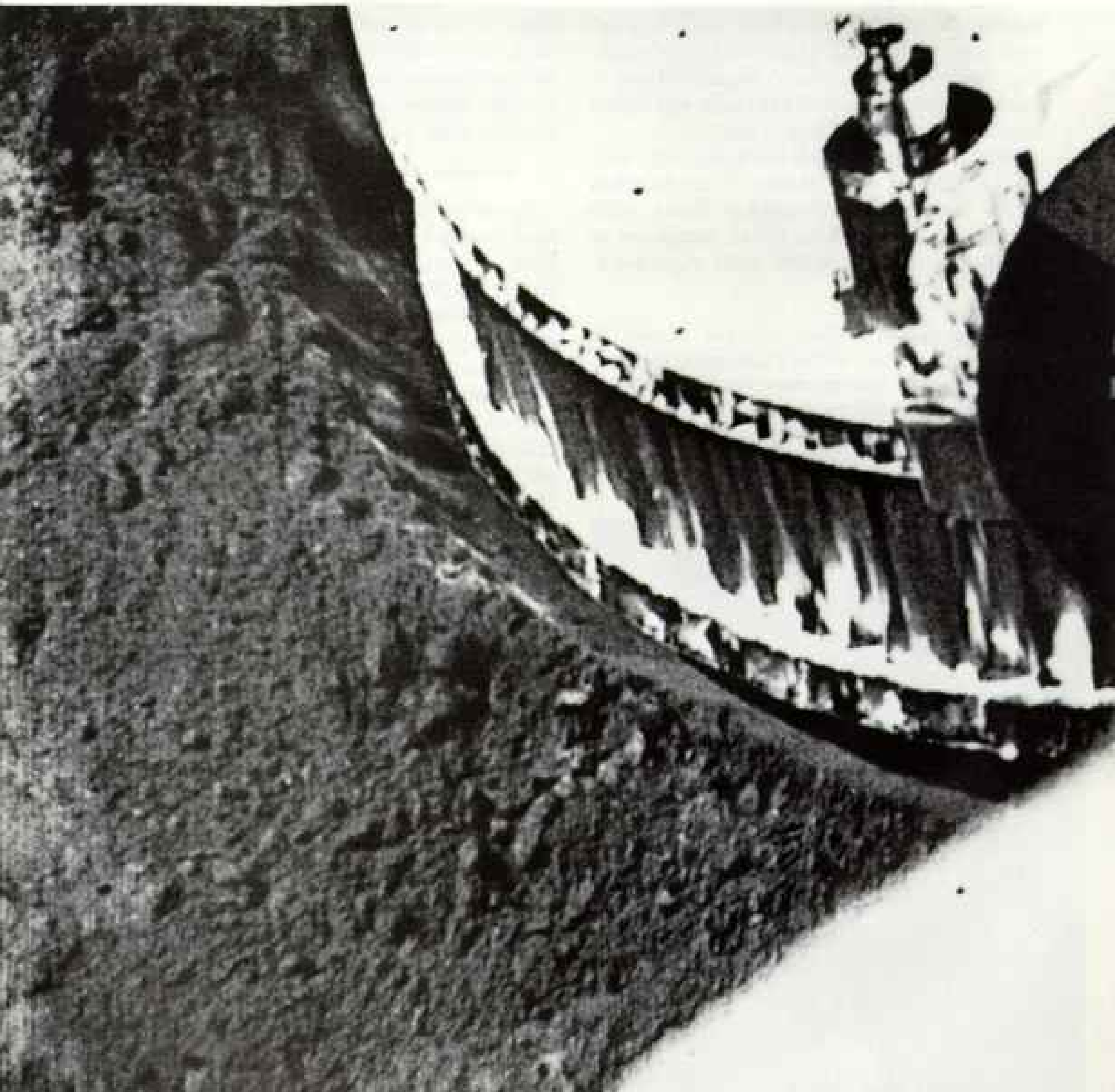
Before Surveyor I's voyage, scientists had engaged in intense speculation and prolonged controversy over the nature of the moon's face. Some argued firmly that the moon was

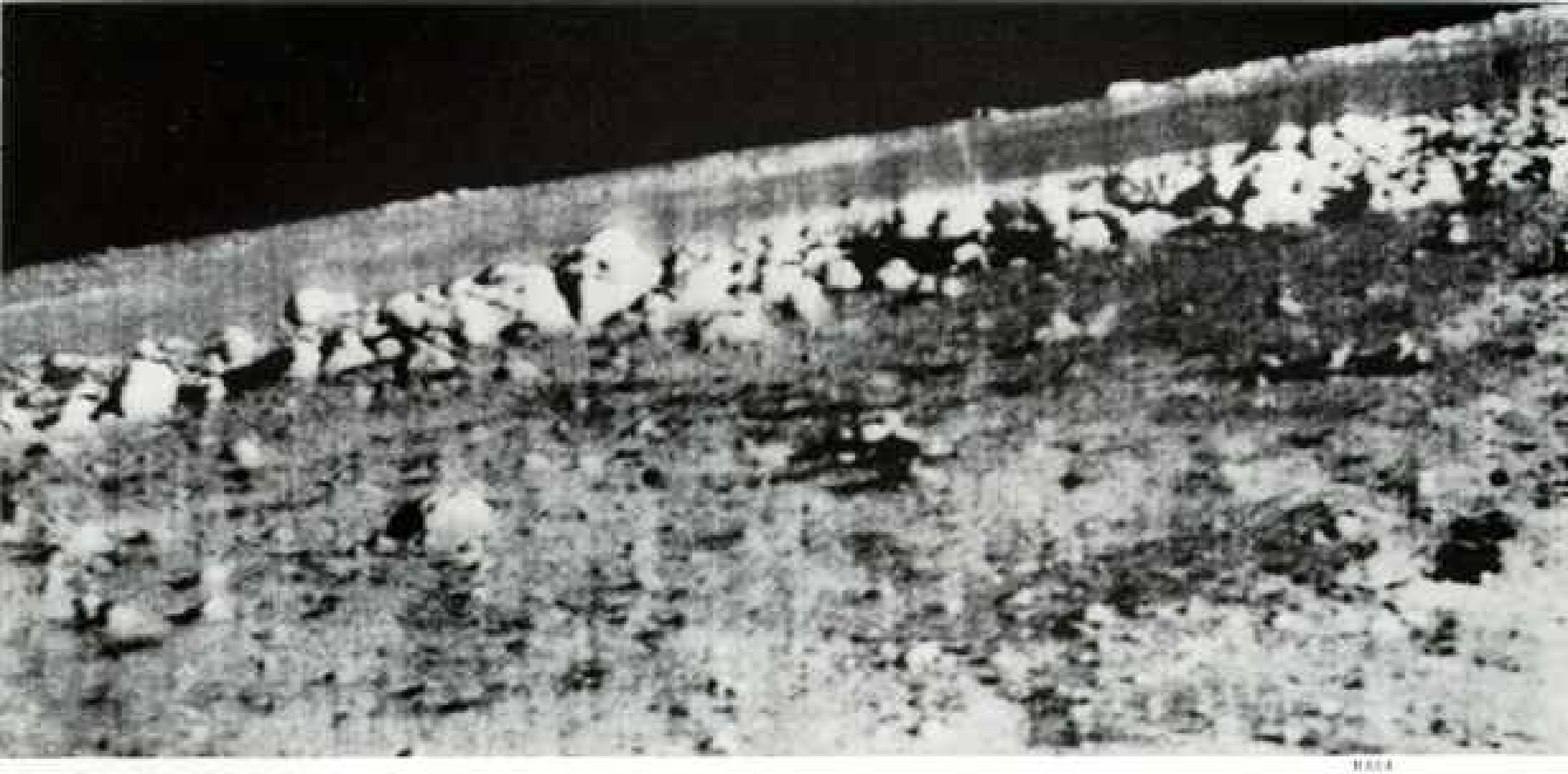
*See "The Moon Close Up," by Eugene M. Shoemaker, NATIONAL GEOGRAPHIC, November, 1964.

The author: Space scientist Homer E. Newell directs NASA's unmanned flights as Associate Administrator for Space Science and Applications. Information gleaned by his space scouts—Mariners, Rangers, Surveyors, Lunar Orbiters, and others—paves the way for manned voyages.

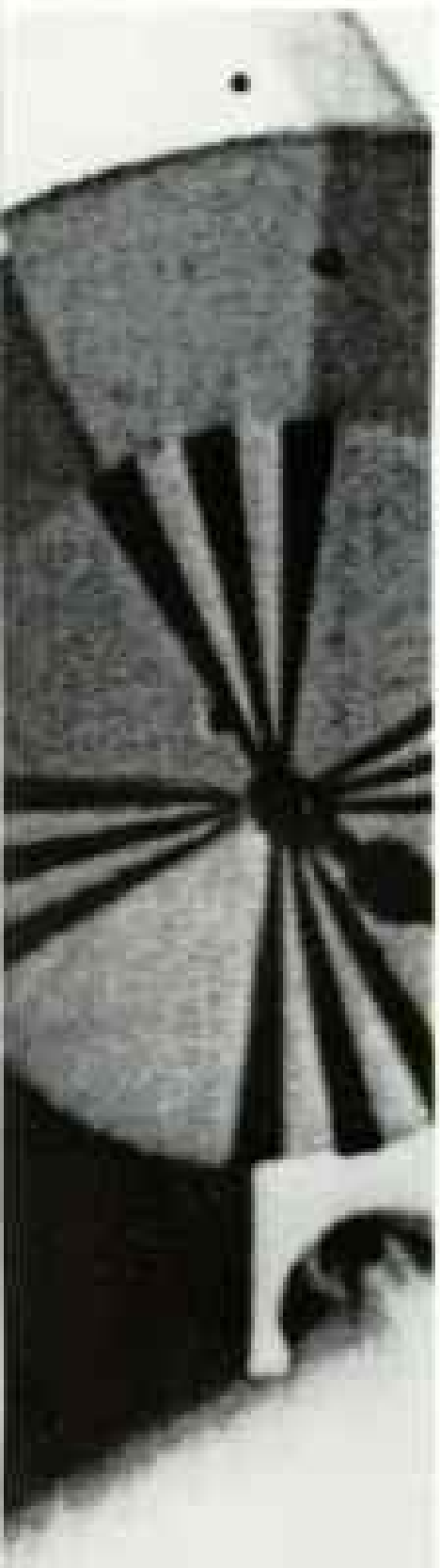


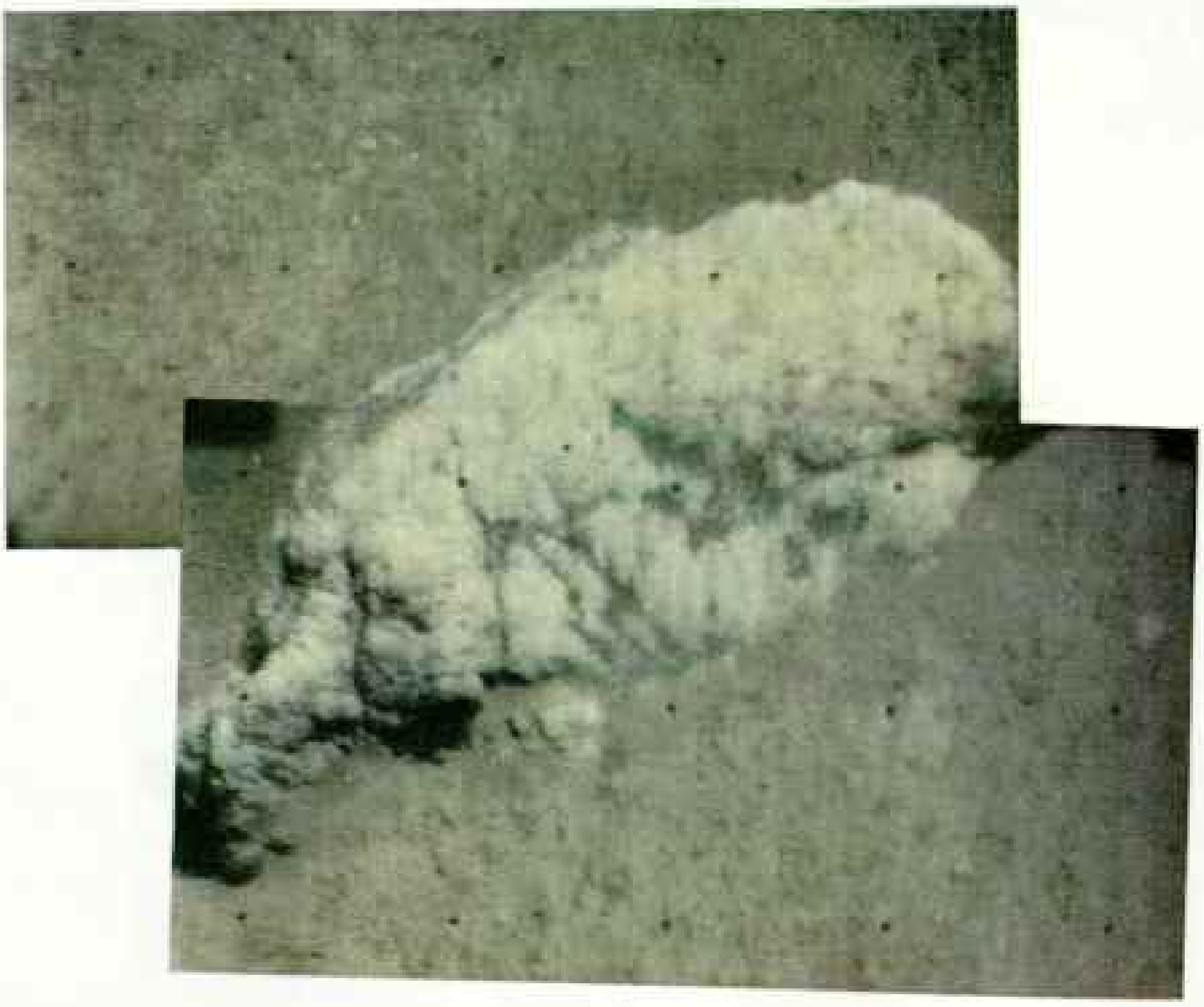
"**Cookie-cutter picture,**" analysts call this view showing the imprint of a crushable aluminum shock absorber. Crisp edge of the hole, about 3/4 inch deep, suggests that lunar granules adhere to one another instead of tumbling helter-skelter like grains of sand. But the existence of few clods indicates the cohesiveness is weak—a puzzle to scientists, since many materials in a vacuum, such as the moon's, tend to cling together as if glued.





Waist-high boulders ripped from lunar bedrock rise like a wall, in a view foreshortened by the camera. They litter the rim of an old crater near the horizon. Such blocks could have damaged Surveyor had it dropped on them during the blind landing. Pillow-size rock (below) reveals cavities that indicate it once was molten, either through volcanic action or heat generated by a meteorite's impact. The reconstituted color shows only grays.





Scuffing the moonscape with an aluminum paw (left), Surveyor peers beneath the surface. Impact of its 13-foot free fall and short bounce gouged the shallow footprint. A close examination indicates the surface to be granular, contradicting theories that a landing on solid rock or smothering dust awaits the first lunar explorers. Particles as small as a pinhole appear in the picture. Future Surveyors may be equipped with a device that can dig some 18 inches into the surface upon command from scientists on earth.

PAINTING BY RICK HALL, RESEARCH BY WALTER C. CRIME © N.G.S., NASA

Perched on Surveyor, the TV camera tilts its mirror toward targets equivalent to mosaic chips (pages 585-6). Camera stares rigidly up at the image. To turn its gaze, the upper housing swivels. Cutaway shows zoom lens, color filters, and drive mechanisms.

Shadows heighten lunar features. Rim of a crater (left) appears flush with the surface near high noon, but slanting evening rays show a raised lip (right). Such shadows may reveal danger spots for Apollo astronauts searching for a lunar landing site.

covered with a deep blanket of soft dust. Others maintained just as vigorously that the surface was hard rock. Still others suggested spongy rock, or perhaps a thin covering of dust over rock.

Ranger's pictures did little to settle this controversy, for they were unable to resolve surface details smaller than 18 inches. A good many scientists tended to see in them what they hoped to see.

Surveyor changed all this. Now we know that, at least in one place in the Ocean of Storms, little if any loose dust threatens the Apollo astronauts. At the same time, the moon's surface seems not to consist of hard rock. Instead, scientists who study the Surveyor pictures find a layer of material that looks and behaves much like earthly soil. Judging by the shapes of small craters and the materials thrown up on their rims, we believe this layer may be as much as three feet thick. We think that essentially this same kind of material exists over a very large part of the moon's face, harrowed and worked and broken down by the incessant rain of meteorites.

Dr. Eugene Shoemaker of the U. S. Geological Survey, one of the principal investigators for the Surveyor project, puts it this way:

"The moon's face is certainly not a deep sea of very fine dust. Undoubtedly half the materials are finer than the smallest particles we can see in the Surveyor pictures, and we have measured and counted particles no bigger than a fiftieth of an inch. That is to say, it is like fine sand, or finer, in grain size. But distributed through this are many coarser particles. So it is a very gritty, siltlike material with blocks and chips throughout.

"It is relatively easily disturbed. The effects of the Surveyor footpads landing on its surface are not unlike the effects of walking across a freshly plowed field."

Dust Would Have Fooled Craft's Radar

How can we be so sure about the absence of loose dust? First, by looking at Surveyor's footprint (page 588). The robot's foot has sunk a little way down, just as it would in freshly cultivated soil or in wet beach sand.

Second, the very fact that Surveyor landed so well indicates that there could not be a thick bed of loose dust. Had there been, the landing signal would have penetrated deeply into the dust, and would have deceived the radar about the craft's altitude in the last moments before landing.

There is still another indication. No continuous layer of dust was observed by the television camera on any of the parts of the spacecraft. And obviously, no dust gathered on the camera lens, or our pictures would have been fogged and blurred.

To find out how much weight the lunar surface will support, Dr. Ronald Scott, a soil mechanics expert from the California Institute of Technology, experimented for many hours with a sandbox resembling those used in kindergartens. He varied lighting angles, trying to duplicate lighting effects seen in the moon pictures, to gauge the depth of penetration of the footpads and thus help interpret the properties of the lunar material.

Module's Safety Hinges on Landing Site

Dr. Scott and his colleagues concluded that if the surface material is uniform to a depth of at least a foot, it will support about five pounds to the square inch.

"A man walking on the surface would be in no danger of sinking," says Dr. Scott.

"This determination of the bearing strength of the moon's surface may indeed be the most important of Surveyor's discoveries," adds Benjamin Milwitzky, Surveyor Program Manager at NASA's headquarters.

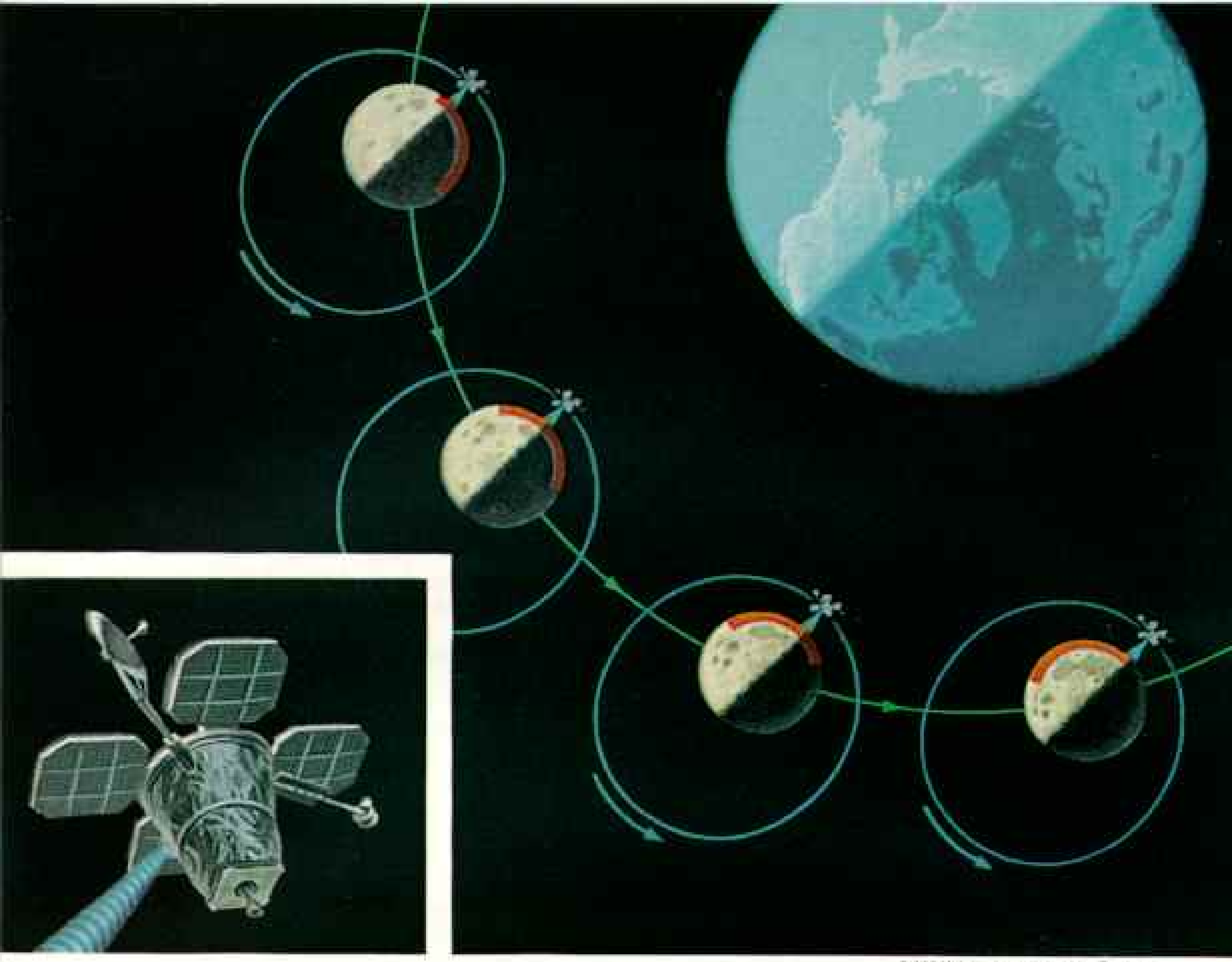
But will the moon support Apollo's LEM, the Lunar Excursion Module, with its two astronauts? This craft will weigh 2,500 moon-pounds compared to Surveyor's skimpy 100; its landing system resembles Surveyor's.*

Yes, we think LEM can land safely if it comes down properly and descends on a site like that on which Surveyor came to rest.

Nevertheless, Surveyor's pictures reveal serious hazards to any spacecraft in the many large rocks that litter even the smooth surfaces of the moon's plains. Dr. Elliot C. Morris of the U. S. Geological Survey estimates that in any area of a hundred square yards, one would expect to find at least one boulder two to three feet across, and many more smaller rocks or fragments.

"In some ways the surface of the moon is definitely more hostile than we thought it might be," says Dr. Robert L. Roderick, Surveyor Program Manager of Hughes Aircraft Company, where the spacecraft was built. "Judging from the Ranger pictures, we did

*For a description of LEM and lunar landing techniques, see "Footprints on the Moon," by Dr. Hugh L. Dryden, late Deputy Administrator of NASA, in National Geographic, March, 1964.



DIAGRAMS BY DAVE MEUTZER © N.G.S.

Tracing ellipses around the moon, Lunar Orbiter scouts the Apollo landing belt. Skimming within 30 miles of the surface, the satellite trains its camera near the line dividing light and darkness, where revealing shadows outline treacherous terrain. With solar panels spread (inset), Lunar Orbiter takes overlapping pictures for stereoscopic study. Antennas and rocket engine protrude from aluminized housing that protects the 850-pound craft from the sun's heat.

not expect to find such large rocks or so many of them."

If a spacecraft hit the rock-strewn field shown on pages 588-9, it would not be likely to survive. So it is clear that the astronauts will need to maneuver the LEM to the type of landing spot Surveyor found.

Surveyor tells much about the moon besides the all-important question of its surface. Temperature sensors show what the astronauts may expect in the way of heat and cold. At lunar noon, with the sun's radiation pouring directly down, the moon surface reached 235° F., 23 degrees above the boiling point of water on earth. At sundown heat fled swiftly; the temperature plunged to zero within an hour, and then dropped to about −250° F.

Surveyors to come will add much more to our scientific knowledge. One may carry a scoop to dig a trench for observation of subsurface features to a depth of perhaps 18 inches. Plans call also for an instrument to ascertain the chemical elements in the lunar material; a seismometer to check for moonquakes, to help determine whether the moon is inert or is active internally; and dual cameras to take stereoscopic pictures.

The United States has put its first footprints on the moon. These were made by the aluminum-shod feet of a three-legged robot, to be sure, but they were necessary before man himself could walk there.

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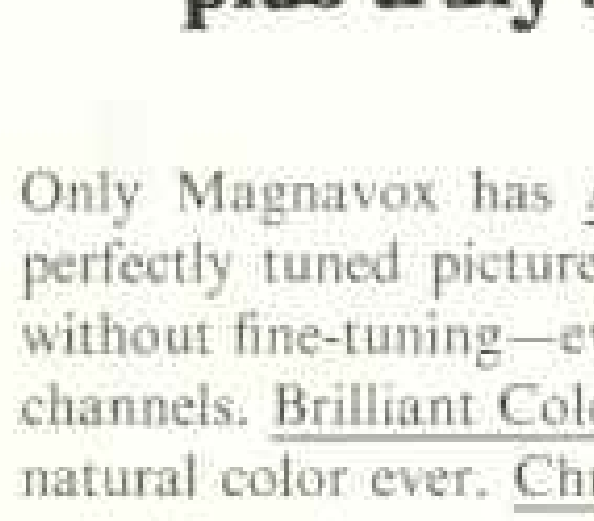

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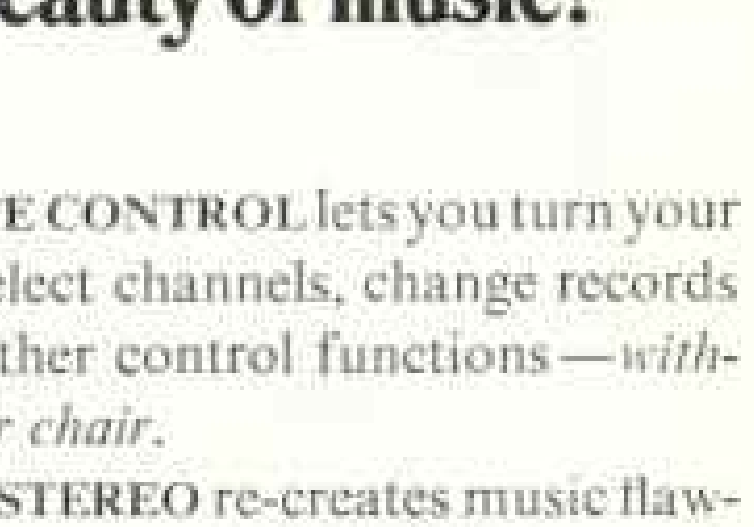

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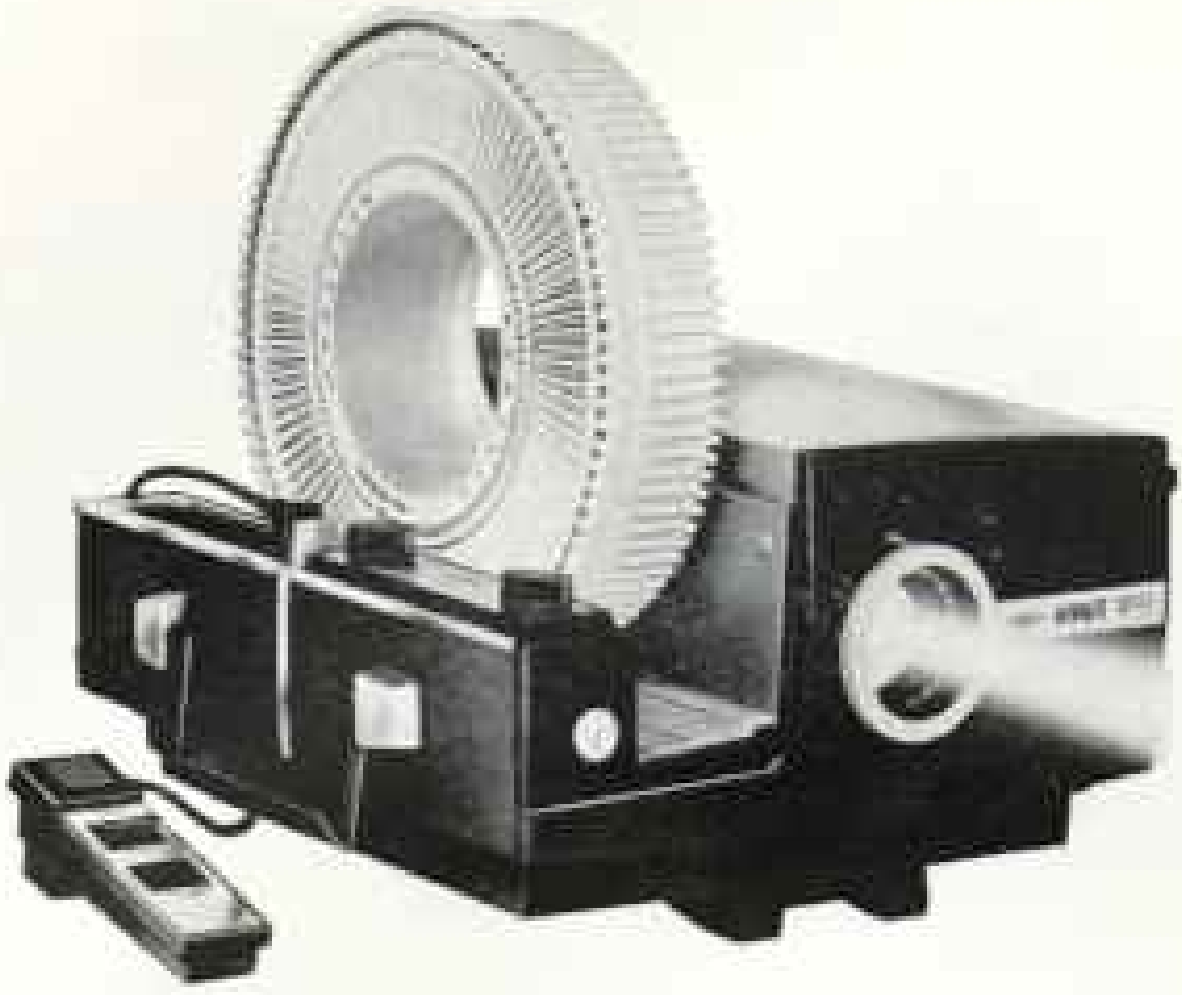

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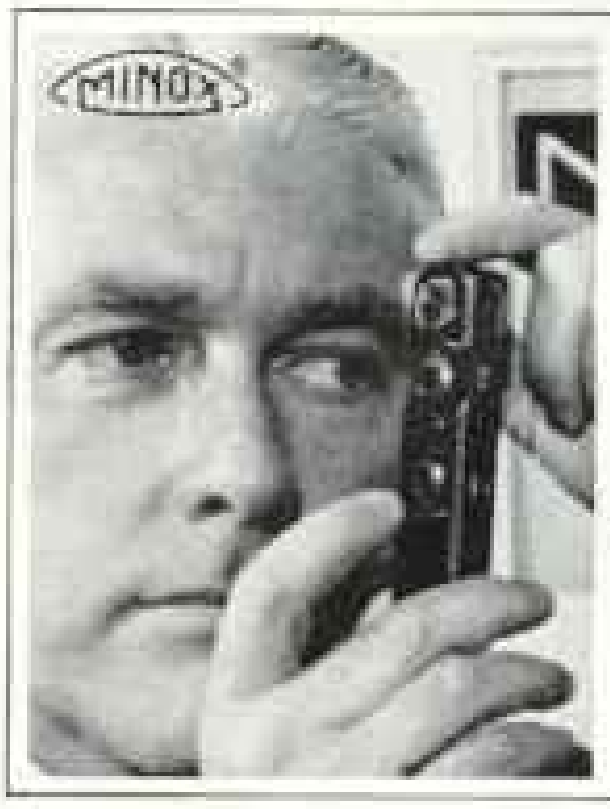

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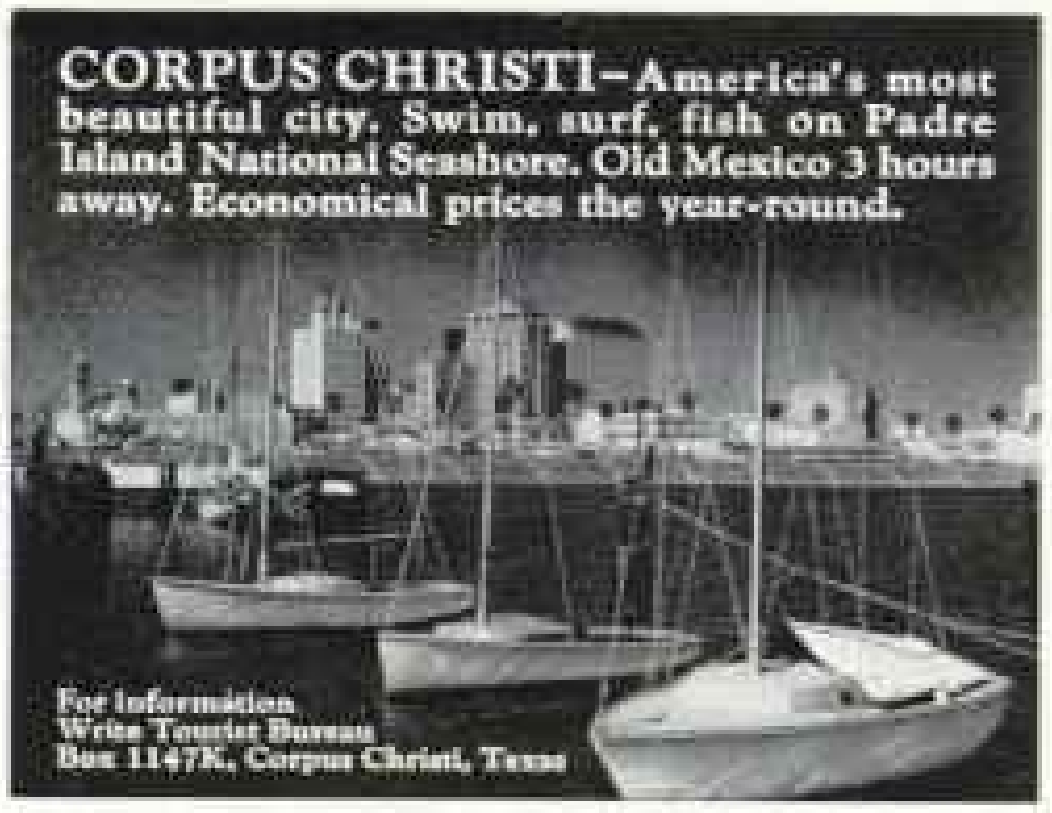

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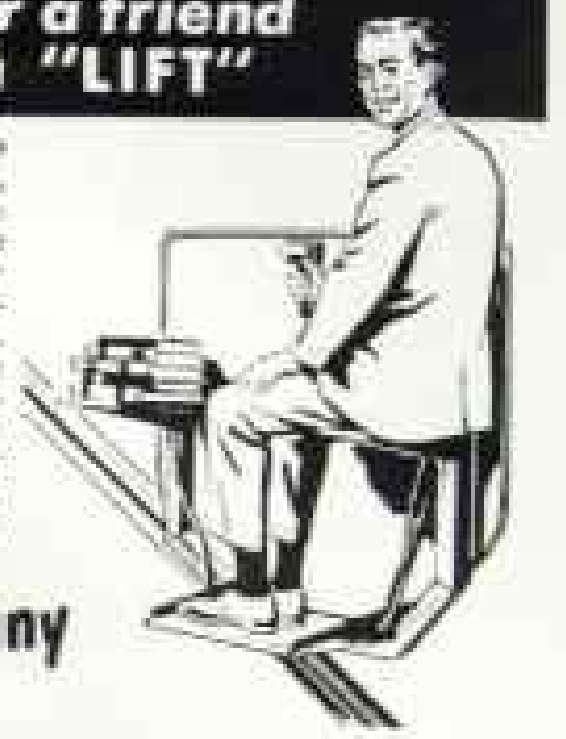

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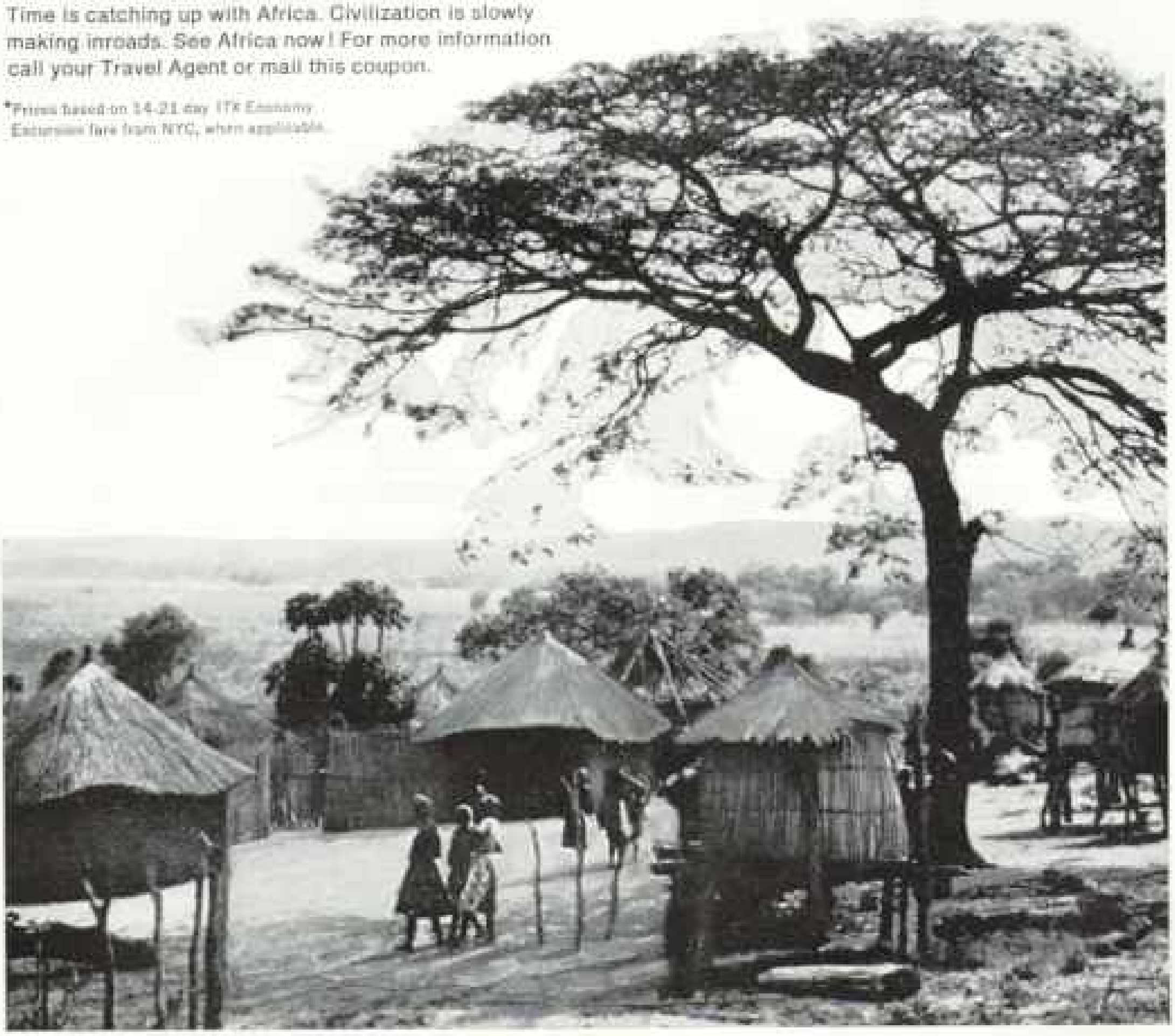

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Doctors had only a few dependable medicines. They relied more on nature, faith and patience than on the medicines of the day to cure the sick.

Had you been born in 1866, your life expectancy would have been a mere 40 years.

But over the years, research quickened the pace of medical progress. Great strides began to be made. Many contagious diseases started to retreat under the onslaught of antitoxins, serums and vaccines. Surgery became safer. One vitamin after another helped overcome nutritional diseases in many parts of the world.

Medicines—pure and dependable—restored millions to health. Hormones were isolated and used to control some disorders of body chemistry.

And, later on, a long list of diseases and infections began to yield to those powerful weapons—the anticonvulsant, antibiotic, and chemotherapeutic drugs.

Today's child has a life expectancy of more than 70 years.

But what of the future?

As we enter our second century of service to the professions of medicine and pharmacy, Parke-Davis looks to new challenges—opportunities to help all people enjoy better health and longer life.

PARKE-DAVIS

BETTER MEDICINES FOR A BETTER WORLD

100

Feel like a healthy animal

Charge up, sleek down with Special K

Loaded with sheer animal spirits! Is that you? Or have you been skimping on breakfast? If so, get with Kellogg's Special K Breakfast. Unloaded in calories—a scant 240. But loaded with good nutrition.
Crisp, light Special K's loaded with protein. Loaded with vitamins. Loaded with vitality. Feel like a healthy animal. Charge up, sleek down with Kellogg's Special K.

Kellogg's SPECIAL K

FAMOUS SPECIAL K BREAKFAST

4 ounces orange or tomato juice—or half a medium grapefruit
1½ cups (1 ounce) Special K with 1 teaspoon sugar and 4 ounces skim milk
Black coffee or tea
Only 240 calories