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NATIONAL GEOGRAPHIC

100 Years

Reporting on
"the world and all
that is in it."

– ALEXANDER GRAHAM BELL, 1914

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

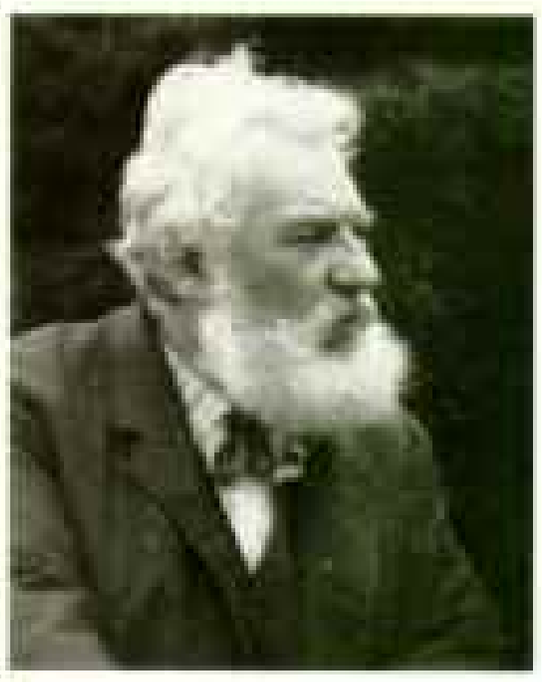
1888 1988

NATIONAL GEOGRAPHIC

SEPTEMBER 1988

GILBERT H. GROSVENOR

ALGERIAN GIRL, CENTENNIAL EXHIBIT



ALEXANDER GRAHAM BELL

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President Gilbert M. Grosvenor announces the publication of the Society's unprecedented HISTORICAL ATLAS OF THE UNITED STATES and the donation of a copy to each of the nation's 35,000 schools with a ninth grade or above.

THE NATIONAL GEOGRAPHIC MAGAZINE
IS THE JOURNAL OF THE NATIONAL GEOGRAPHIC SOCIETY

COVER CALLIGRAPHY BY JULIAN WATERS

Within the Yellow Border

AFTER SURVIVING A CLOSE CALL, people often say that "My life passed before my eyes." As I look at the covers on the following pages, much of my life passes before my eyes—from the death of Winston Churchill to the birth of the space age, from the bright shining promise of a postwar Kodachrome world to a planet spinning in a cocoon of smog and acid rain. Though I can't relate to all of them, these covers mark a century of holding up to the world our uniquely objective publishing mirror.

They reflect equally the changing earth and the evolution of the NATIONAL GEOGRAPHIC magazine. You'll find here every cover design of the past century. After a few understated, almost unreadable cover formats, the Victorian oak- and laurel-leaf border evolved and became a fixture for almost 70 years. On three issues the American flag appeared, and on one a war savings bond advertised a national need. Beginning in September 1959, every cover except this issue's has featured a photograph or art. All since 1910 have been bordered in our trademark yellow, except the special 13th issue on energy in 1981.

With this fast forward through our history we introduce the last issue of our first hundred years of publishing. It's an issue devoted to a once-in-a-century bit of introspection—holding up the mirror to ourselves for a change. We look not just at what's old, but also at what's new about our past.

Unlike the rare human who reaches 100, we're looking ahead to the next 100 years. Our birthday gift to you, the members, will be the last three issues of this centennial year. They will be extra thick. In October we look at the peopling of the earth. November will be devoted to exploration of this planet and beyond—highlighted by a tour-de-force map of Mount Everest and the Himalayas. December will present a state-of-this-earth report, which we hope will drive home the sad truth that we're not treating our planet as if it were the only home we have. We'll deal with the life-and-death environmental and population problems that will affect all of us in the century ahead, and introduce people who are doing something about them and how they're doing it. With December will be our latest wall map of the world, using a new projection that more accurately portrays this fragile sphere on flat paper.

Those of us still here to celebrate the end of our first century dedicate this issue to those who got us here.

Melbert B. Grosvenor

EDITOR


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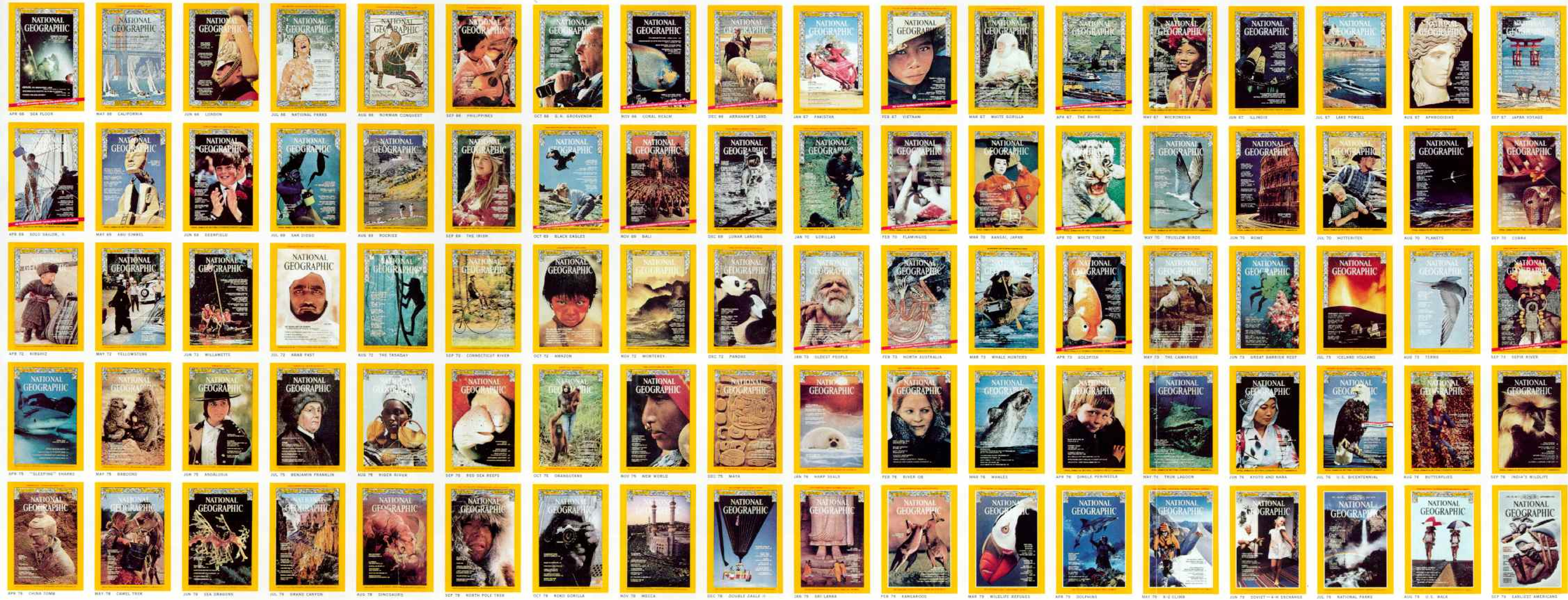
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100 Years
Reporting on the world and all that is in it.
SEP 88 OUR FIRST CENTURY

Three Men Who Made the Magazine

By CHARLES McCARRY EDITOR-AT-LARGE

ON MAY 8, 1902, the volcano Pelée erupted on the Caribbean island of Martinique, releasing a pall of superheated ash and steam that killed nearly every man, woman, and child in the French colonial city of St. Pierre. A convict who happened to be confined in a dungeon and two or three others survived, but at least 30,000 lives were lost.

When news of the disaster reached Washington, Gilbert Hovey Grosvenor, the youthful Managing Editor of the monthly magazine of the National Geographic Society, telegraphed the Society's President, who was vacationing in Nova Scotia, to ask if he would approve spending $1,000 to send a two-man scientific expedition to the scene of the eruption. Grosvenor received the following wire in reply:

Go yourself to Martinique in interests of Magazine and I will pay your expenses. . . . This is the opportunity of a lifetime—seize it. Start within 24 hours and let the world hear from you as our representative. Leave Science to . . . others and give us details of living interest beautifully illustrated by photographs.

—ALEXANDER GRAHAM BELL

EARLY PARTNERS AND IN-LAWS, GEOGRAPHIC EDITOR GILBERT H. GROSVENOR, LEFT, AND SOCIETY TRUSTEE ALEXANDER GRAHAM BELL WALK ARM IN ARM. THE BETTMANN ARCHIVE

Bell's telegram was the first true charter of this magazine, and every Editor since Grosvenor has been guided by Bell's masterly instructions to be decisive and quick in sending people and cameras all over the world to bring back "details of living interest beautifully illustrated by photographs."

When Bell became the second President of the National Geographic Society in January 1898, it had only about a thousand members, most of them in the District of Columbia, and debts of nearly $2,000.

Bell did not want the job. He was not a geographer, and he was occupied with his inventions—among innumerable other projects, he was attempting to invent the airplane through experiments with tetrahedral kites.

As he later wrote in his diary, he became President of the Society only "in order to save it." Family feeling was involved also: The Society's first President, who died in 1897, was Bell's father-in-law, the lawyer and entrepreneur Gardiner Greene Hubbard.

Bell saw THE NATIONAL GEOGRAPHIC MAGAZINE as the means of building a great organization that would permit anyone who was interested in the world to participate, as a member of the Society, in its exploration and discovery. Hitherto the privilege of supporting the great private expeditions that fascinated the 19th-century public with reports of strange peoples, inaccessible places, and great ordeals had belonged to a few scientists and men of wealth.

But Bell understood, as Gilbert Grosvenor remarked many years later, that "the simplest man takes pride in supporting research." This

GRACE ADAMS

idea, more than any other, has been the basis for the growth of the Society and for the popularity of its magazine, which will celebrate its one hundredth anniversary next month.

Bell himself loved reading encyclopedias—"articles not too long, constant change in the subjects of thought, always learning something I have not known before." Though he may not have thought of his plan in exactly this way, he set out to turn the magazine into the perpetual encyclopedia of current knowledge that it has since become.

Other members of the Board of Managers strenuously opposed opening membership to men and women who had no qualification

1916

The Society was still young on June 14, 1916, when 150 employees joined the Preparedness Parade ten months before America entered World War I. They marched behind their young, dynamic "Chief," Gilbert H. Grosvenor, foreground, his wife, Elsie, and Assistant Secretary George W. Hutchison. Hired in 1899 by Society President Alexander Graham Bell, Grosvenor transformed a small technical journal with a circulation of about a thousand into a lavishly illustrated publication with a circulation today of 10.5 million.

for it other than an intelligent interest in the world and all that was in it, but Bell prevailed.

"I can well remember . . . how the idea was laughed at that we should ever reach a membership of ten thousand," Bell said at the National Geographic banquet in 1912. "Why, it was ridiculous!"

Yet by 1912 the Society had increased its membership more than a hundredfold, to 107,000. Prudent management of the Society's funds was providing an annual surplus of

ZULU BRIDE AND BRIDEGROOM IN THE NOVEMBER 1896 ISSUE WAS THE FIRST PICTURE OF A BARE-BREASTED WOMAN IN THE MAGAZINE.

$43,000 to be devoted to the promotion of geographic science.

All this, Bell said, was primarily due to one man, Gilbert Grosvenor, who in less than 13 years had transformed the National Geographic into "the greatest educational journal of the world."

Grosvenor was an unlikely candidate for such striking success. When Bell hired him on April Fools' Day 1899, he was a slender, energetic 23-year-old preparatory-school teacher who had made an outstanding academic record and been a famous tennis player at Amherst College in Massachusetts but had not a single day of experience in the magazine business.

Bell had offered the opportunity to apply for the job to Grosvenor and his identical twin brother, Edwin, the younger twin by about an hour, planned a career as a lawyer, but Bert was deeply interested in Bell's offer.

He was already in love with the Bells' comely young daughter, Elsie May, whom he had gotten to know when her parents invited the twins to visit them in Nova Scotia in the summer of 1897. It was Elsie Bell who had suggested to her father that Bert might be the promising young man he had been looking for.

BELL HIRED Grosvenor at $100 a month, giving him the title of Assistant Editor and the mission of breathing new life into the GEOGRAPHIC. He also offered to put up $87,000 in capital—the same amount Bell and Gardiner Greene Hubbard had lost in an unsuccessful effort to popularize another magazine, *Science*, before selling their interest for $25.

Grosvenor refused, protesting that he lacked the experience to handle such a vast sum (the equivalent of more than one million dollars in today's currency). He said that he believed that new ideas and hard work, rather than an infusion of money, were the answers to the magazine's problems.

The unpaid Editor was English-born John Hyde, a Department of Agriculture statistician. Grosvenor believed that Hyde and a staff of 12 associate editors, also unpaid, were producing a magazine filled with "cold geographic fact, expressed in hieroglyphic terms which the layman could not understand."

In fact, Hyde's magazine contained some colorful, even controversial writing. Hyde was no fainthearted editor where photographs were concerned, either. He published in November 1896 the first photograph of a bare-breasted woman to appear in these pages.

Despite Bell's plan to change the style of the magazine, Grosvenor had no authority to do so. Nonetheless he went at his new job with a will, nominating his father, his twin brother, and his older brother, Asa, for membership, and pestering his father, Bell, and other eminent men to nominate their friends. The annual membership fee was then

two dollars (worth about $28 in today's money), and by November 1899 he had signed up 750 new members.

In his efforts to brighten the magazine's pages, Grosvenor importuned his father to approach his old friend, Gen. Lew Wallace, the author of *Ben Hur*, to contribute an article.

THEN AS LATER, Bert seemed to act on the principle that any problem could be solved by a combination of hard work, frank conversation, and good connections. In January 1904 Bell cabled Bert from Gibraltar asking that he arrange a "national reception" for the remains of James Smithson, which Bell was bringing from Genoa for reburial. The 28-year-old Grosvenor asked President Theodore Roosevelt for an American warship to transport Smithson's remains from New York to Washington. Roosevelt detailed the U.S.S. *Dolphin* for this mission. Grosvenor then persuaded the War Department to provide a military

"Give us details of living interest beautifully illustrated by photographs."

escort to accompany the casket of the benefactor of the Smithsonian Institution through the streets of Washington.

Inevitably Bert Grosvenor's youthful brashness and energy brought him into conflict with the anti-Bell faction—some of whom, Bert noted, had "long white beards."

"I do not intend to get out of their way, as they plainly hint they want me to," he wrote to Bell on August 6, 1900. A week earlier he had written these words to his father: "Mr. Hyde is bent on remaining editor and knows that if I stay in, he will go out. . . . Outwardly I am very respectful and submissive, though it makes me boil."

It was a hot summer in Washington, with more than fifty days when the temperature went up to 90 degrees. Grosvenor sought relief from the heat by going out onto the fire escape of the Corcoran Building, where the Society's two-room headquarters was located, and listening to the jolly tunes of a hurdy-gurdy playing in 15th Street below. He found surcease from his battles with Hyde and the whitebeards by describing them in heartfelt letters to Elsie Bell, who was traveling in Europe with her parents.

His tales of intrigue, treachery, and insult had their effect. On August 30, 1900, Grosvenor received a letter from Elsie in which she promised to marry him. "I've got her at last and she won't get away—and won't try to, either," a triumphant Bert wrote his mother.

"I doubt whether Elsie would have been as sure of her own mind," Mrs. Bell wrote to Mrs. Grosvenor, "if all her love and sympathy had not been aroused by her indignation at the attacks upon him."

The turning point came when Bert was threatened with dismissal. Bell returned posthaste from Europe "to see what I can do for my boy." At a meeting of the full Board of Managers on September 14, Grosvenor was given an $800 raise and the title of Managing Editor.

The infighting that marked this situation left a lasting residue of resentment. Sixty-two years later, in an interview with Assistant Editor Allan C. Fisher, Jr., Grosvenor described his opponents as "real stinkers."

S. S. McClure, the famous editor of *McClure's Magazine*, had recommended that the NATIONAL GEOGRAPHIC change its name, move to New York, abandon the membership idea in favor of newsstand sales, and avoid all mention of the National Geographic Society on grounds that geography was an uninteresting subject. Grosvenor had opposed all these ideas.

When he and Elsie returned from their honeymoon, they learned that the Executive Committee had arranged to have the magazine printed in New York.

Grosvenor canceled the printing contract on his authority as Managing Editor without consulting anyone and brought the magazine home to Washington, where he had it printed at half the cost.

This resolute action completed the rout of the opposition. In February 1903 Grosvenor was made the Editor of the magazine and Director of the Society. At the age of 27, Bert Grosvenor was in charge of everything.

Thereafter very few people outside the family, and almost no one at the Geographic, ever called him "Bert."

Dr. Melvin M. Payne, who came to the Geographic as a *(Continued on page 296)*

ISRAEL C. RUSSELL, U. S. GEOLOGICAL SURVEY

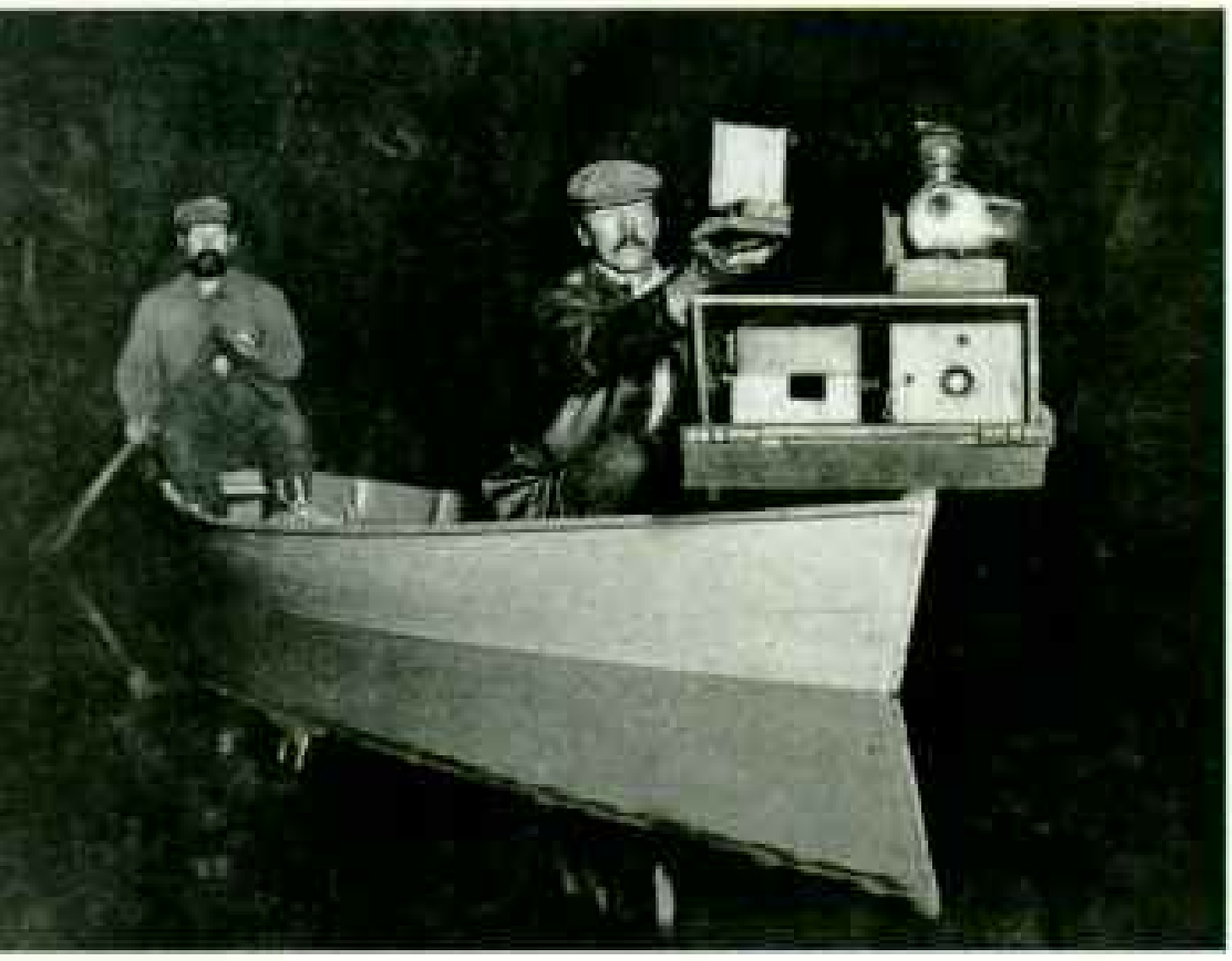
1890

On an uncharted moraine of North America's highest range, members of the first National Geographic Society expedition make a landmark survey of the St. Elias Mountains on the Alaska-Canada border in 1890. One of the Society's 33 founders, geologist Israel C. Russell, headed the project, co-sponsored by the U. S. Geological Survey, and was credited with being first to see Canada's highest peak, Mount Logan, 19,524 feet. The team named numerous mountains and glaciers—including one of each for Society President Gardiner Greene Hubbard.

The Society supported the first aerial surveys of the St. Elias range in the 1930s, led by Bradford Washburn. For ceremonies to honor that event in 1985, Washburn returned and posed holding a tattered Geographic flag (above) from the earlier expedition.

When in 1965 the Canadian government proposed naming a peak for the late President John F. Kennedy, Washburn and Society President Melville Grosvenor recommended 13,905-foot, unscaled "East Hubbard." A Society expedition, led by Washburn, made the first ascent of Mount Kennedy. Team members Senator Robert F. Kennedy and Geographic photographer William Albert Allard stand at the summit.

KAREN KUEHN (TOP L. AND DEE MOLENAAR



1906

Creatures great and small, from the Amazon to the Arctic, the Galápagos to the Serengeti, have moved across GEOGRAPHIC *pages in state-of-the-art images. The first nighttime nature shots ever published in the magazine, by pioneer wildlife photographer and former Congressman George Shiras 3d, appeared in 1906. The public reacted favorably, but two Society board members resigned, saying that "wandering off into nature is not geography."*

On Lake Superior, Shiras (left) sat behind a swivel platform that supported two cameras and a jacklight. He holds his flash—a pan of magnesium powder that,

when ignited, will brilliantly light the night. As another first, Shiras rigged camera and cord so that animals released the shutter themselves. Deer tripped double action—firing a blank cartridge to startle them, then a flash to capture their flight.

For more than 50 years twins John and Frank Craighead have devoted themselves to studying wildlife and the environment and reporting their findings in 13 articles in the GEOGRAPHIC. Their first magazine article in July 1937 pictured Frank (right) with two great horned owls. Using the latest technology, they have spent decades tracking the grizzly, particularly in Yellowstone National Park. John explained in the July 1976 GEOGRAPHIC how satellite imagery helps identify grizzly habitat.

GEORGE SHIRAS 3D (TOP AND LEFT); FRANK AND JOHN CRAIGHEAD

secretary in 1932 and rose to be Chairman of the Board of Trustees, says that he never heard anyone but Rear Adm. Richard E. Byrd and John Oliver La Gorce, the first member of the staff hired by Grosvenor, address him by his nickname. "Oh, he was it, the boss in every respect, no questions about that," says Dr. Payne.

EVERY EDITOR who came after Grosvenor has been, as he was and believed the Editor must be, an absolute monarch whose opinions, judgment, and word are final in everything having to do with the magazine.

Although Bell retired as President in 1903, the year after Hubbard Memorial Hall was donated by the family of Gardiner Greene Hubbard as the Society's first real headquarters, his interest in the magazine did not flag. Bell frequently sent his son-in-law story ideas, as well as packages of photographs, clippings, and advice on the technique of editing. Grosvenor did not always find Bell's suggestions practical. "Mr. Bell was always anxious to be an editor," he dryly observed to Allan Fisher in 1962.

Bell kept on urging Grosvenor to travel for the magazine. "Alec won't be content until Bert goes somewhere," Mrs. Bell wrote in 1902. "[This time] it is to the wilds of Newfoundland to ascertain the truth . . . of a mysterious valley shut in among mountains with a still more mysterious river that disappears into the face of a perpendicular cliff 1,500 ft. high and goes—no one knows whither."

In 1907, responding to a request from Elsie Bell Grosvenor for his thoughts on the magazine, Bell wrote, "The features of most interest are the illustrations. . . . The disappointing feature of the Magazine is that there is so little in the text about the pictures. . . . It seems to me that one notable line for improvement would be either to adapt the pictures to the text *or the text to the pictures.* Why not the latter?"

In these four sentences, Bell predicted, if he did not invent, the whole future development of NATIONAL GEOGRAPHIC. With his brilliant gift for perceiving the obvious, he saw that the photograph could be turned into a narrative device that was, for journalistic purposes, more dramatic, more enticing, and more interesting than words.

Grosvenor, who was a writer by necessity (as a young man he sold many articles to other publications as a means of supplementing his earnings in addition to writing or rewriting most of the contents of the GEOGRAPHIC) and in the early years spoke of improving the GEOGRAPHIC almost exclusively in terms of creating a more readable text, steadily guided the magazine in the direction Bell indicated.

This may well have been because Grosvenor had already perceived that if he wished to make something new, he must use what was new—photography. He had published 11 pages of photographs of Lhasa, Tibet, from the Imperial Russian Geographical Society in the January 1905 issue, an editorial decision so unprecedented—and so expensive—that he expected to be fired for it. Instead readers stopped him in the street to congratulate him.

Grosvenor had printed the Lhasa pictures primarily to fill up empty pages, but when he saw the stir they created, he repeated the experiment, running 32 consecutive pages of photographs of the Philippines in April 1905.

No editor, as he often said, had ever before printed so many pictures (138) on one subject in a single issue, and he regarded this feature as a turning point in the life of the magazine.

Membership grew in 1905 from 3,400 to more than 11,000, and increased revenues permitted the Society to relieve Bell, after nearly six years, of the necessity of paying the first $1,200 of Grosvenor's annual salary out of his own pocket.

Thereafter Grosvenor was continually on the lookout for beautiful and unusual pictures,

AN EIGHT-FOOT-LONG PANORAMA OF THE CANADIAN ROCKIES IN THE JUNE 1911 ISSUE WAS OUR LONGEST FOLDOUT. SPECIAL SUPPLEMENTS AND MAPS HAVE BEEN OFFERED TO MEMBERS FROM THE EARLIEST DAYS. CHARLES D. WALCOTT

and by 1908 more than half the magazine's pages were devoted to photographs.

IN A LETTER FROM KYOTO, JAPAN, in 1912 Eliza R. Scidmore, an adventurous writer and photographer who may have been the first American professional geographer of her sex and was certainly the first woman to be elected to the Society's Board of Managers, gently tweaked Grosvenor's nose over his enthusiasm for photographs.

"Herewith 31 pictures of [Japanese] 'Women and Children,' mostly children, as you see," Miss Scidmore wrote. "I have had them made uniform in size and strongly colored, so that you can cover yourself all over with glory with another number in color and thereby catch a few thousand more subscribers."

This was a reference to Grosvenor's triumph in printing, in the November 1910 issue, 24 pages of hand-tinted photographs of scenes in Korea and China. These were black-and-white photographs that had been colored by a Japanese artist according to the instructions of the photographer, William W. Chapin.

The response was so overwhelming that Grosvenor inserted a color feature in every subsequent November issue of the magazine. "November," he explained, "is the big renewal number."

When true color photography was perfected, he crowded the pages of the magazine with images captured by each new process.

Some thought that he overdid it, or did it with too little method. In Grosvenor's time modern ideas of page design had scarcely been thought about. Although GEOGRAPHIC editors provided layouts to show the printer where the words and pictures should go, photographs often appeared in the middle of articles that bore no relation to them whatever.

"It is not against color that my soul rebels. It is against the artificial massing of color, the lily-painting," wrote bluff Maynard Owen Williams later. Williams, the far-ranging Chief of the Foreign Editorial Staff who contributed 70 articles and more than 2,200 photographs to the magazine, described himself as "a roughneck and a camera-coolie."

Grosvenor pressed on. He had, wrote Frank Luther Mott in *A History of American Magazines*, "transformed the GEOGRAPHIC into a kind of periodical never before known."

"Adapt the pictures to *the text* or the text to the pictures."

Although it was clear very early that pictures were responsible for this success, Grosvenor continued to take pride in the progress of GEOGRAPHIC writing toward his goal of realistic reportage and simple, clear exposition, and with some reason.

Joseph F. Rock, the most famous and probably the most eccentric of the free-lance explorer-photographer-writers, distilled the style that made the GEOGRAPHIC into this paragraph:

"All was quiet and hushed, as I lay on my camp cot facing the tomb of the buddha whose room I occupied. Outside, the glacier stream roared, the thunder rolled, and Dordjelutru staged an electrical display in this weird canyon. I shivered. Here, all alone, in the presence of a sacred mummy in a hoary lamasery, I listened to the tempest breaking over the icy peak of Minya Konka. . . . Had time been set back a thousand years? Did I dream, or was it all reality?"

Rock and the others traveled by steamship across the oceans and by camel, mule, and litter across the land. Threatened by Chinese bandits, Rock and his coolies escaped with his trunks of cameras and film across a river on inflated goatskins. Correspondents sometimes vanished for a year or two at a time,

returning with half a dozen stories and a motion picture.

Grosvenor did not restrict subject matter. "When I hear of a story that will interest our members," he said, "I do not ask if it is about geography." The excavation and mapping of the lost Inca city, Machu Picchu, by Hiram Bingham in 1912, was essentially archaeological—so much so that Grosvenor told Bingham at first that the work might not be "sufficiently geographic" to justify a grant of money.

Bingham's findings, supported in part by a $10,000 Geographic grant, produced 186 pages of photographs, text, drawings, and maps for the April 1913 issue of the magazine. The lesson was a valuable one, and after that the Society covered every sort of expedition, flight, voyage, and excavation that promised to produce new knowledge—and interesting reading.

GROSVENOR was keenly interested in what interested people. He studied other magazines for ideas, and at National Geographic lectures, which commonly attracted 3,000 people in the afternoon and another 3,000 in the evening, he watched both screen and audience to determine which pictures the people liked the most. He found that even well-brought-up young ladies preferred the dramatic ones and were not shocked by the most explicit material.

The result was a dazzling, and sometimes dizzying, array of stories about everything from backyard insects (Grosvenor's brother-in-law, David Fairchild, built a camera 12 feet long, making novel images of grasshoppers, flies, and ants many times larger than the creatures themselves) to royal tombs in Egypt to "The Acorn, a Possibly Neglected Source of Food" to the magnificently illustrated "Fifty Common Birds of Farm and Orchard."

Grosvenor let his writers describe things as they saw them, and they sometimes expressed opinions that would make a modern editor blanch. ("From the sounds [that blind street musicians in China] produced on their strange, discordant instruments," wrote Chapin in 1910, "we thought it would be much to their own advantage to be deaf also.")

Grosvenor tried to turn his writers into photographers, providing them with the best cameras available and all the film they needed.

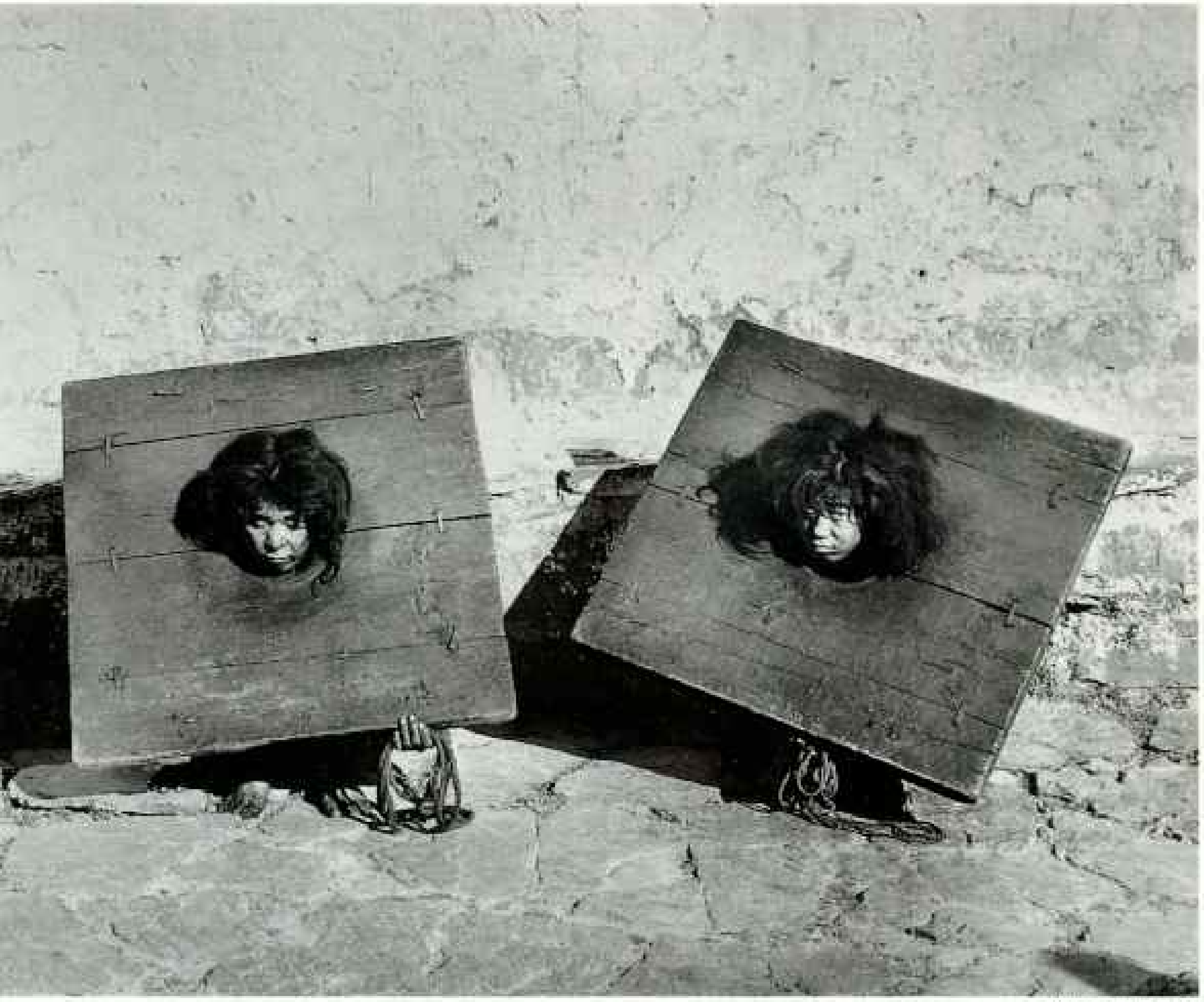
Some resisted. Grosvenor explained the principle to Maynard Owen Williams: "The

illustration made the National Geographic Magazine and the magazine's life depends on getting better and better pictures. The professional writer always *patronizes* the photographer. All right, let him, but pay no attention to him, but go ahead and *get pictures.*"

He continually warned Franklin L. Fisher, the conscientious Chief of the Illustrations Division, against penny-pinching. "Please note that I do not care whether he gets $50 or $100 or $200 worth more photographic material than he can use," he wrote in regard to Rock, a profligate user of film. *"The point to insure is that he get material to work on."*

As Williams told Assistant Editor Jesse R. Hildebrand, "Nothing lies as badly as a photograph that is not up-to-date."

More and more, Grosvenor came to regard text stories as an opportunity for photography. Often he would buy a manuscript, file it away, and wait for years for the photographs that might make it publishable. "There was quite a



BOTH BY JOSEPH F. ROCK

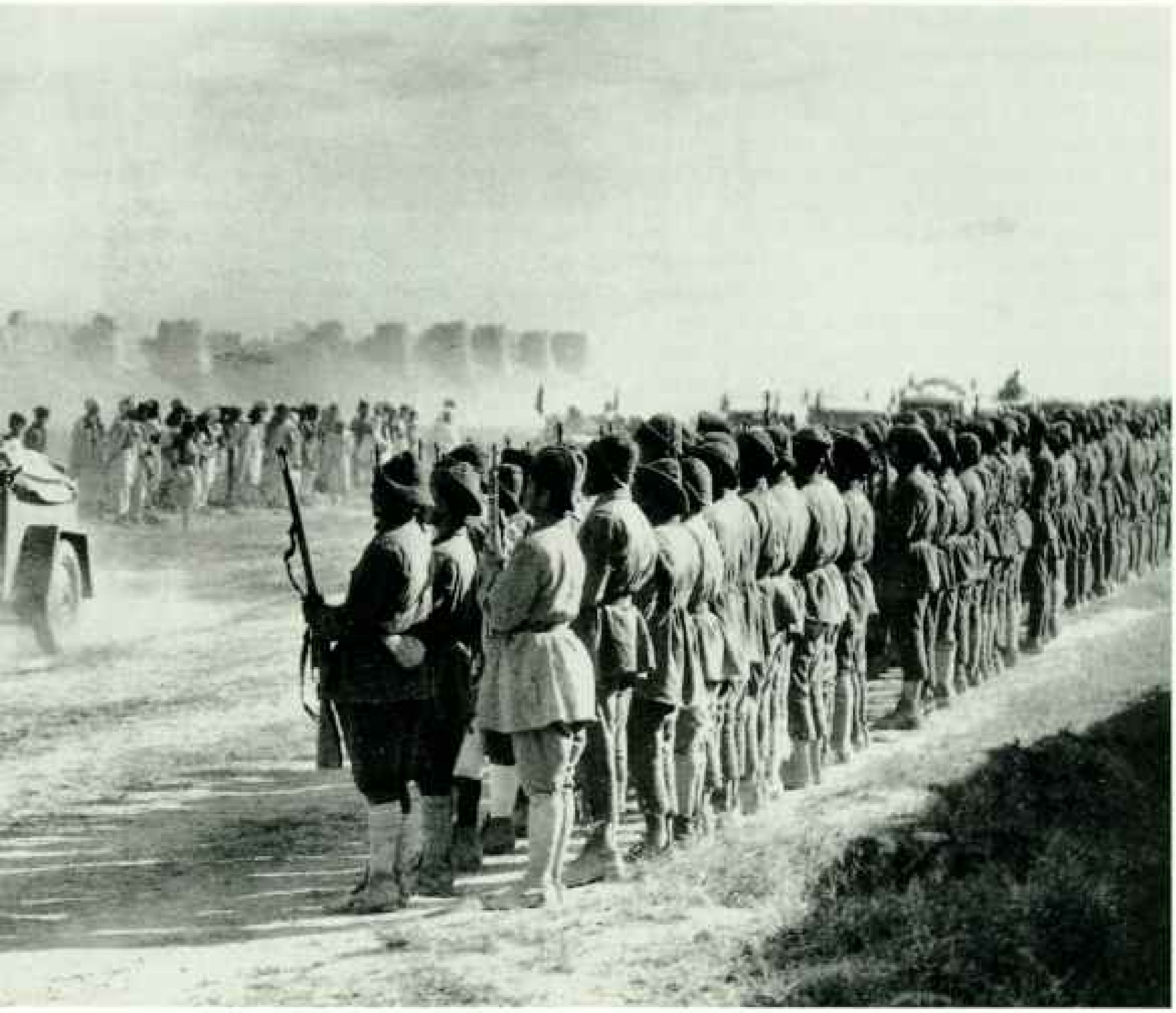
1925

In the heart of Asia Joseph F. Rock encountered customs unimagined in 20th-century America. Three pilloried murderers had spent many months in a Chinese dungeon before being brought out for Rock's photograph. Posing with the Prince of Choni in 1925, Rock exemplified early explorers who dropped out of sight, emerging years later with enough film and journals for several GEOGRAPHIC stories. From Choni he wrote: "You will hear again from me when I shall have emerged from the Ngolok country. If you do not . . . then, it may be that I shall have found a final resting place in that land." The eccentric Rock always took with him the starched attire and accoutrements of Western civilization (including a phonograph, opera records, and a portable bathtub).

1931

By camel, yak, and pony, GEOGRAPHIC journalists have roamed the world. For Maynard Owen Williams, an unforgettable assignment was as the American correspondent with Frenchman Georges-Marie Haardt's motorized expedition across Asia, saluted by Afghan troops (above) in 1931. For more than 30 years Williams (left, dressed in Arab garb) was one of the magazine's "double threats," adept as both writer and photographer.

In a photograph published in 1937, a Jordanian sheik entertained Society Vice President John Oliver La Gorce (right, seated third from left) and former world heavyweight boxing champion Gene Tunney and his wife with a giant kettle of rice, gravy, and the meat of five sheep.



MAYNARD OWEN WILLIAMS (ABOVE AND LEFT); © ERIC MATSON

store of articles to be pulled out in case the subjects became newsworthy," recalls Frederick G. ("Ted") Vosburgh, a professional journalist who in 1967 became the only word man to be appointed Editor of the magazine. "That meant you had to update an article that had been lying in the files for maybe ten years.

"Travel funds went mainly to the double threats, fellows like Maynard Owen Williams and that other great field man, Bob Moore, who could bring back the story in words and pictures," says Vosburgh. "Most of us had to write on our own time on subjects close to home to get stories into the magazine."

Grosvenor made himself into a first-rate photographer, and he was a student and teacher of the craft. Some of his pictures, particularly the luminously affectionate candid portraits that he made of his wife and children in the company of the Bells and other relations at their summer place at Baddeck, Nova Scotia, rank among the best ever taken by a GEOGRAPHIC photographer.

He hired people for what he thought they could do for the magazine.

Grosvenor, the descendant of seven generations of New England gentry (the first Grosvenor to come to America was killed in 1691 by the blow of an Indian's tomahawk at Roxbury, Massachusetts), was a formal man who called his colleagues and most other people Mr. or Mrs. or Miss; the staff referred to him as "Chief."

There is a certain endearing stiffness to the many photographs of the solemn Grosvenor that were published in the magazine over the years, as if his affectionate wife had placed his aviator's cap on his head or propped him up against a redwood just before the photographer exposed the film.

Yet he was a gregarious man—he loved big ceremonial occasions and was never so happy as on an outing with his wife and children—who seems to have understood the value of humor.

"Father never minded all the jokes about the GEOGRAPHIC," says his daughter Dr. Mabel Grosvenor, a pediatrician. "He said they made people sit up and think about the GEOGRAPHIC."

Grosvenor had a keen sense of public relations. Remembering a dinner that he had inveigled his second cousin, William Howard Taft, who became the 27th President and the tenth Chief Justice of the United States, into attending, he said, "Mr. Taft came, and we got a lot of publicity for the magazine we needed."

Other Presidents, including Calvin Coolidge, who had played handball with Grosvenor at Amherst, visited the Geographic, especially to award the Society's Hubbard Medal to such noted explorers as Richard E. Byrd and Charles A. Lindbergh.

VOLKMAR K. WENTZEL, a member of the Foreign Editorial Staff, was reprimanded by the business office for spending $400 to buy a surplus army ambulance on assignment in India and emblazoning it with the American and Society flags and the legend *National Geographic Photo Survey of India*.

"I was so depressed I was ready to jump into the Ganges," Wentzel recalls. "However, a couple of days later I got a telegram from Dr. Grosvenor saying, 'Congratulations acquisition National Geographic Photo Survey Car.' He understood, you see."

When the *New Yorker* magazine ran a three-part profile of Grosvenor in 1943, some believed that the author, Geoffrey T. Hellman, had had a bit too much fun with the Chief's eccentricities, especially his passion for bird-watching and for inserting pictures of birds in the magazine at every opportunity.

But Grosvenor liked the portrait, admired Hellman's writing and reporting, and wrote *New Yorker* Editor Harold Ross a courtly letter of thanks for "the honor you have done me and the National Geographic Magazine."

A somewhat stunned Ross wrote back: "The National Geographic was my father's favorite magazine. . . . If he were alive, I'd show him your letter and impress him as I never was able to impress him during his lifetime."

Grosvenor's patrician manner probably encouraged the legend that the editorial offices of the GEOGRAPHIC were in his time a sort of gentlemen's club, but in fact Grosvenor often was one of the few certifiable gentlemen on the premises. He hired people for what he

thought they could do for the magazine, not for their social or educational credentials.

Many early stars belonged to that class of self-taught American go-getters that flourished in the 19th and early 20th centuries. Charles Martin, the inventive head of the photo lab, had been an Army enlisted man whom Dean Worcester, then a government official, had borrowed to make photographs for the article on the Philippines. Joseph Rock was the son of an Austrian manservant. John Oliver La Gorce, Grosvenor's right-hand man for half a century and the third Editor of the magazine, was a charming and gregarious person who made friends with some of the most famous people in the world, but he had only a high-school education.

Some were newspapermen or footloose youths who simply walked in off the street and captured Grosvenor's fancy. Luis Marden, a photographer, writer, and Renaissance man who discovered the wreck of the *Bounty* among many other feats and became one of the greatest stars in the history of the magazine, overheard another man on an elevator saying that the GEOGRAPHIC was looking for an unmarried man to work as a photographer. He applied for the job and, somewhat to his own surprise, got it.

The place became so militantly unpatrician, in fact, that Grosvenor felt that he must warn Franklin Fisher. "I wish you would rid yourself of your grudge against Boston Harvard men," he wrote in 1934. "Our job on the National Geographic Magazine is to get the best material, regardless of whether we like or dislike the speech or manners of the man who has it."

Grosvenor was proud of having been among the first employers in Washington to hire female secretaries and clerks and thought that they were far better than men at such work. His longtime Director of Personnel, Mabel Strider, is still remembered as one of the most powerful figures in the annals of the Society. It is clear from Grosvenor's correspondence with Eliza Scidmore and many others that he liked women and wrote to them in the same tone that he used to address male correspondents. In the 1930s and 1940s he urged his editors to find more female writers, noting in 1938 that many best-sellers of that year were written by women.

"I am sure there must be some hidden talent," he wrote to Hildebrand in 1949. "Men are more forward . . . than women; perhaps that is one reason why the ladies . . . have not received as many assignments."

Yet he insisted that male and female employees eat in separate dining rooms. Carolyn Bennett Patterson, who became Senior Assistant Editor in charge of the caption-writing staff, recalls that she was scolded by Miss Strider for "walking too fast down the hall."

The practice of printing photographs of women in what a GEOGRAPHIC caption writer described as "true native dress" may seem questionable. While it can hardly be denied that these pictures played a role in the dramatic growth of membership, Grosvenor regarded the decision to publish them as a victory over prudery.

"That sort of picture at that time was quite novel—why, people were afraid to print anything showing a woman's breasts," he told Allan Fisher. Then, breaking off to examine an illustration dating from 1910, he exclaimed, "There you see a suckling child [and its mother]. They're beautiful!"

ON THE OTHER HAND he instructed his first Director of Advertising, John Oliver La Gorce, never to accept advertisements for alcohol, tobacco, or patent medicines. Grosvenor reported in his article on Russia in 1914 that the tsar's wartime ban on vodka had proved so popular with the people that they wished their sovereign to make prohibition permanent.

Grosvenor was overjoyed in his earliest days when someone overheard two workingmen discussing the GEOGRAPHIC. Those were the readers he wanted in their millions.

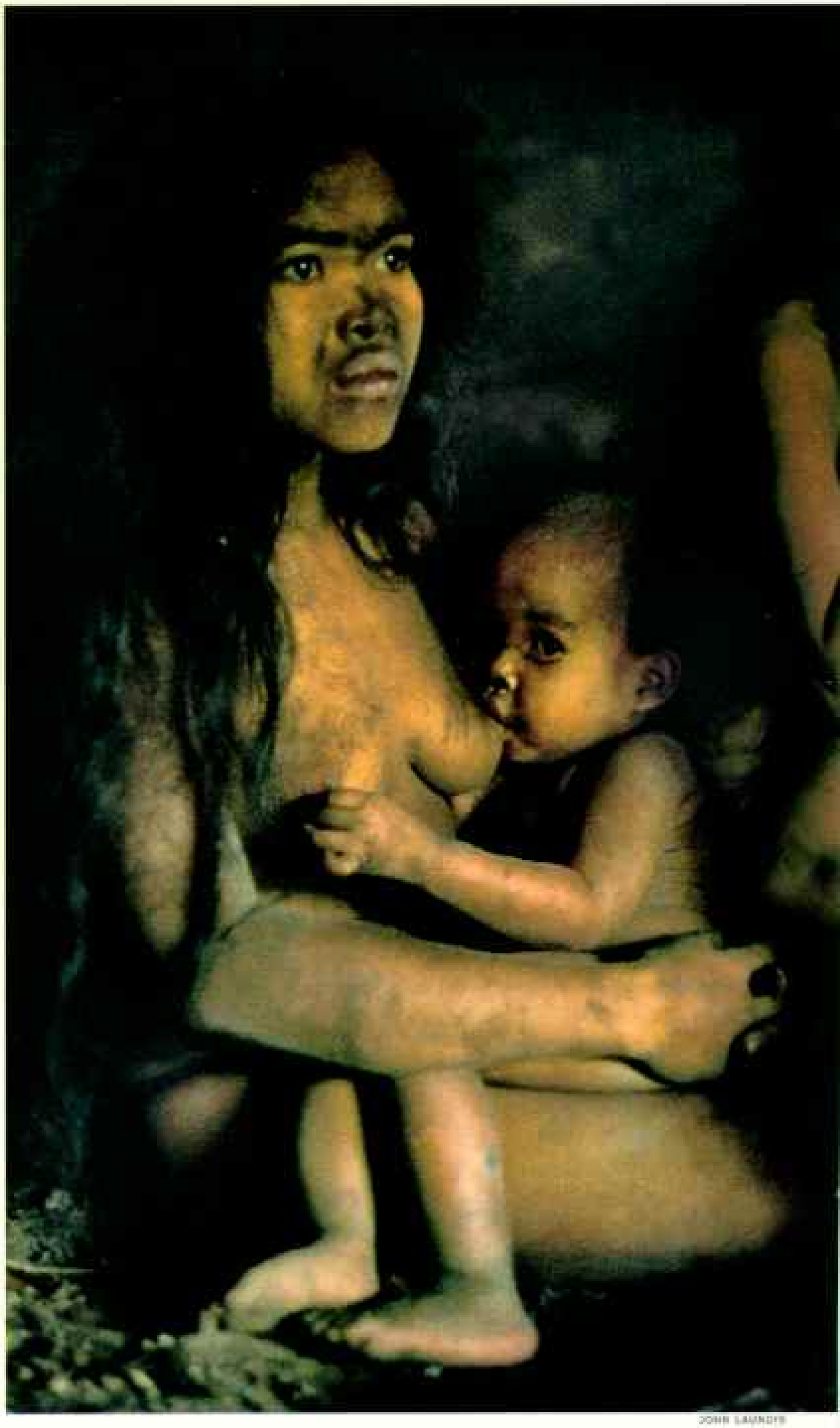
"Please remember always to make your text as simple and natural as you can—so simple that a child of ten can understand it," he wrote to Williams, a former missionary who sometimes wrote like an ecstatic preacher.

Grosvenor could be brusque with a subordinate who displeased him or who strayed from the principles of accuracy, fairness, and high-quality production that he had laid down.

After detecting an error in a story about Chicago, he blistered long-suffering, and in this case quite innocent, Assistant Editor William Joseph Showalter: "The cornerstone of the success of the National Geographic is fidelity to truth; once lose our reputation for

"We felt the mind-bending sense of having returned to human origins," reported GEOGRAPHIC *writer Kenneth MacLeish in his 1972 account of his stay with the Tasaday, a Stone Age tribe of cave dwellers found in the wilds of the Philippine island of Mindanao. Cultivating no plants, weaving no cloth, making no pottery, the tiny tribe of 24 food gatherers were arguably the most primitive people to survive into the 20th century. Recent stories that the Tasaday were a hoax have been largely discredited.*

Though some of the early magazine accounts of native tribes reflected a Victorian condescension, later writers approached their subjects with empathy and respect. The portrayal of native women in their natural mode of dress in the magazine became a hallmark—and a source of countless jokes. For generations of impressionable youngsters, these pictures, along with those depicting other exotic scenes, constituted their first exposure to non-Western ways. For Elizabeth Bishop, author of "In the Waiting Room" (opposite), the experience seems to have been a bit traumatic, though, ultimately, life-enhancing.



JOHN LAUNOIS

In the Waiting Room

In Worcester, Massachusetts,
I went with Aunt Consuelo
to keep her dentist's appointment
and sat and waited for her
in the dentist's waiting room.
It was winter. It got dark
early. The waiting room
was full of grown-up people,
arctics and overcoats,
lamps and magazines.
My aunt was inside
what seemed like a long time
and while I waited I read
the *National Geographic*
(I could read) and carefully
studied the photographs:
The inside of a volcano,
black, and full of ashes;
then it was spilling over
in rivulets of fire.
Osa and Martin Johnson
dressed in riding breeches,
laced boots, and pith helmets.
A dead man slung on a pole
—"Long Pig," the caption said.
Babies with pointed heads
wound round and round with string;
black, naked women with necks
wound round and round with wire
like the necks of light bulbs.
Their breasts were horrifying.
I read it right straight through.
I was too shy to stop.
And then I looked at the cover:
the yellow margins, the date.

Suddenly, from inside,
came an *oh!* of pain
—Aunt Consuelo's voice—
not very loud or long.
I wasn't at all surprised;
even then I knew she was
a foolish, timid woman.
I might have been embarrassed,
but wasn't. What took me
completely by surprise
was that it was *me:*
my voice, in my mouth.
Without thinking at all
I was my foolish aunt,
I—we—were falling, falling,
our eyes glued to the cover
of the *National Geographic,*
February, 1918.

I said to myself: three days
and you'll be seven years old.
I was saying it to stop
the sensation of falling off
the round, turning world
into cold, blue-black space.
But I felt: you are an *I,*
you are an *Elizabeth,*
you are one of *them.*
Why should you be one, too?
I scarcely dared to look
to see what it was I was.
I gave a sidelong glance
—I couldn't look any higher—
at shadowy gray knees,
trousers and skirts and boots
and different pairs of hands
lying under the lamps.
I knew that nothing stranger
had ever happened, that nothing
stranger could ever happen.

Why should I be my aunt,
or me, or anyone?
What similarities—
boots, hands, the family voice
I felt in my throat, or even
the *National Geographic*
and those awful hanging breasts—
held us all together
or made us all just one?
How—I didn't know any
word for it—how "unlikely". . .
How had I come to be here,
like them, and overhear
a cry of pain that could have
got loud and worse but hadn't?

The waiting room was bright
and too hot. It was sliding
beneath a big black wave,
another, and another.

Then I was back in it.
The War was on. Outside,
in Worcester, Massachusetts,
were night and slush and cold,
and it was still the fifth
of February, 1918.

From *The Complete Poems 1927-1979* by Elizabeth Bishop; © 1979, 1983 by Alice Helen Methfessel. Reprinted by permission of Farrar, Straus and Giroux, Inc.

RICHARD H. STEWART (TOP AND ABOVE)

1934

A frantic kick helped free a stuck crewman as the damaged research balloon **Explorer** *fell during a 1934 flight. In 1935* **Explorer II** *(left) ascended to an altitude of 13.71 miles, a record that stood for 21 years. At the South Dakota launch site, Thomas W. McKnew (below left, at left), Assistant Secretary of the Society and its project officer for the* **Explorer** *missions, observed preparations with his secretary, Melvin M. Payne. Today both are Chairmen Emeritus of the Society. This year, McKnew (below, at*

BILL BALLENBERG

left) and Payne, at right, presented an air sample collected on the 1935 flight to Joseph O. Fletcher of the National Oceanic and Atmospheric Administration. NOAA will compare this unique and potentially valuable sample with present-day air in a study of atmospheric degradation. From the early flying machines to spacecraft, the National Geographic Society has endeavored to expand knowledge of what lies beyond.

accuracy, and the GEOGRAPHIC is doomed." At the bottom of this memo he scrawled, "Please do not talk to me about this matter."

Yet when Luis Marden, then a junior member of the staff, was married, Grosvenor heard about the event and sent him a two-volume bird guide and a touching note of congratulations. "Now that you are married," he wrote, "you will realize what unfortunate people bachelors are."

In 1926 Grosvenor sent this terse memorandum to Assistant Editor Ralph Graves: "Never accept anything from Magoffin. His ways are not our ways." What exactly the ways of Magoffin might have been and why they alienated Grosvenor are not recorded in the files.

Gradually the staff and Gilbert Grosvenor grew old together. Joseph Rock, the friend of the king of Muli (who dined in the same room with the gilded mummy of his royal uncle, and whose body wastes were "molded into pills, gilded, and dispensed among the peasants to prevent illness"), continued to send back his marvelous photographs and his long, convoluted manuscripts from the remotest parts of Asia. In 1948, after 29 years of service, Maynard Owen Williams wrote to Grosvenor: "Never grieve for me if it is my good fortune to die with my boots on. That's what I most hope for."

The magazine settled into a long afternoon, repeating the successes of an earlier day, living by methods of an earlier time. After decades on the job, the staff Grosvenor had assembled knew, perhaps too well, what the Chief wanted, and they kept giving it to him.

In the late 1930s the guard began to change.

PAINTING BY TOM LOVELL

Andrew H. Brown, a fluent young writer who greatly pleased Grosvenor with the popularity of his articles, was hired in 1936. After World War II Beverley Bowie, a former intelligence officer and Harvard man, introduced a note of poetry into the text before dying young of cancer in 1958. The double-threat man-and-wife team of Franc and Jean Shor invested stories with an atmosphere of breezy sophistication.

George W. Long, the only GEOGRAPHIC staffer ever to lose his life in the line of duty (his aircraft vanished over the Atlantic in 1958), and a skillful editor named Robert Conly began handling the copy of the veterans. John Scofield, a future Associate Editor, joined the staff in 1953, after his free-lance articles impressed Ted Vosburgh.

New men sometimes found older ones out-of-date and chafed under the system that kept editorial experimentation to the minimum.

"Nothing I can do in the name of God, grammar, or friendship will prevail upon Williams to write a simple declarative sentence," wrote Hildebrand to Grosvenor.

"I am going home," Williams retorted in a countermemo. "(Declarative sentence.)"

GILBERT HOVEY GROSVENOR remained on the job for 55 years, and when he retired in 1954 at the age of 78, the Society's membership exceeded two million. He had outlived 65 of the 88 persons who had served during his tenure as members of the Board.

In his letter of resignation as Editor, Grosvenor referred to "the presence of a strong son beside me" that he had enjoyed for

END OF THE TRAIL IN YOSEMITE NATIONAL PARK APPEARED IN A 1925 ARTICLE ON THE AUTOMOBILE, WHICH POINTED OUT THE NEW FREEDOM TO TRAVEL. LONG COMMITTED TO OUR NATIONAL PARKS, THE GEOGRAPHIC HAS PUBLISHED MORE THAN 100 ARTICLES ON THE GLORIES AND THREATS TO EXISTING PARKS AND ADVOCATED NEW ONES. STUDEBAKER CORPORATION OF AMERICA

30 years, but he recommended John Oliver La Gorce as his successor. The son, Melville Bell Grosvenor, who had been waiting quietly for his opportunity since 1924, became Associate Editor and Vice President.

Melville, born in 1901, was the first of Gilbert and Elsie Grosvenor's two sons and five daughters and is remembered by nearly everyone who ever knew him for his joyful nature, his good-hearted impulsiveness, and his love of life.

"He had the enthusiasm of several 12-year-olds," recalls Melvin Payne. "I don't often use this word, but there was a certain sweetness about Melville. It was unusual in a man as big and strong as he was. But it was there."

Apparently it was there from the beginning. "You never saw such a fascinating baby," wrote Melville's Grandmother Bell in 1902.

"Melville . . . had the enthusiasm of several twelve-year-olds."

"I don't know how I live without him from day to day."

Melville and Grandfather Bell were all but inseparable. "My first conscious memory was sitting on the lap of a jolly man with a snow-white Santa Claus beard and sparkling black eyes," Melville wrote after he grew up. "[He'd say,] 'Pull my nose, Melville.' I'd reach up and tweak his nose and he'd go 'bow-wow-wow. . . .' 'Now my beard.' Then he'd bellow an awful growl."

Melville rode on the back of Bell's beautiful coach horse, Champ (and later learned to ride standing up on the back of a galloping horse of his own), did his homework in his grandfather's study while the inventor did his own work, made a toy steamboat with an egg and a candle under the old gentleman's direction, went to the movies with him—and stopped on the way home at the bakeshop at Wisconsin Avenue and P Street for apple pie. Sweets were forbidden to Bell, a diabetic, and he would warn, "Don't you say a word to your grandmother."

Grandfather and grandson spent a whole winter planning a Robinson Crusoe experiment in Nova Scotia, and when summer came,

roughed it together in Bell's beached houseboat in an uninhabited cove of Bras d'Or Lake with the idea of living off berries and roots. "They lasted about a day," Dr. Mabel Grosvenor recalls.

"My brother Mel was very like my Grandfather Bell," says Dr. Mabel. "I don't know whether he inherited it or not, but he had the same enthusiasm and curiosity. They were very, very much alike. Mel was much more like Grampy than like Father."

Melville graduated from the United States Naval Academy in 1923. He resigned his commission and joined the staff of NATIONAL GEOGRAPHIC the following year, beginning a wait for leadership that in its length, and in the patience of the heir apparent, rivaled that of Queen Victoria's son, Edward VII, who was 59 when he became king of Great Britain and Ireland.

Melville was almost 56 when at last he was appointed Editor and President in January 1957. He had risen slowly through the ranks, performing nearly every job on the masthead dealing with both words and pictures.

He was a fine picture editor and an excellent judge of text, even though he was a miserable speller (his father advised him to write faster and look up troublesome words in a 50-cent dictionary afterward). He was such an impatient reader that Senior Assistant Editor Bart McDowell, who ghosted many of the articles that Melville signed, once suggested that manuscripts should be lopped off at the point where the Editor stopped reading, since his attention span was perfectly calibrated to that of the average reader.

THE MAGAZINE's distinctive first-person style has been an uncomfortable one for many writers. When Melville's son, Gilbert M. Grosvenor, and Allan Fisher proposed a poll of the members to see if they would accept a change, Melville told them to go ahead, but predicted that 80 percent would want GEOGRAPHIC writers to continue using "I" and "me."

"He was off by 2 percentage points," says Fisher. "Eighty-two percent of those polled favored keeping the old familiar first person."

But Melville's greatest quality, by common consent, was his talent for leadership. He recognized good people when he found them, and when he found them, he hired them.

Few remember him by any but his given name, and few would differ with Senior Assistant Editor Howard E. Paine, who says, six years after his old chief's death and 21 years after his retirement as Editor, "I miss Melville every day."

Like his Grandfather Bell, Melville retained the boundless curiosity of boyhood well into old age. "Oh, boy, this is going to be wonderful!" he would cry, setting out for a sail on Bras d'Or Lake, waters he had navigated thousands of times before. Once under way he would be captain, guide, storyteller, and chief cook all in one, making pancakes in the shape of letters of the alphabet to match the names of any youngsters who happened to be aboard. His style as Editor was not so very different.

A GIANT HEAD FROM THE OLMEC CULTURE WAS UNCOVERED BY DR. MATTHEW W. STIRLING IN 1946. HIS TEN ARTICLES ON FINDS IN MEXICO AND CENTRAL AMERICA ARE AMONG 282 ARCHAEOLOGICAL REPORTS THAT HAVE APPEARED IN THE GEOGRAPHIC. RICHARD H. STEWART

This miraculous capacity to be interested in everything brought him through his long apprenticeship with his spirits not only intact but also glowing in anticipation of the fun that lay before him. Although it is likely that Melville's gift for enthusiasm was a factor in the length of that apprenticeship, his father was pleased by the results his son achieved as Editor.

"Melville realizes, as I have tried to, that as

1960

Tracing the family of man, Louis S. B. Leakey, his wife, Mary, and son Richard have pushed back the horizon of human origins, reporting since September 1960 on their fossil discoveries in East Africa. Louis and Richard (left) examine fossils found at Lake Rudolf, Kenya. At Laetoli, near Tanzania's Olduvai Gorge where Louis and Mary made many of their discoveries, Mary uncovered 3.7-million-year-old footprints preserved in volcanic ash. That long ago moment, re-created by an artist, appeared in the April 1979 issue.

Among the many protégées of Louis Leakey were premier field researchers in primate behavior: Jane Goodall, who discovered that chimpanzees fashion tools (and make war); Biruté Galdikas, who found that orangutans are also tool users; and Dian Fossey (right), whose murder by an unknown assailant in 1985 ended 19 years of pioneering gorilla studies.

GORDON W. GAHAN

PAINTING BY JAY H. MATTERNES

BOB CAMPBELL

the years pass, a different . . . method of expression is necessary," Gilbert Grosvenor said, five years after the changeover.

Even before he took the helm, Melville was working toward methods that would break down the orthodoxy that had settled onto the magazine as the staff grew older and more set in its ways. There had been signs of rigidity for many years. When Maynard Owen Williams tried out a Rolleiflex camera in the 1930s, he was told to "junk it" because the pictures he sent back were square, whereas only rectangular pictures, vertical or horizontal, were permitted in NATIONAL GEOGRAPHIC layouts.

Although the Rolleiflex eventually became standard equipment, a prejudice against candid cameras ran deep and lasted long. Even after the smaller cameras were adopted, they were often used to make the same static pictures produced by older cameras mounted on tripods. By the time Melville took over in 1957, of course, the magazine was half-filled with the slightly overbright, nervous hues of Kodachrome, a film that made it possible, in conjunction with new cameras and lenses, to photograph fast-moving objects in color and to make enlargements of any size that would be absolutely faithful to the colors of the tiny original.

The flexibility and artistic license that this new technology bestowed on photographers and picture editors opened up the possibility of a magazine as new, in its way, as the one that Melville's father had created.

NEW TECHNOLOGY made possible an expansion, both in circulation and in the horizons of coverage, that the elder Grosvenor could only dream about—although La Gorce had foreseen the need for new printing methods if the magazine were to grow. By the early 1960s Melville had, with the support of Thomas W. McKnew, Executive Vice President, moved the printing of the magazine to Chicago, where the high-speed presses of R. R. Donnelley & Sons made it possible not only to print many times the 2.3 million copies that could be produced on the old presses in Washington, but to print every illustration in color.

Melville wanted a staff that would understand this opportunity and one with the talent and daring to take advantage of it. Even

before La Gorce retired, he started hiring. In this, as in everything else, he acted decisively on instinct, offering jobs to virtual strangers on the basis of brief interviews. Behind his seeming impulsiveness lay a clear purpose and a firm plan.

Senior Assistant Editor Mary Griswold Smith, one of the first new people brought aboard by Melville, was hired as a picture

Melville retained the boundless curiosity of boyhood well into old age.

editor in June 1956. She was 21 years old. "I had very little education, and my only qualifications were that Melville had been introduced to my father and I was crazy about photographs," Mrs. Smith says. "Melville hired me on the spot. He said, 'I'm going to be Editor and I need young people around me.' "

Earlier he had hired an erudite young Columbia University graduate, composer, and former U. S. Army bandleader named Merle Severy, and not long afterward told him to create a new division to publish National Geographic books. Howard Paine, who had been working in an advertising agency in Springfield, Massachusetts, was employed to help Severy with the layout and design of his books.

Ted Vosburgh, Melville's Associate Editor, describes Paine as "that art director with the incredibly fertile mind who helped Melville steal the acorns."

Paine, who says that Melville put him "in charge of white space," introduced the principles, possibly even the idea, of modern design to the GEOGRAPHIC, a process that included the gradual elimination, over a period of years, of acorns and oak leaves that framed the famous yellow border of the magazine.

(In 1959 Melville would change the very name of THE NATIONAL GEOGRAPHIC MAGAZINE, progressing slowly as with the acorns by first shortening it to THE NATIONAL GEOGRAPHIC, and then simply to NATIONAL GEOGRAPHIC.)

In the spring of 1954 Gilbert Grosvenor had visited the University of Missouri School of Journalism to accept an award for Distinguished Service in Journalism. It proved to be a fateful conjunction. There he met a talkative 24-year-old Navy veteran and Missouri senior, Wilbur E. ("Bill") Garrett. He, too, was crazy about photographs and possessed stores of enthusiasm, curiosity, and impulsiveness that may have reminded Grosvenor of his own son.

In a memorandum he instructed Melville to hire Garrett. When, 26 years later, Garrett became the seventh Editor of NATIONAL GEOGRAPHIC, Melville presented him with the memo.

Many guessed from the first that the hard-working, outspoken Garrett would end up in the Editor's chair. "Bill was insufferable in those days, but his talent was obvious to everyone," says Mary Smith. "We thought it was black magic." Howard Paine remembers going with Garrett to the Naval Observatory in Washington at 5 a.m. with the idea of photographing Sputnik, the Soviet satellite that was the first man-made object orbiting in space. "Sputnik went right through the bowl of the Big Dipper and Garrett went 'click' and made what may have been the first photograph of Sputnik in orbit," Paine says. "Bill always said that the secret of photography was, '*f*/8 and *be* there.' But the luck that guy has!"

At about the same time that Garrett arrived, La Gorce, who had also hired Melville, hired Gilbert Melville Grosvenor, just out of Yale University. He had been a premedical student with no particular thought of a career at the GEOGRAPHIC before being captivated by the camera during a summer vacation.

Gil Grosvenor, son of Melville and grandson of the original Gilbert Grosvenor, rose through the masthead like his father, but became Editor in 1970 at the much earlier age of 39, partly because Melville and Vosburgh chose to set examples of timely retirement.

THE YOUNGEST GROSVENOR proved to be the most activist of the line, leading the magazine into the forefront of debate over protection of the environment, approving coverage of political factors inherent in any story dealing with geography, and initiating the publication, in February 1981, of *A special report in the public interest—Energy* that influenced debate on the question. Clearly he understood the magazine's modern readership. During the ten years that he was Editor, membership rose from 6.8 million to 10.7 million.

As President since 1980 and Chairman of the Board of Trustees since 1987, Gil Grosvenor has founded three new magazines,

TRAVELER, WORLD, and NATIONAL GEOGRAPHIC RESEARCH, launched the Society's cable television activities, constructed a new building on the headquarters site, and greatly expanded the Society's educational programs.

To mark the Society's centennial, he announced formation of the National Geographic Society Education Foundation, endowed with a pledge of 40 million dollars in Society funds, to reestablish the teaching of geography in schools.

Within two years after taking control, Melville had hired the nucleus of the staff that would carry the magazine into the 21st century. In 1964 he moved them out of the dim and crowded precincts of the old headquarters into a light-filled modern building next door.

Foremost among the newcomers—many of whom were recommended by Garrett—was a critical mass of graduates of the University of Missouri School of Journalism, including Robert L. Breeden, now Senior Vice President in charge of Educational Services of the Society, and Associate Editor Thomas R. Smith. In 1959 Minnesotan Thomas J. Abercrombie, whose realistic photographic style marked a turning point in the way the magazine made and selected pictures, became the first of 12 GEOGRAPHIC photographers to be named Magazine Photographer of the Year. Garrett was the fourth, in 1969.

Most of the others were hired by James M. Godbold or Robert E. Gilka, who came to the magazine from midwestern newspapers in 1958. Melville made Godbold the first Director of Photography in 1959, thereby placing the work and well-being of photographers, a breed subject to uncommon stress, in the hands of a single strong executive. This was a momentous departure, and it was the key element in the creation by Godbold, and especially by Gilka, of a corps of photographers and a body of photography unique to the magazine.

Gilka, who succeeded Godbold in 1963, was on the job for 22 years, earning an unusual degree of affection and respect. His methods were much like Melville's. Says Assistant Vice President Carl M. Shrader, who served under Gilka as head of the photo lab, "Bob Gilka never told me what I could *not* do."

In writing, Melville wanted a more journalistic approach, one that would let the people in GEOGRAPHIC stories speak to members of the Society in their own voices. Precise, levelheaded Ted Vosburgh acted as a moderating force in this and other enterprises. In Garrett's words, "Ted was the man who held onto the tether of Melville's magnificent airship."

AT THE WHITE HOUSE IN 1953 PRESIDENT DWIGHT D. EISENHOWER, CENTER, RECEIVED NEW NATIONAL GEOGRAPHIC MAPS TO REPLACE THOSE HE USED IN WORLD WAR II. REPRESENTING THE SOCIETY FROM LEFT: THOMAS W. MCKNEW, SECRETARY; GILBERT H. GROSVENOR, PRESIDENT AND EDITOR; MELVILLE BELL GROSVENOR, SENIOR ASSISTANT EDITOR; AND JOHN OLIVER LA GORCE, VICE PRESIDENT. WILLARD CULVER

One after the other, Melville hired a stable of new writers who had been seasoned by experience in the world of commercial newsgathering, including Senior Assistant Editor William Graves, a son of Ralph Graves, and several members of the staff of an expiring Washington news magazine called *Town Journal*. These included Bowie, Conly, McDowell, Edward J. Linehan (later the Articles Editor), and a raucous ex-Marine from New Jersey named Howard LaFay, who looked liked one of the Medici, talked like a taxi driver, and wrote like an angel.

In 1965 Joseph Judge, then a civil servant looking for greener pastures but who had been with *Life* magazine and a Washington television station, was asked by Allan Fisher and James Cerruti, the tough-minded editor in charge of free-lance writers, to write a small piece on Monticello to see what he could do.

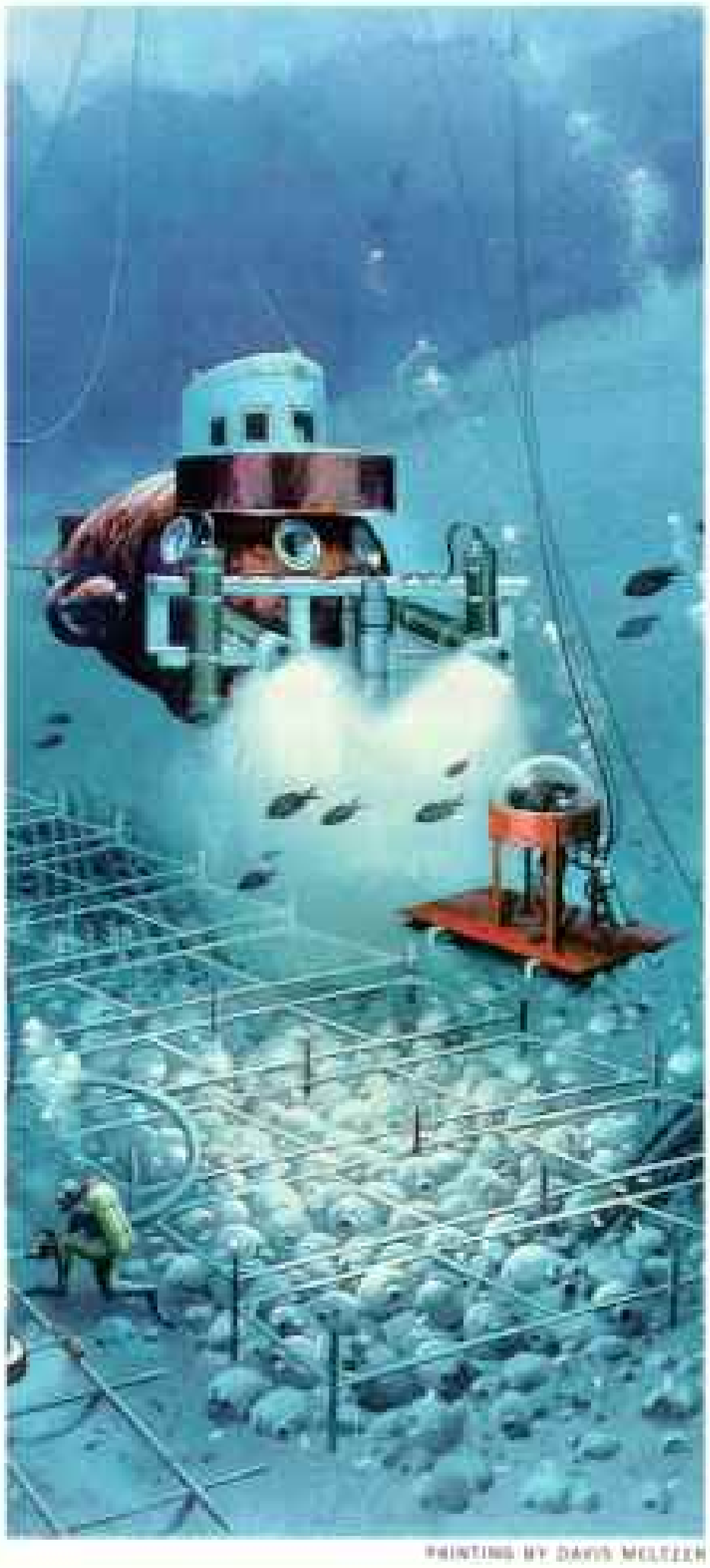
The magazine bought the article and offered Judge a job. His father had been a star first baseman for the old Washington Senators. "Joe," Melville said to him, "you're going to

John COCHRAN

1934

A new frontier of exploration opened when William Beebe descended more than 3,000 feet into the sea in his bathysphere (right). Through portholes he and partner Otis Barton viewed "a world almost as unknown as Mars and Venus," reported on in two memorable articles in 1931 and 1934.

DAVID KNUDSEN



PAINTING BY DAVID MEITZER

J. BAYLOR ROBERTS

According to Jacques-Yves Cousteau, co-inventor in 1943 of the Aqua-Lung, "The best way to observe fish is to become a fish." A dozen accounts of his expeditions, many undertaken with Society support, enlivened the pages of the magazine. In 1961 he was awarded the Society's Gold Medal by President John F. Kennedy; Society President and Editor Melville Bell Grosvenor looked on. Without the Aqua-Lung, underwater archaeological expeditions reported in the magazine would have been impossible. During a 1959 excavation of a Bronze Age ship in the Mediterranean, divers even raised amphorae by filling them with air from their tanks.

A pioneer in applying standard archaeological techniques underwater, George F. Bass used metal grids to precisely locate artifacts while excavating several ancient wrecks. A painting from his 1968 article, "New Tools for Undersea Archeology," depicted such innovations as a small submersible and an underwater telephone booth.

be as good for this magazine as your father was for the Senators. I used to sneak out of work to watch him play. I think my aunt 'died' ten times the year they won the pennant!"

Judge became one of the aces of the staff and, upon the premature death of Franc Shor, followed La Gorce, Vosburgh, and Scofield into the second highest post on the magazine.

"Melville transformed the Geographic from a Victorian to a 20th-century organization," says Tom Smith. Like most others of his generation who worked with Melville, Smith remembers the experience as the happiest and most fulfilling of his life. "He was like a father to us—a wonderfully unorthodox father, and that was very stimulating to young people," Smith says. "When you'd done something he liked, he'd put that big paw of a hand on your shoulder, and with a huge smile he'd let you know that he liked you and liked your work. You treasured those moments."

Assistant Editor Peter White remembers returning from Laos to find that deep changes had been made in one of his stories. He stormed into the Editor's office. White was so upset over the violence that had been done to his prose that he actually shouted at Melville.

"Peter, you're not well!" Melville cried in shocked tones. "You have worms. Somebody else came back from a trip and talked to me like this, and *he* had worms." After calling Garrett into the room to calm White, who by now was misty-eyed with loyal affection, Melville picked up the telephone and dialed a number. "I'm going to send you over to my own doctor right this minute!" he said.

Severy and Paine took the dummy of a 436-page book about ships to the Editor's home on a Saturday morning, expecting to spend about an hour going over the material. "We stayed for lunch, dinner, and many mint juleps—somebody had sent Melville 23 kinds of mint," Paine recalls. "When he saw what the dummy was, 'Wow! The ship book! I've been waiting for it!' So we crawled around on the floor of Melville's study until ten that night, changing the layout around. Time flew."

Predictably, this sort of management released creativity. The whole aspect of the magazine changed; the staff felt itself involved as members of a family. It was impossible to lose interest because the head of the family insisted on living in an atmosphere of new ideas and boundless optimism.

Old constrictions fell away. Gone were the acorns, the rigid rules about the size of pictures and the way in which pictures might be trimmed, cropped, and laid out on the page.

Photographers, exposing thousands of frames of Kodachrome in order to capture the one instant in the life of an image that would speak directly to the reader, achieved pictures the like of which had never before been seen. Writers roamed the world as freely as photographers in search of equally telling words. The magazine was, as it had been in Gilbert Grosvenor's heyday, wholly at ease with its times. By the time Melville Grosvenor retired as President and Editor in 1967, membership had more than doubled, to 5.6 million.

Melville Bell Grosvenor was Editor of NATIONAL GEOGRAPHIC for only ten years. In that time he built the new headquarters building in downtown Washington and an even larger building in Gaithersburg, Maryland, to house membership services, started Book Service, instituted National Geographic Television Specials, issued the first Geographic atlases and the first globes, modernized the printing of the magazine, opened Explorers Hall, greatly expanded the research activities of the Society, and left many other monuments to his time at the head of the Society's affairs.

IN A SENSE, because the young people he chose and inspired more than 30 years ago are now producing the magazine he re-created, Melville is still the spiritual Editor of NATIONAL GEOGRAPHIC, just as Alexander Graham Bell remains its inventor and Gilbert Hovey Grosvenor its architect.

Their GEOGRAPHIC was born out of change, and it has continually reinvented itself in order to keep up with the changing world that is its inexhaustible subject matter.* Yet at the end of its first century the magazine remains unmistakably its original self, constant to the principles of accuracy, fairness, optimism, and experimentation on which it was founded.

It is, in short, a monument to the three singular men who made it—and to their truly revolutionary idea that this journal belongs to the millions who read it, not as mere subscribers, but as members of an unending expedition to explore the earth and everything that exists upon it and beyond it. □

*The Society's story is also told in a TV Special, "The Explorers: A Century of Discovery," to be shown on PBS October 12 and available soon in videocassettes in retail stores.

"The Greatest Job in the World?"

By JOSEPH JUDGE SENIOR ASSOCIATE EDITOR

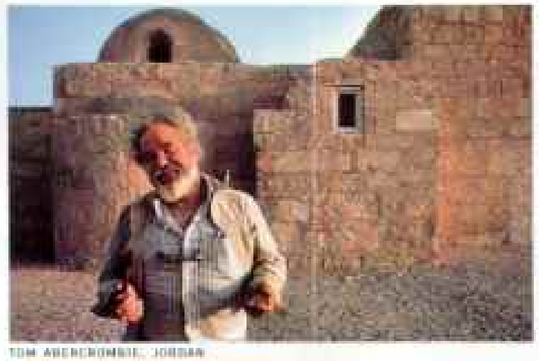
LUIS MARDEN (LEFT) AND MELVILLE BELL GROSVENOR AT THE 1967 CORONATION OF KING TAUFA'AHAU TUPOU IV OF TONGA (CENTER), WHERE THESE TWO OLD FRIENDS ENJOYED AN ASSIGNMENT FIT FOR A KING.

NO ONE COMPLETES an assignment; you survive it . . . you're only as good as your next assignment . . . sure, it's romance—far-away places, time to cover them, lots of space to show them and write about them. Ha! They are all true, these stories of hidden temples and perilous landings and exploding mountains and deep-sunk wrecks glinting with gold and untouched tombs and unvisited tribes . . . angry people killing and lovely people persevering, great officials and small beggars, the oppressed and outraged, the smart and the curious, the hostile and the friendly, the honest and the devious, the thousands of pilgrims one meets out there . . . it's a life of what's next; that's why you're up before dawn . . . islands ahead under cobalt skies, rapids ahead down a raging brown river, oasis ahead on a gibber desert, pack ice ahead, hey—that's a mountain ahead! You should have been here yesterday . . . the axle's busted . . . you can't get there from here . . . the plane's full . . . the minister says you can't go there . . . I know you've waited two weeks but it's August . . . the choppers never came; we had to walk out . . . your interpreter has chicken pox . . . sorry, the number in the U. S. still doesn't answer . . . I remember when they liked Americans . . . this time, I hope to God I get really sick right away and get it over with . . . he stepped out of the cab and vanished; some clown had removed a manhole cover . . . I left the wreck in the Avis lot in Sydney and got on the plane for Hawaii . . . how could I know you get trichinosis from bear meat? . . . they told me at the hospital that typhoid shots are only 50 percent effective . . . it's either malaria again or the flu . . . I told you two things—don't drink the water and don't eat the fish . . . puking in white tie; you're a disgrace to Cary Grant . . . it's either the flu again or malaria . . . the yellow stuff burns, the rest is just tear gas . . . both legs and one arm were busted but he was able to paddle himself to the shore and by some miracle a road crew was there and they called in the medevac . . . I look up and my wife is standing there; how she got there I never asked her . . . it's when two months gets to be three and four . . . I doubt that the percentage of ruined relationships is higher than anywhere else, but the heartbreak may be worse because the life-style is so one-sided . . . we've been happily married for years and we both know why—I'm never home . . . people who are lonely and exhausted sometimes get into trouble, but people who stay home get into trouble, too . . . the toughest thing is having to inherit a new person every time . . . the Spanish say: "Take what you want and pay for it, says God." . . . gear: cameras, lenses, tape recorder, tapes, music tapes, peanut butter, batteries, flashlights, gaffer tape, army knives, lap computer, modem, diskettes, thermal printer, paper, cup warmer, radio, binoculars, sunglasses, eyeglasses, Sierra cup, books, maps, boots, soft bag, Hallibur-tons, keys!, the Ticket? the ticket! Thank God, it's in my pocket, passport . . . Inspector, I always carry this, the rest comes air freight . . . my partner was running along the roof and the crowd observing him was yelling "Kill the photographer!" Then they looked at me, and I started yelling—"Kill the photographer!" . . . are you getting it right? That's the ever present anxiety, getting it right . . . how did it go? I survived. My head is getting to be older than my legs . . . I was happy when I got the assignment, and I was *really* happy the day I got home.

Tradition is palpable at the magazine, part of it fictionalized by the passage of time and habits of memory, but much genuine.

Writers and photographers do find themselves in strange places: Trekking the Guatemalan jungle, baking under hot sand in Japan, diving in a submersible off the Virgin Islands, exploring a French cave, standing behind bars at Alcatraz, lunching with a deer in Montana, tasting pollen in Arizona,

STEVE RAYMER, BURMA



TOM ABERCROMBIE, JORDAN

GEORGE MOBLEY, TAHITI

SAM MATTHEWS, VIRGIN ISLANDS

BILL ELLIS (FRONT), JAPAN

TED VOSBURGH (FRONT), TAIWAN

CAROLE DEVILLERS, HAITI

SISSE BRIMBERG, FRANCE

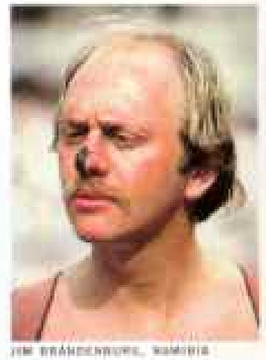
DEAN CONGER WITH ALAN SHEPARD, JR.

DAVE HARVEY, CHILE

LOREN MCINTYRE, ECUADOR

LOU MAZZATENTA & RICK GORE, ITALY

GIL GROSVENOR WITH STEVE BLASCO AND JOE MacINNIS, NORTH POLE



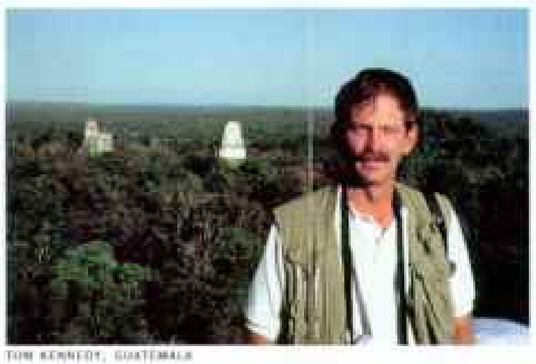
JIM BRANDENBURG, NAMIBIA

finding a phone in west Texas.

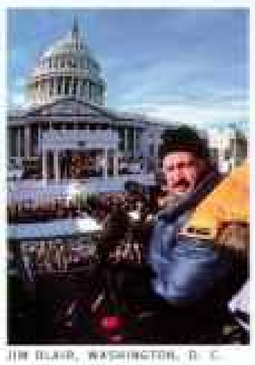
The magazine's Editors have spent their time in the field. Ted Vosburgh (1967-70) rode the rails in Taiwan. Gil Grosvenor (1970-80) took Peary's guidon when he dived through ice near the North Pole. Bill Garrett (1980-) has long made Southeast Asia one of his beats as a journalist.

One is apt to meet almost anybody—an Ecuadorian Indian, a Japanese mountain climber, a recluse in Tahiti, Haitian

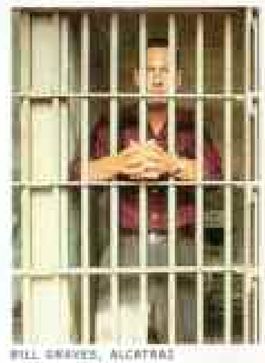
BATES LITTLEHALES, MONTANA



TOM KENNEDY, GUATEMALA



JIM BLAIR, WASHINGTON, D. C.



BILL GRAVES, ALCATRAZ

JOHN PUTMAN, SWISS ALPS

JODY COBB, SAUDI ARABIA

BRUCE DALE, TEXAS

BILL CURTSINGER, MASSACHUSETTS

CATHY NEWMAN WITH FRED STEVENS, JR., ARIZONA

TOM CARNEY WITH COSMONAUT SZHARIBEKOV, U.S.S.R.

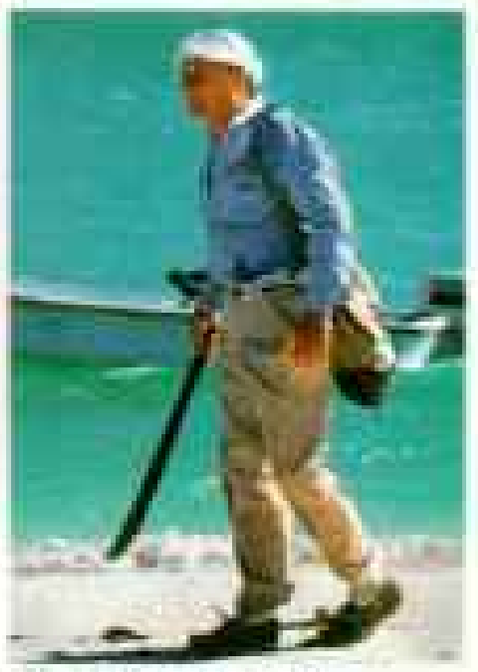
BART MCDOWELL, INDIAN OCEAN

soldiers, a Soviet cosmonaut or American astronaut, Saudi women, the Pope, a Beirut Arab, a beetle.

Assignment might mean a drive to the Capitol on Inauguration Day. Or long flights and crowded

TOM SMITH WITH ROBERT CAVE-ROGERS, CHINA

BILL GARRETT, VIETNAM



JOE RUDDE, SAMANA CAY

airports en route to Burma, Chile, or Jordan. It takes a boat to get to Samana Cay on the track of Christopher Columbus.

Appropriate dress could be military gear for a flight over the Indian Ocean or a parka for a hike in the Swiss Alps; a comfortable pair of walking shoes for the Great Wall or hiking boots for a climb on Vesuvius; goggles and scarf for a drive in the Sahara or a T-shirt in laid-back Seattle; and, of course, wet suits for the underwater world of turtles and fishes.

As one staff member once put it: "I've learned something almost every day, whether I wanted to or not." And our job, in the end, is to tell our members what it is we've learned. □

PETER WHITE, WESTERN SAHARA

STEVE MCCURRY, BEIRUT

CHARLES MCCARRY WITH MASAYUKI ITONAGA, JAPAN ALPS

BOB MADDEN, SEATTLE

BOB & IAN GILRA AND JIM & BARBARA STANFIELD, AT ST. PETER'S

DAVID DOUBILET, RED SEA

THE ART OF PHOTOGRAPHY AT NATIONAL GEOGRAPHIC

LEHNERT & LANDROCK, CIRCA 1905
Algerian girl of the desert wears a dowry of coins.

Odyssey

To celebrate the Society's centennial, the Corcoran Gallery of Art has produced an exhibition of some 260 photographs selected from a century of magazines and from our archives. A representative sample is presented in the following pages. Twin versions of the exhibition will soon be touring North America, Europe, and Asia.

CARY WOLINSKY

INDIA, 1983
A silk dyer's wife presents herself in purdah in her home.

By JANE LIVINGSTON
ASSOCIATE DIRECTOR AND CHIEF CURATOR, THE CORCORAN GALLERY OF ART

HERE WE ARE VIEWING NATIONAL GEOGRAPHIC photography in a special way: holding it up by itself, full-frame, out of context, and away from words. This is the kind of test that curators and art historians are giving many forms of photography in the 1980s. The discovery of the National Geographic's rich contributions should not be surprising. What is remarkable is that an entire episode within the history of photography remained for so long sealed off from the fine-art photographic establishment.

Yet a distinction survives between the ethos of the National Geographic photographer and that of the art world, and also that of the journalistic world. This distancing is subtle and complex. It originates partly in a long-standing editorial policy of National Geographic: namely, thinking of its pictorial staff not as "photo editors" but as "illustrations editors." Thus there is a sense in which the many photographers whose work we see here, at least in the minds of their editors, and perhaps in their own minds, were artisans and not artists.

This is not to imply that what has been produced under the aegis of the National Geographic Society is something other than art or less than superlative photography. Indeed, both the early and recent histories of photography at the Society can be viewed as a prolonged, quiet unfolding of genius.

The particular view of photography at National Geographic offered by our exhibition was obtained first through study of the Society's formidable archives and second through its publications. More than half of these pictures have never before been published.

Photography was by no means always integral to the magazine. NATIONAL GEOGRAPHIC existed for more than a decade before photographs began to dominate its pages. Although often skeptical or actively resistant, the Geographic's Board of Managers allowed a few photographs to appear as illustrations after 1895 (along with halftone reproductions of gravure prints or paintings).

A true commitment on the part of the Society's early Editor and President, Gilbert Hovey Grosvenor, himself a dedicated photographer, to accompany articles with photographs was not made until 1905. At first, men who were primarily scientists, explorers, or inventors, such as Hiram Bingham, Joseph F. Rock, Herbert G. Ponting, or Alexander Graham Bell, contributed their own photographs. Early in this century, a large number of photographs came to the Society from the inventories of internationally based photo agencies or individual studios. There were no full-time staff photographers. It was then the Society's principle to maintain a stockpile of photographs from various regions, ready for use in future stories with short deadlines—for instance, early works by independent, international photographers like Roland W. Reed, Vittorio Sella, Hugo

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This article is adapted from *Odyssey: The Art of Photography at National Geographic*, published last May by Thomasson-Grant, Charlottesville, Virginia. A hard-cover edition is available in bookstores or by calling the publisher at 1-800-999-1780.

ELIZA R. SCIDMORE

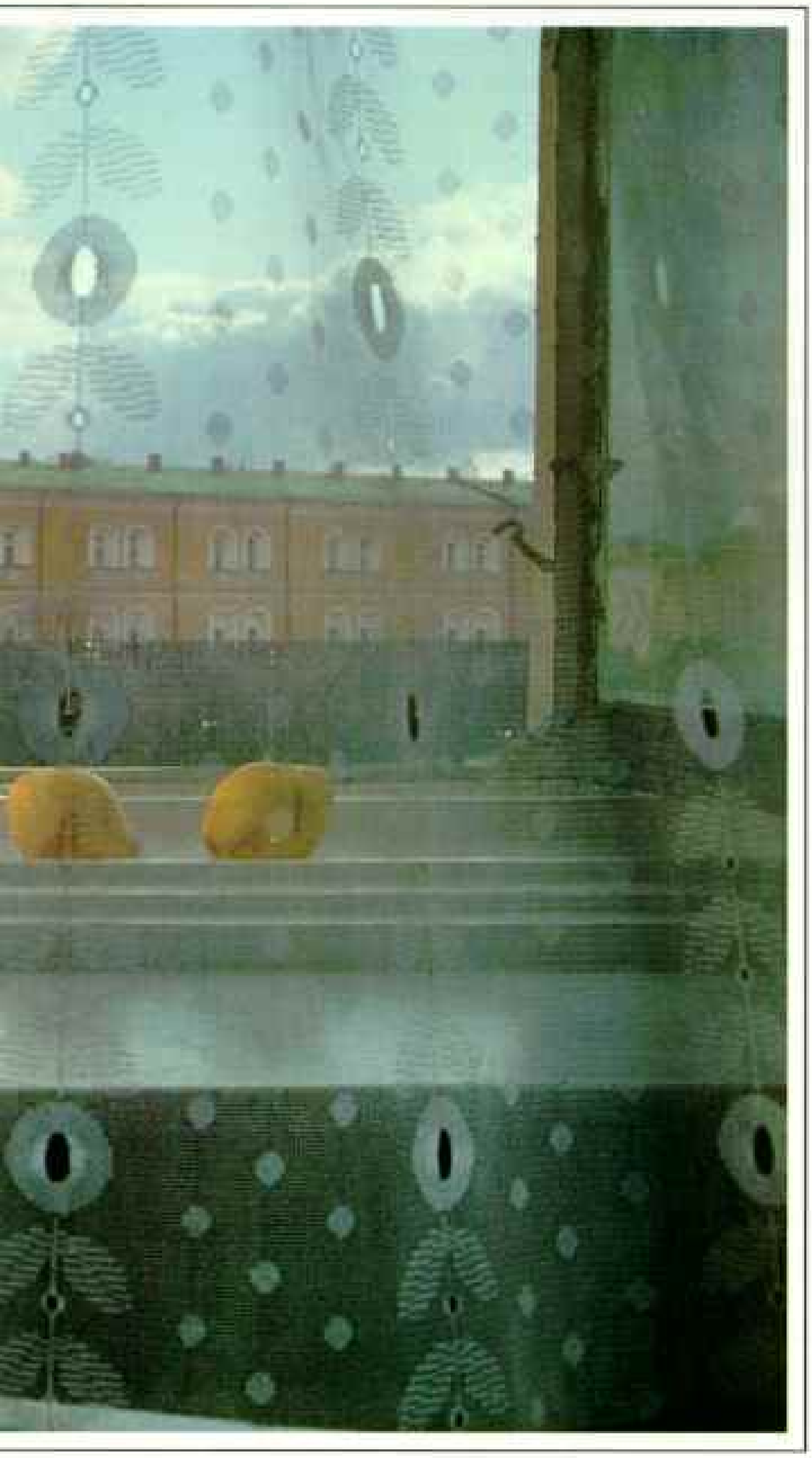
JAPAN, CIRCA 1910

The first woman on the Society's Board of Managers, Scidmore hand colored her prints, such as this one entitled "The Prize Chrysanthemums."

SAM ABELL

Moscow, 1983

Lace curtains and ripening pears in a hotel overlooking the Kremlin evoke the 19th-century Russia of Tolstoy's novels.



Brehme, Baron Wilhelm von Gloeden, the team Lehnert & Landrock. A few portfolios or miscellaneous collections were acquired by the Society, some published, some not. The entire set of Edward Curtis's published Indian photographs (several included in the July 1907 NATIONAL GEOGRAPHIC) and many beautifully preserved leaves from Jack Hillers's Western Survey albums, done under the auspices of the William Henry Jackson studio, were added to the Society's files.

The vast archive of early material includes photographs of every size and description: dry-mounted prints made casually or carefully, in every conceivable tonality, format, and process; photogravures, gum prints, platinum prints, and carbon prints, as well as albumen prints and other manifestations of the silver print. The sensation of discovering some of these early images surpasses the typical response to recent color work. Something about the arduous pioneering, the inventive brinkmanship of early black-and-white photography imparts to the best prints an ineffable mystique.

BEFORE THE SOCIETY AMASSED THIS ARCHIVE, however, several developments changed the magazine's early emphasis on acquiring or even commissioning photographs. A home developing and processing laboratory was established at Society headquarters in 1910, and in the following decade full-time staff photographers were first hired.

Between 1900 and 1920 the Society gave black-and-white photography significant exposure worldwide as a popular illustrational medium. The halftone plate, starting in the late 1800s, enabled photographs to be printed along with type, and so it competed successfully with earlier methods of mass photographic printing such as woodburytype, photogravure, and photolithography.

The saga of color photography at the National Geographic Society is fascinating. The sheer length of time it took for the novelty of the colored image to wear off seems now incomprehensible. Even with the Geographic's first publication in halftone of a color image in 1914, it was not until some indefinable moment in the 1950s or '60s that the public would readily *see* a color photograph for its subject or content, rather than for its "coloredness." Creating the economical, visually accurate color process we now take for granted obsessed two generations of publishers and photographers.

The very first attempts at color images involved applying dyes and pigments by hand to black-and-white prints. In the November 1910 issue of NATIONAL GEOGRAPHIC the first hand-colored photographs, "Scenes in Korea and China" by William W. Chapin, appeared and caused a sensation. Several beautiful, and some rather amusing, hand-tinted prints are included in the "Odyssey" exhibition. Although many hand-colored photographs were reproduced in the magazine, few were successful in terms of "naturalism" and aesthetic appeal.

Yet the exceptions are striking. Eliza Scidmore was an early board member of the Society who traveled widely and wrote many articles for the magazine.

GERVAIS COURTELLEMONT

FRANCE, CIRCA 1925

The GEOGRAPHIC published 24 Autochrome essays by Courtellemont from 1924 through 1932. Their soft, grainy texture gives Autochromes an impressionistic quality.

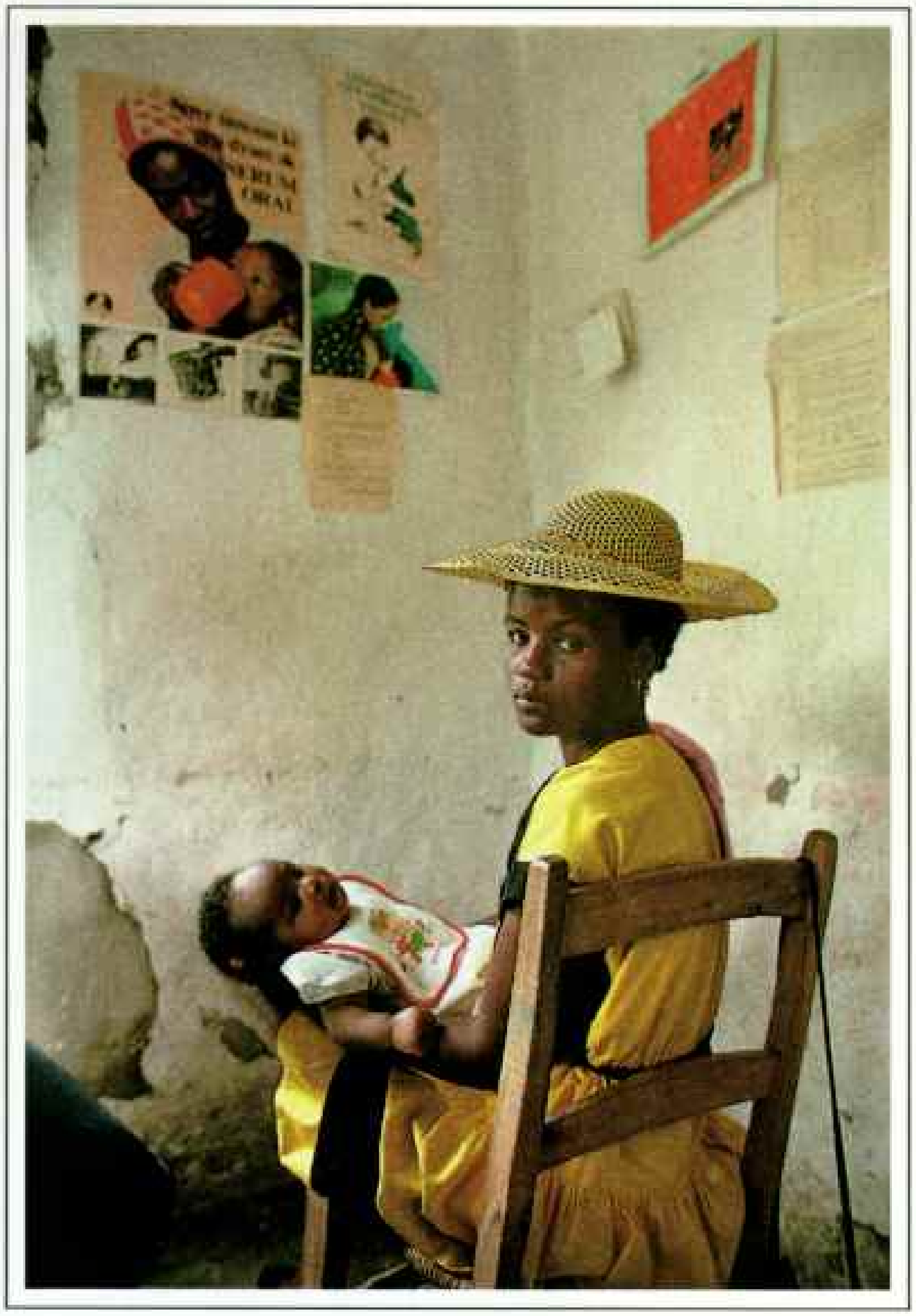
She is known as a photographer only through the pictures she took to illustrate her reports, photographs that she herself tinted by hand. Her painted snapshots of Japanese children, whether in the original or in reproduction, give us a new appreciation of this episode in the development of photography.

What truly heralded the age of color photography in the mass market—a story played out with more authority and persistence by the National Geographic Society than by any other institution—was the advent of the Autochrome. The Autochrome process, using a potato-starch filter deployed on a glass plate, was invented by the brothers Auguste and Louis Lumière of Lyon, France. It was demonstrated in 1907 at the Little Galleries in New York City. There for the first time the public saw the bulky oddities that are Autochrome plates: objects at least one-eighth inch thick, usually taped at the edge. Their character differs radically from today's compact plastic-and-paper slides.

HANS HILDENBRAND

AUSTRIA, 1929

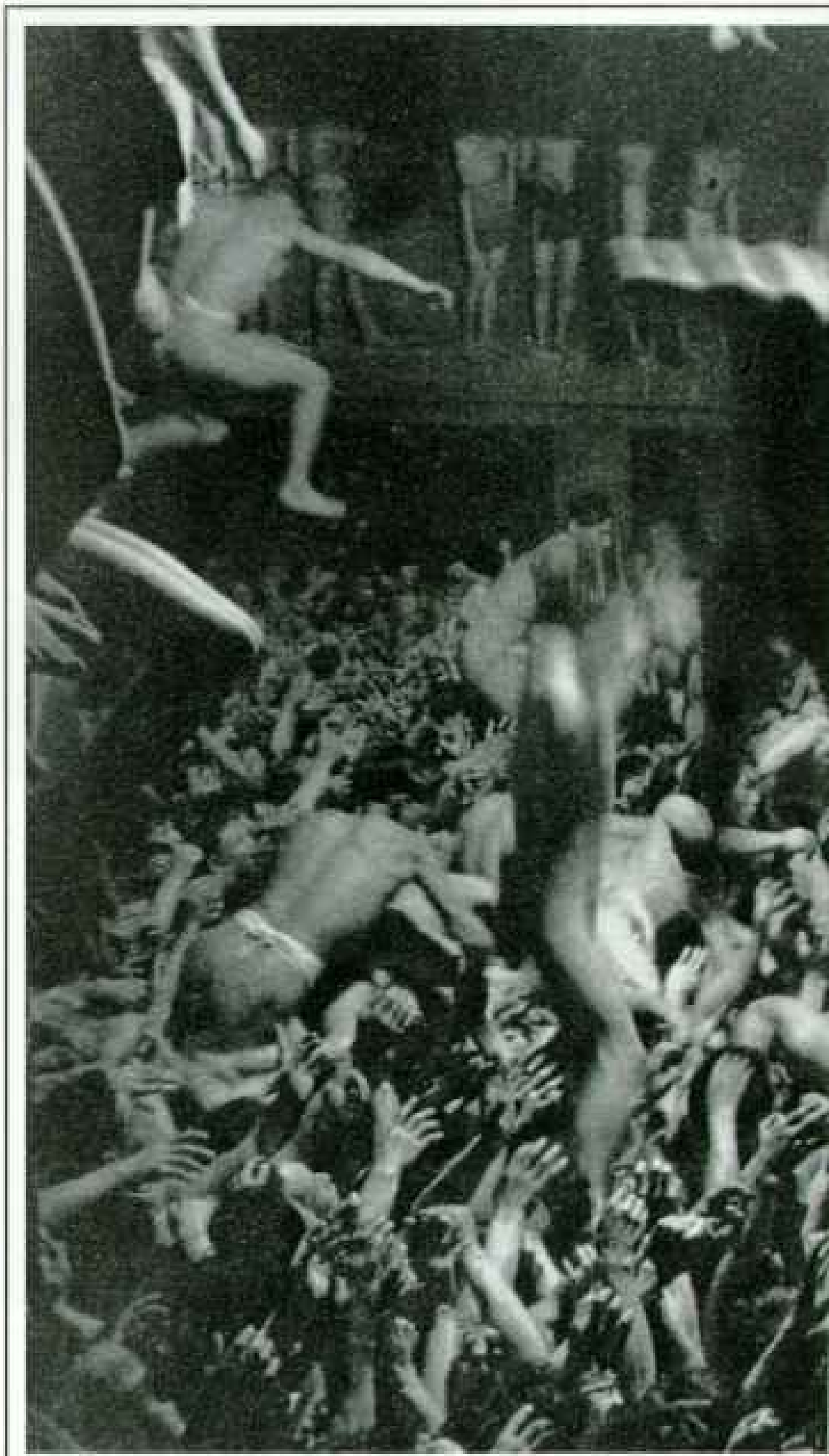
This portrait is from a series Hildenbrand made in Alpine villages. The Geographic has preserved almost 800 of his Autochromes.



JAMES P. BLAIR

HAITI, 1987

A mother worries for her baby at a rural clinic in the Western Hemisphere's poorest nation.



HORACE BRISTOL

JAPAN, 1946

In the darkness of a temple at Saidaiji, the photographer's flashbulb illuminates young men struggling for a pair of sacred batons during a Lunar New Year ceremony.

JAMES L. STANFIELD

BULGARIA, 1978

A peasant woman grieves for her youngest son, who was murdered shortly after he left their village to make his mark in the capital.

The first Autochrome published in the GEOGRAPHIC appeared in July 1914 and was by Paul Guillumette. In 1920 the Society established the first color laboratory in American publishing, and the starch-filter, glass-plate method continued to be the standard for a decade. Between 1920 and 1930 the magazine published about 1,700 Autochromes.

Autochrome plates by nature are oddly puritanical, stubbornly untheatrical objects, even after transformation into printed images. Yet, when illuminated, these musty plates begin to seduce, if only by their tempered palette or quietude. The strange combination of a physically transparent surface with an often subdued, limited color range makes the outmoded Autochrome now appear to be a full-fledged aesthetic medium.

Compared with contemporary work, the quality of color in a successful Autochrome plate often takes on an otherworldly cast, a characteristic probably

FARRELL GREHAN

NIGERIA, 1973

In what the photographer described as a "continuous sad ritual," one of many youths weakened by starvation during a drought seeks help too late at a Red Cross camp.

most apparent to us in hindsight. Now, with their palette limited by decades of fading, some Autochromes recall early hand-colored photographs. A few well-preserved specimens, however, assume an amazing chromatic richness, as if patinated. This is most obvious when the primary hue is in the gold-and-red spectrum.

The masters of the Autochrome medium in the Society's purview are generally photographers who shared a patent interest in plain, descriptive composition, seldom yielding to self-conscious artfulness. Such photographers as Charles Martin, Jacob Gayer, Gervais Courtellemont, Franklin Price Knott, and Edwin L. Wisherd learned their craft the hard way. The photographer using Autochrome equipment carried into the field "steamer trunks full of chemicals and a suitcase full of books to read on the voyage," as one scholar has noted. A supply of colorplates alone weighed as much as 150 pounds. The exhausting

WILBUR E. GARRETT

CANADA, 1969

A lonely highway stretching between Saskatchewan and Alberta defines the flatness of the Prairie Provinces.

inconvenience sometimes shows in the result, but some of the Autochrome pictures seem effortless. We can see that many of them provide virtually every quality we ask for in a great photograph. This is a fact little emphasized until now. The tangibly real and the apparently imagined fuse poignantly in successful Autochromes.

THE EARLY DECADES of the 20th century saw the invention of a number of new photographic processes to replace the awkward Autochrome. Photographers experimented with different light-sensitive coatings and color-filter arrangements to break up the spectral components of light onto glass plates or film in order to photographically reproduce the colors of nature. Finlay, Dufay, Agfa, and Paget color each had its day in the sun with the Geographic staff. Though slow and unwieldy, each represented a step in the search for truly natural photographic color.

The technology for making color photographic prints also continued to change—and decisively with the advent of Kodachrome film. This invention solved four practical problems at once: It could be used in much smaller, more portable camera equipment; its exposure time was faster; its translation from film to print resulted in a more accurate chromatic appearance; and prints could be enlarged without losing definition.

The story of Kodachrome is fast becoming legend. Two musicians in Rochester, New York—Leopold Godowsky, Jr., and Leopold Mannes—made an obsessive avocation of developing a subtractive color-film process. Using an Eastman Kodak Company laboratory, they perfected a film that incorporated three superimposed black-and-white emulsions, each sensitive to one color—blue, green, or red. Through intricate processing the developed black-and-white image in each layer was selectively replaced by the corresponding dye image—yellow, magenta, or cyan. The Kodachrome process solved the problems of graininess and dot patterns in color photography.

By the 1940s and '50s Kodachrome film and the lightweight Leica camera had brought new opportunities for nature photography. The ability to capture animals moving in their natural habitats, to say nothing of geologic or meteorologic cataclysms, has had momentous consequences for photography. NATIONAL GEOGRAPHIC chose to use color, more color, and finally all color, at a time when other publications shied away from it. This unswerving editorial commitment had profound aesthetic results.

Printing exciting color photographs, as much as making them, became the challenge. What appears to be the distorted gaudiness in the color film, far from being counteracted in the reproduction stages, was often exaggerated. The so-called red-shirt school of editorial bias in color photography at National Geographic—encouraging a photographer to introduce a red, purple, or orange element into a dull landscape by draping a sweater over a rock or placing a model in front of a tree—testifies to the use of color for color's sake.

EDWIN L. WISHERD

WASHINGTON, D. C., 1929

One of the Geographic's first staff photographers, "Bud" Wisherd captured in this Autochrome what was then a sleepy southern city.

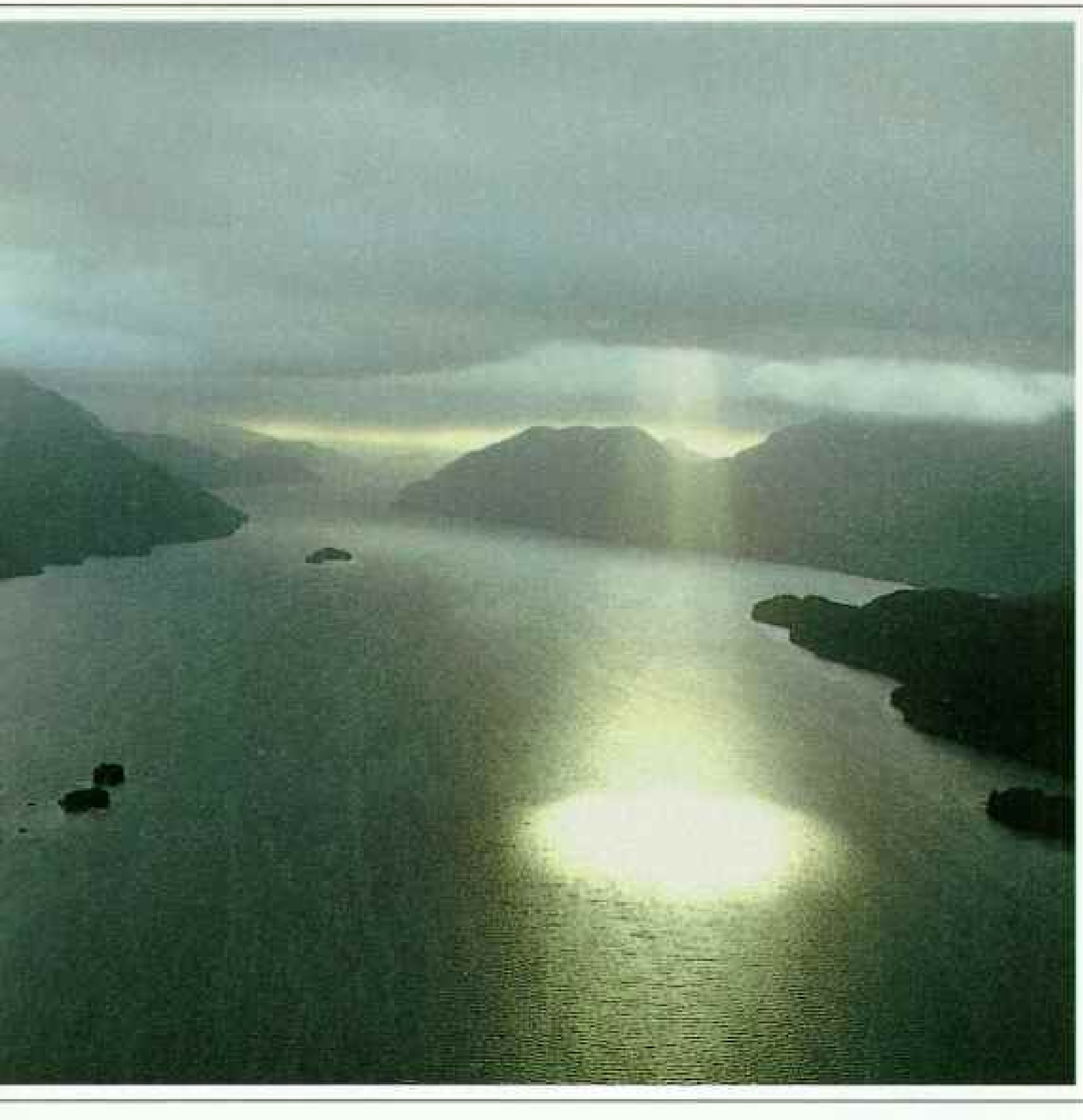
From the years between 1940 and 1960 we selected fewer than 30 images for our exhibition. The 1980s alone are represented by 75 photographs; from 1900-1919 come 70. Many color reproductions from the Geographic's long "early modern" era seem artificially heightened, while chromatically uneven and overly self-conscious; it is often as though the image, at least in its printed form, was composed in the spirit of a design lesson.

A number of masterful Geographic photographers have been unappreciated beyond the organization's confines. Their work is as stylistically developed as that of any internationally known photographer. Some are estimable artists by any standard. In most cases, however, because either they were fully employed by the Geographic or they worked only secondarily or briefly as photographers, they were never published elsewhere. Certainly they were not in the practice of exhibiting their work, as were their contemporaries in New York and on the

SAM ABELL

JAPAN, 1980

Framed by a window, a tree in a courtyard in Hagi shimmers against a backdrop of roof tiles.



GORDON W. GAHAN

NEW ZEALAND, 1970

A single shaft of sunlight breaks through the clouds at Dusky Sound near the southwestern tip of the South Island.

MITSUAKI IWAGO

TANZANIA, 1985

In the powerful grip of a lion, a terrified wildebeest drops to its knees on the parched savanna of Serengeti National Park.

West Coast. Simply to have been identified with an institution in Washington, D. C., seems to have isolated them from the world of art photography.

ONE OF THE FIRST STAFF PHOTOGRAPHERS and a longtime laboratory chief at National Geographic was Charles Martin, a man whose interests ranged widely. He helped make the first successful undersea color photographs in 1927. During the era of the Autochrome, Franklin Fisher was illustrations chief. He formed a permanent staff of Washington-based photographers and also commissioned foreign masters of the Autochrome: Luigi Pellerano of Italy, Hans Hildenbrand and Wilhelm Tobien of Germany, Gustav Heurlin of Sweden, and perhaps the most extraordinary artist of them all, Gervais Courtellemont of France.

Edwin L. Wisherd, a prolific contributor to the magazine and head of the laboratory, took his place as a special figure among this generation of National Geographic photographers. Two early photographers working in distinctly individual yet subtly influential styles are Maynard Owen Williams (role model for many younger people) and W. Robert Moore. Both were writers as well as photographers. Also active in this period was the prodigious and inexplicably obscure Clifton Adams, an artist whose black-and-white work ranks him high.

From the 1930s well into the 1960s, three versatile figures, all staff photographers and men of taste, energy, and dedication, created a legacy that reverberates to this day. B. Anthony Stewart, who joined the staff in 1927 and became the Society's most published photographer, worked masterfully in black and white and color alike. Volkmar Wentzel, scholarly, attuned to the image in a painterly sense, and as perceptive of others' talent as any editor, brought a dimension of refinement and literary discipline to National Geographic photography. His contemporary Luis Marden may well stand as the exemplar of the protean photographer we associate with National Geographic at its best. Marden's amazing reach, his studied expertise in the medium, combined with a breadth of intuitive vision, place him among the greatest of all field photographers. Others who worked in the 1940s and '50s, and whose contributions emerge insistently, were the gifted artist Justin Locke and the pioneering technician Willard Culver, an early photographer of industrial America.

From 1958 to 1960 profound changes took place. The magazine abandoned black-and-white photography with a radical shift to huge, new web presses. It also seemed to ignore the mainstream "advanced photojournalism" of the time. The history of photography in American magazines in the 1940s and '50s, primarily in *Life*, *Look*, *Fortune*, and NATIONAL GEOGRAPHIC, is a story in itself that touches many aesthetic concerns. Of course *Life* and NATIONAL GEOGRAPHIC were very distinct publications, one a weekly news and human-interest magazine, the other a monthly world-geographic specialty magazine. But the photographically relevant differences between *Life* and the GEOGRAPHIC start with their respective physical qualities. Most important was *Life*'s use of a large

STEVE MCCURRY

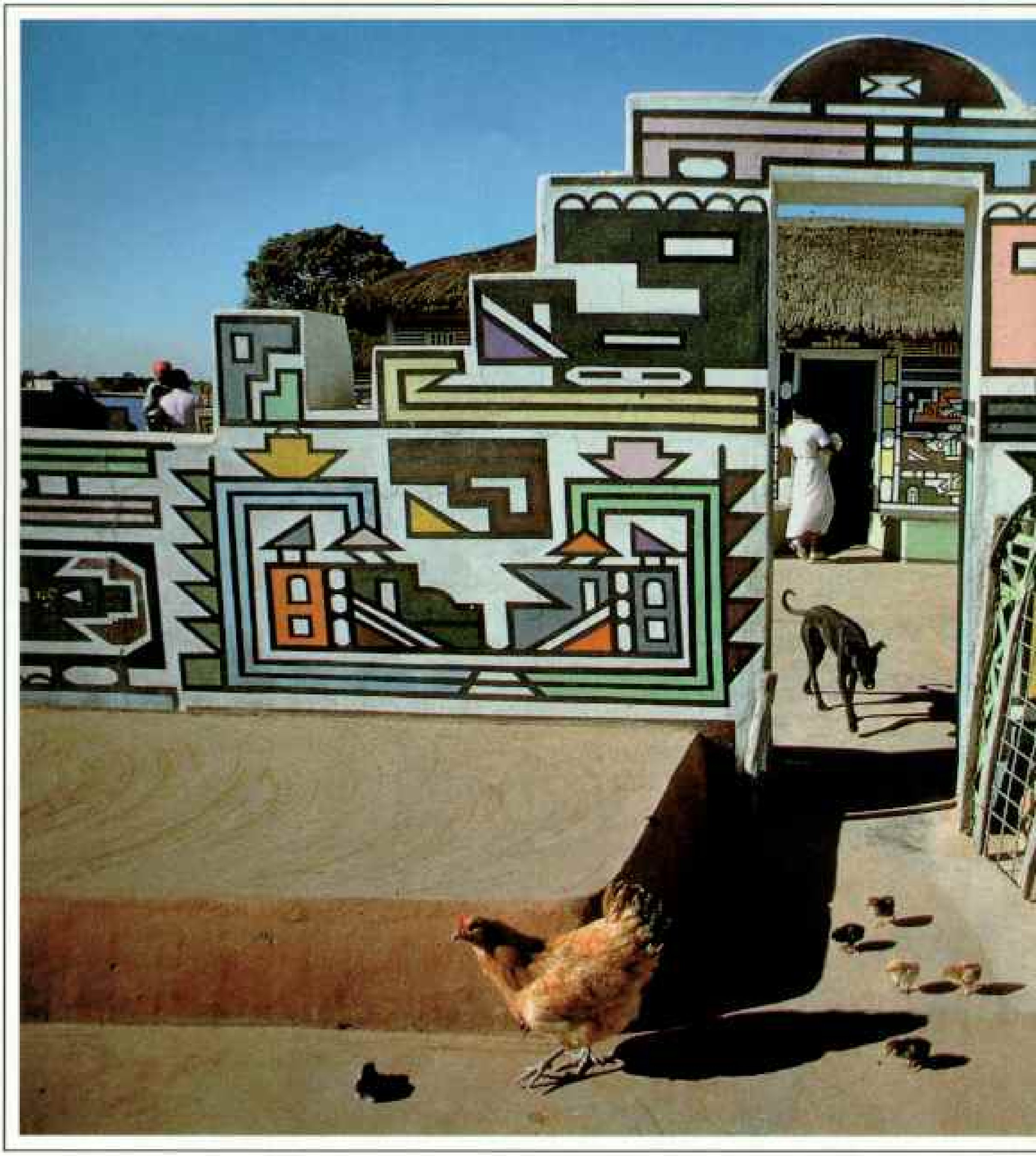
NEPAL, 1983

Immersing themselves in the Bagmati River in Kathmandu, women take part in a ceremony to honor Parvati, wife of the Hindu god Siva.

format as a showcase for photography. *Life*'s production techniques thus required relatively large-format presses; it used thin paper with mostly black-and-white printing and met short deadlines. NATIONAL GEOGRAPHIC used clay-coated paper, printed in small format, employed old-fashioned engraving techniques, and often allowed more lengthy scheduling.

In its latter days *Life* began, often under pressure, to treat its most successful photographers as artist-stars. In stark contrast National Geographic Society photographers until the late 1970s continued to view their photographs as illustrations, not as self-contained essays like the *Life* picture stories.

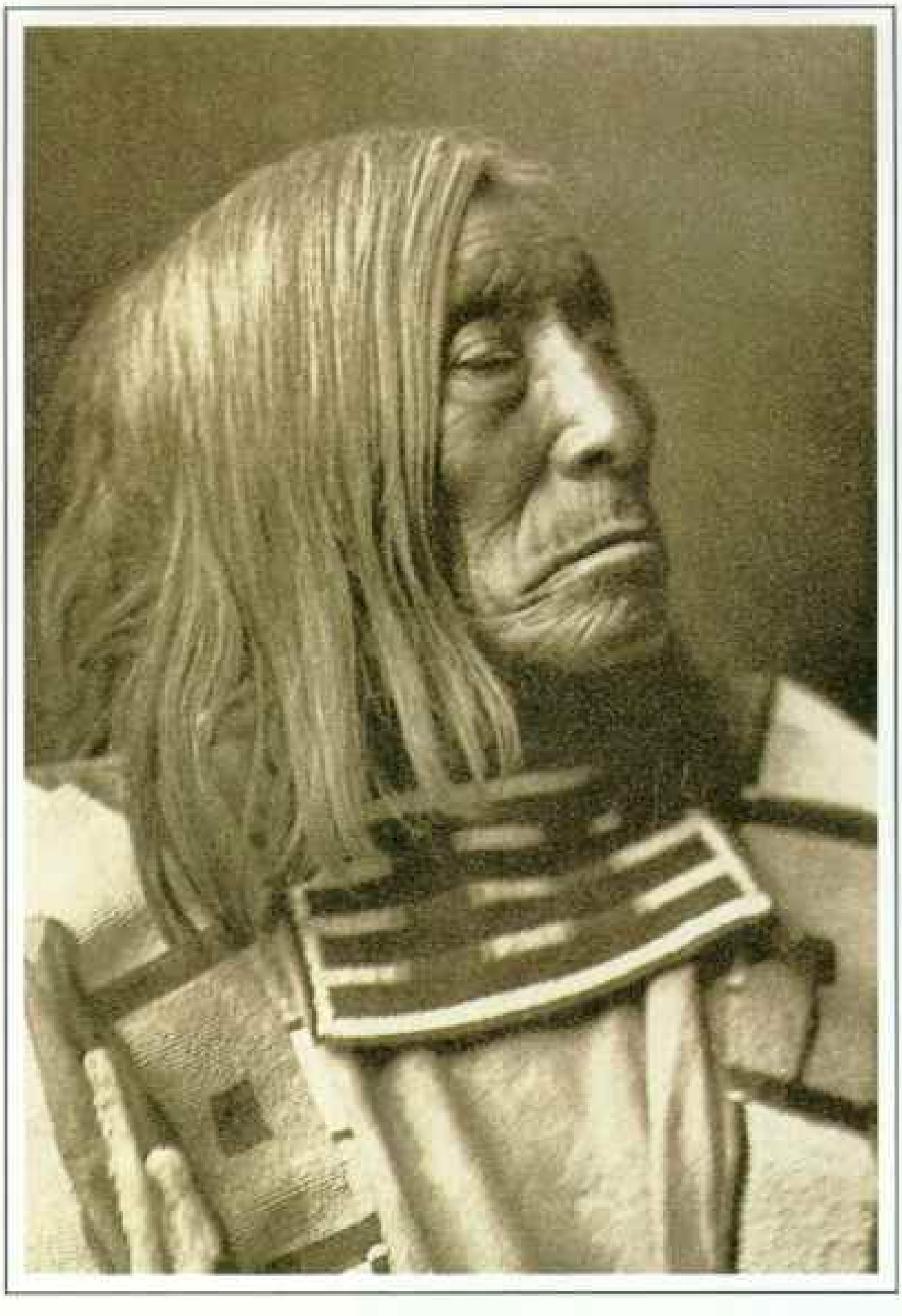
Another distinctive aspect of NATIONAL GEOGRAPHIC in the 1950s and '60s is its place in nature photography. To compare NATIONAL GEOGRAPHIC nature photographs with those in *Arizona Highways* or the *Sierra Club Bulletin* is to see a difference between the publication that wishes primarily to give information



PETER MAGUBANE

SOUTH AFRICA, 1985

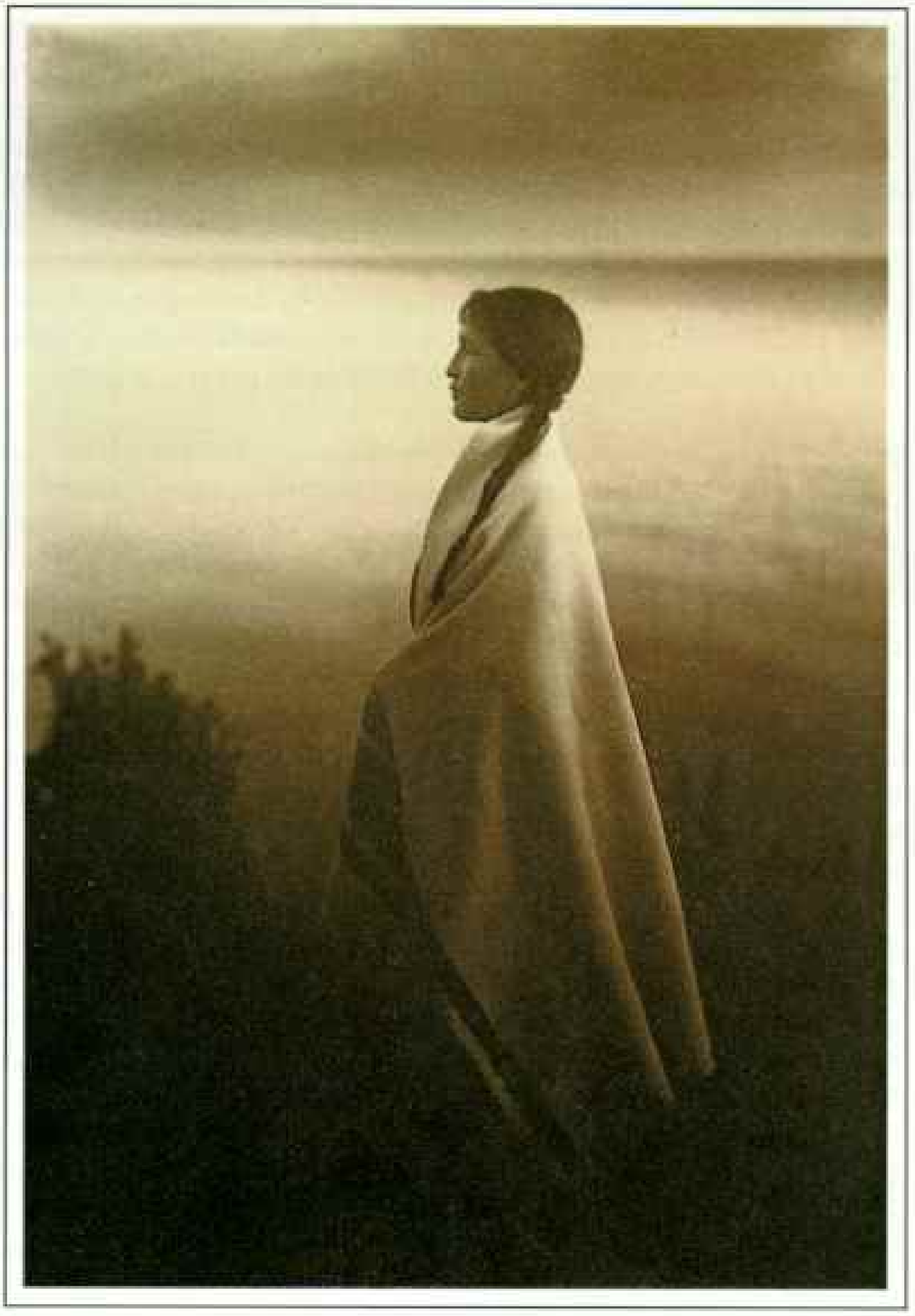
Artist Danisile Ndimande has decorated her house and courtyard wall in the exuberant, traditional style of the Ndebele people.



EDWARD S. CURTIS

MONTANA, 1908

Beginning in 1900, Curtis visited more than 80 tribes west of the Mississippi, making some 40,000 photographs, such as this one of the Apsaroke named Lone Tree.



ROLAND W. REED

MINNESOTA, 1907

A native of Wisconsin, Reed documented life among the Ojibwa at the turn of the century. He entitled this photograph "Enemy Wind."

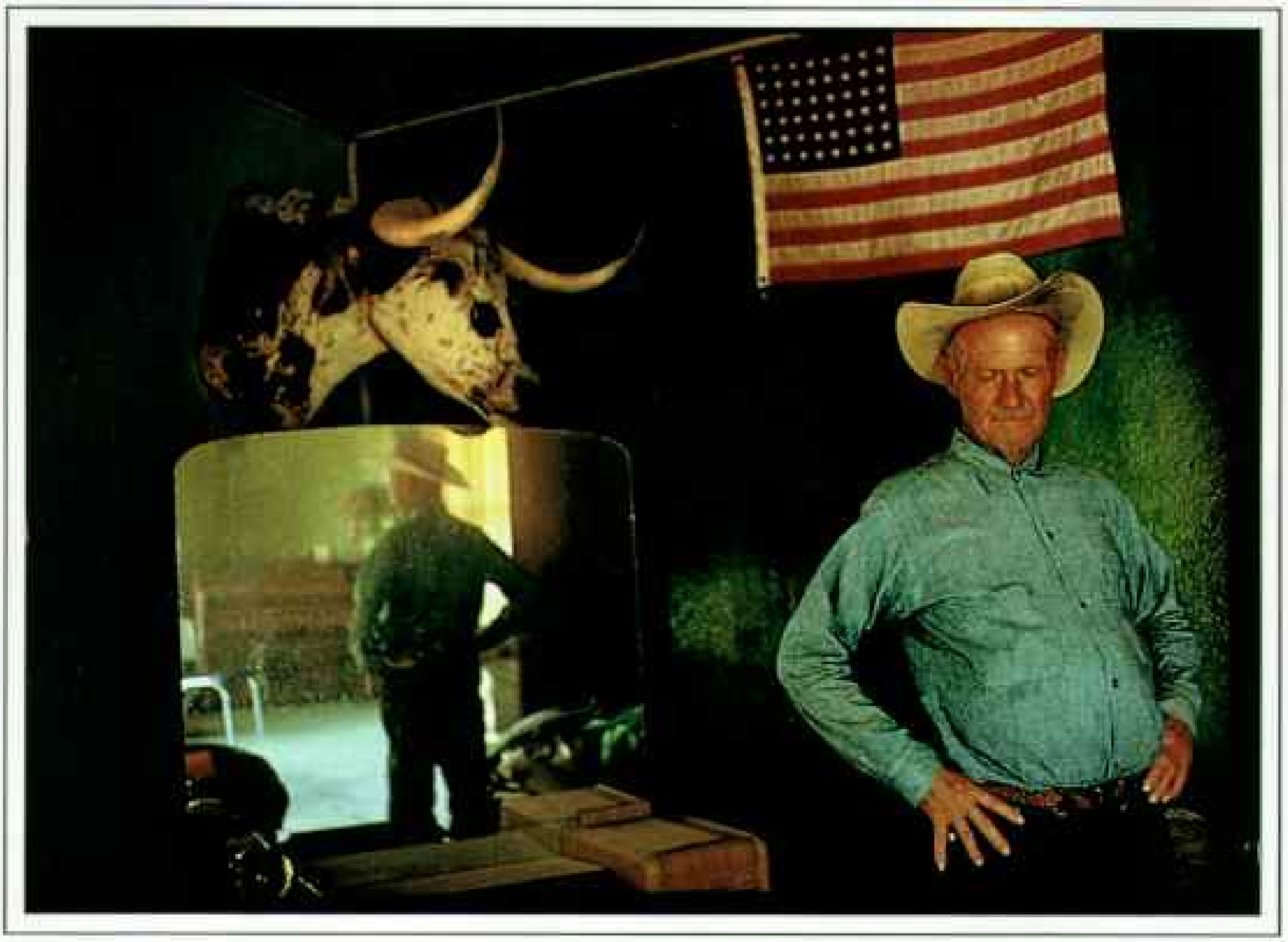
and the ones that are interested primarily in aesthetic values. *Arizona Highways* seemed to have reversed photographic methodology by taking studio techniques back into the field in order to obtain its almost incredibly sublime, theatrical, perfectly lighted images. In fact its photographers in the field often did use special reflectors, lights, large-format cameras—whatever was needed to paint the picture. Yet somehow the far less patently gorgeous, less picturesque images of nature made by the Geographic now seem more artful than those glamorous pictures. By virtue of their straightforwardness, by the integrity of their concern for a tradition of naturalism, by their seeming indifference to compositional allure, by their unpretentiousness, the Geographic pictures triumph.

THE DISTINCTION BETWEEN the outdoor studio shot and the candid nature shot perhaps makes a contrast between two basic tendencies in American photography. One is the "art for art's sake" legacy of the landscape masters: Edward Weston, Ansel Adams, Eliot Porter, Ernst Haas. The other is the older, scientific and commercial tradition of Eadweard Muybridge, William Henry Jackson, Edward Curtis, and others. The latter historical preoccupation with documenting nature resonates everywhere among National Geographic photographers. The former rarefied sensibility echoes there only faintly. National Geographic resisted the seductions of glossy nature photography because many of its key editors in this period came from either the toughly objective newspaper world or the equally demanding realm of first-rate layout and design.

Laying the groundwork for a new era was James M. Godbold, who became director of photography in 1959. During his tenure the policy prohibiting staff photographers from entering outside photojournalistic competitions was abandoned. Not only did many Society photographers fast become recipients of key awards and honors, but this simple license to gain recognition abroad changed the character of Geographic photographers' output.

Godbold was succeeded in 1963 by Robert Gilka, a news-sensitive picture editor from the *Milwaukee Journal*. Gilka recruited such talents as Bruce Dale, James L. Stanfield, Robert W. Madden, James L. Amos, Gordon W. Gahan, Steve Raymer, Jodi Cobb, and David Alan Harvey. Under Gilka's leadership more free lances were hired, tempering the ascendancy of staff photographers. By the late 1960s the styles of the incomparable William Albert Allard, as well as Thomas J. Abercrombie, Dean Conger, James P. Blair, Winfield Parks, and Emory Kristof set the tone in the magazine. They and their editors brought in another generation of extraordinary artists. Sam Abell, Cary Wolinsky, Nathan Benn, David Doubilet all emerged in the 1970s.

In arranging our exhibition, the task of selecting images from the contemporary period led us to a new understanding of National Geographic photography. What has recently seemed necessary to admit photography into the domain of high art is a certain *radicalness*. The art-photography academy often favors



WILLIAM ALBERT ALLARD

ARIZONA, 1970

As tough as the land around him, rancher Henry Gray reflects upon a half century of running cattle near Ajo on the Sonoran Desert.

trends at the extremes of the medium, whether they be technically innovative, stylistically rebellious, or depictive of the brutal or shocking. Many images here confront wrenchingly painful realities, even though we may perceive them as "conventional" pictures. Others are gentle, understated, unashamedly beautiful. Both the brutal and the beautiful examples, the more we compare them, take their place among those of their more established artistic peers. These National Geographic photographs and the plain reality of their subjects are just as compelling as any contrived art photographs.

The recent period of National Geographic photography is in essence not so different from what came before. Today, as in every other era, its photographers allow the subject of an assignment to dictate the nature of the photographs. From the evidence, we must now acknowledge the enduring power of this illustrational imperative. □


NATIONAL
SOUTHPACIFIC
THE NOTIONAL
GEOLAPHIC
MAGAZINE
THE NATIONAL
OSOGRAPHIC
MAGAZINE

Spoofing the Geographic

By ROY BLOUNT, JR.

WHAT IS FUNNY about the NATIONAL GEOGRAPHIC? That is an odd question to explore in the GEOGRAPHIC. I feel certain that Mr. Baird Orey, the person who had more back issues of the magazine than anyone else I knew when I was a boy, never looked for the answer to such a question in them. When the Oreys would have us over for supper, Mr. Orey would go to his shelf packed full of GEOGRAPHICS and look for the issue where he had once read something, all the details of which he couldn't remember.

"I believe you'll find that the natives of Micronesia live on poles," he would work into the conversation, unexpectedly.

"On poles?"

"Poles—I remember. . . ."

He would get up and begin pulling out issues.

"Huts on poles?"

"Not *huts,* so much as—it was in, what year? Look! Here's a two-headed turtle!"

That was the part I liked, when Mr. Orey would start finding things he didn't remember at all.

"This twin-headed turtle," he would read to us aloud, "shows why such freaks, though not uncommon, rarely escape their natural enemies for long: each head controls the two legs on its side."

"Imagine," Mrs. Orey would say.

"Often the right head sounds 'Retreat!' while the left orders an advance. Result: the turtle gets nowhere."

"My stars," Mrs. Orey would say. "Baird. . . ."

". . . has a single blood stream, shell, and lower intestine, most other parts are dual. The heads often fight over food and seldom agree on a common objective."

"Whole families just on poles?" my father would say. He liked to get Mr. Orey going. By that I mean he liked to pin Mr. Orey down.

"I think you'll find," said Mr. Orey, moving on from the turtle reluctantly, "that the family structure there is not at all what we . . . Hazel, which issue was it. . . ?"

"I just don't know, Baird. Don't look for it the whole rest of the evening, now, Hon."

But he would keep sneaking looks over there, and my father would say, "I can't feature how poles would hold them up," and he and Mr. Orey would argue about it without either of them having a clear picture of what they were arguing about. Which certainly wasn't the magazine's fault. Nor was it my father's, as he would not refrain from pointing out. Meanwhile I would be on the floor getting a clear picture of the turtle. I have remembered that turtle for 36 years. I was relieved, recently, to discover that I hadn't made it up. I found it in the library by looking through all the issues that came out in 1951 and '52, when I was ten and eleven.

No one I knew back in Georgia when I was that age had ever, except in the Army, traveled anywhere farther away than Washington, D. C., which is where NATIONAL GEOGRAPHIC staffers start out from. But we all knew of jungle life, fezzes, desert islands, lumberjacks, and igloos, largely from two

A pack rat's trove of back issues illustrated a 1963 Esquire article on NATIONAL GEOGRAPHIC, the magazine that's hard to throw away but easy to spoof. The GEOGRAPHIC has inspired a fun-poking parade of cartoons and satirical imitations, such as these by the National Lampoon (far left), the U. S. Geological Survey's Pick and Hammer Club, and Mad magazine.

PHOTOGRAPH BY CARL FISCHER © 1963, MAGAZINE COVERS, LEFT TO RIGHT: NATIONAL LAMPOON © 1983, PICK AND HAMMER CLUB, MAD MAGAZINE © 1958, E. C. PUBLICATIONS, INC.

Georgia-raised humorist ROY BLOUNT, JR., a regular contributor to major U. S. magazines and the author of eight books, is currently focusing his wit on a new novel, *First Hubby*, about the spouse of America's first woman President.

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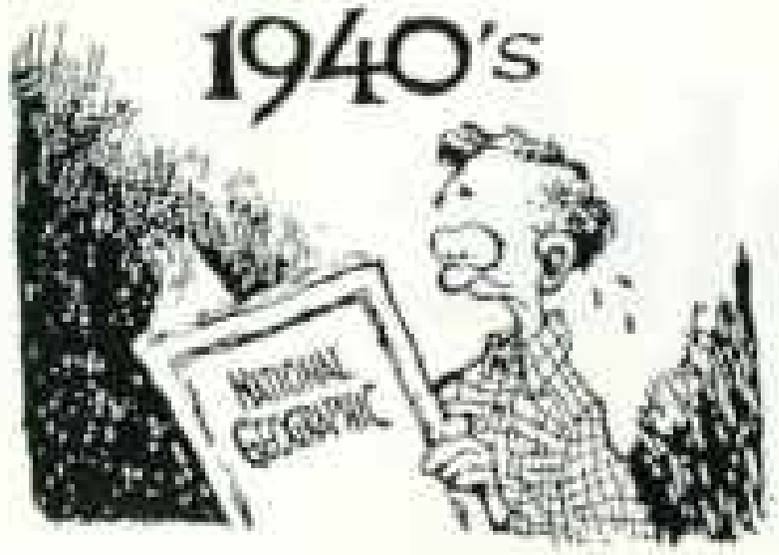
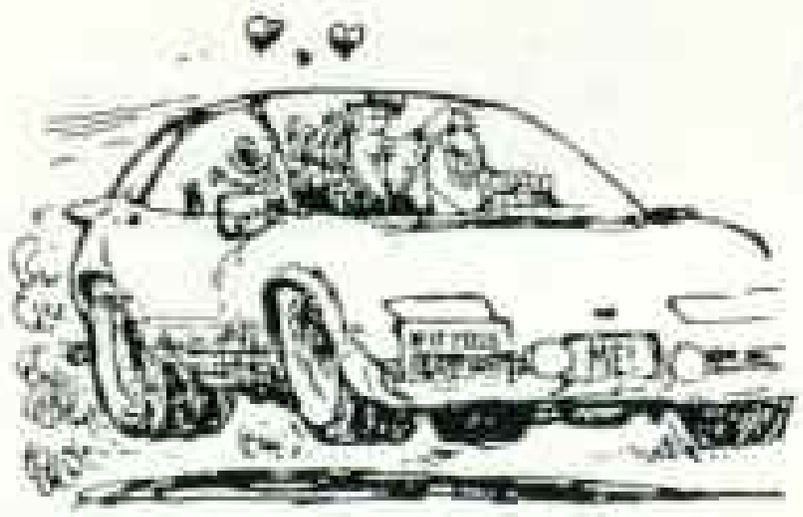
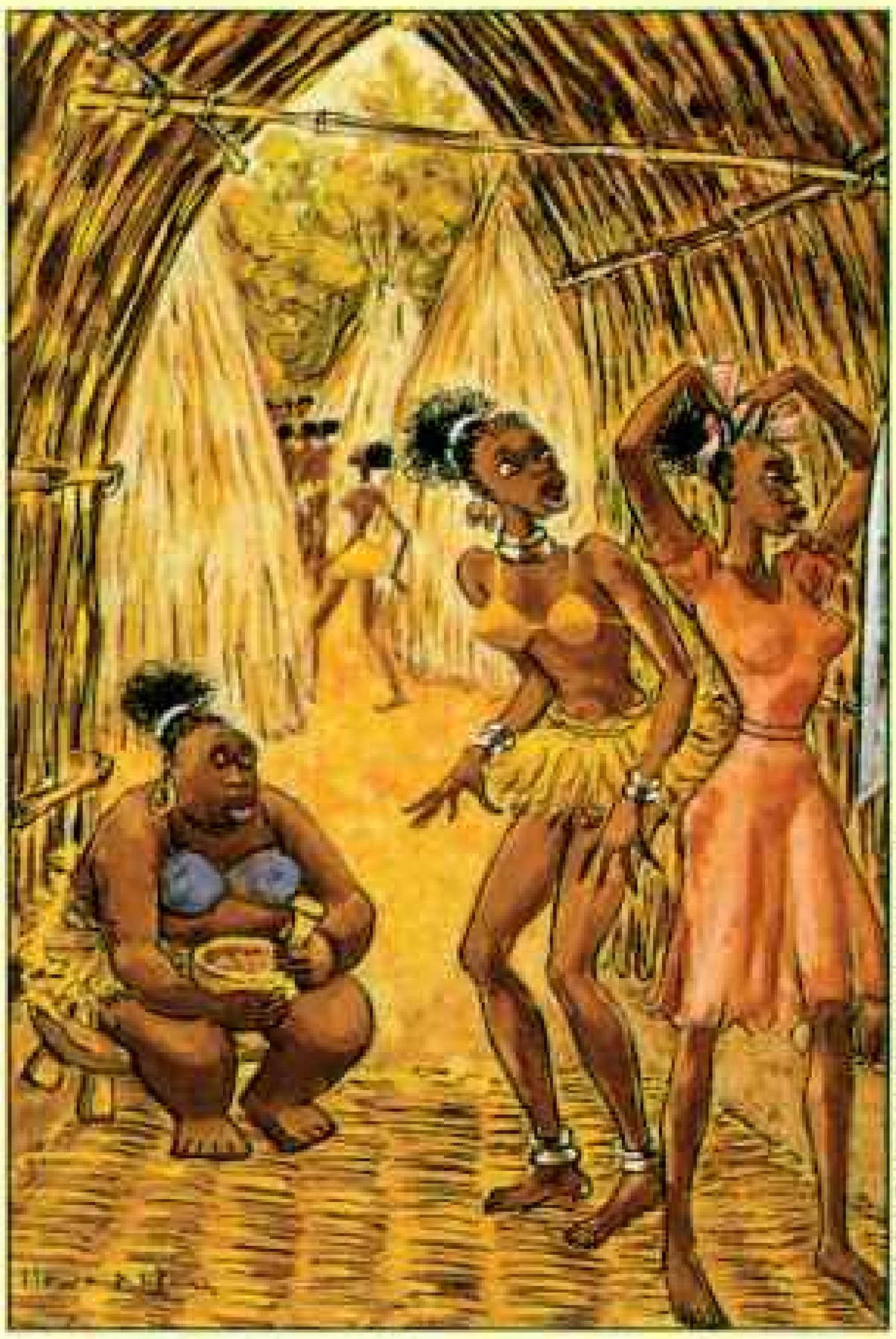
MACNELLY Chicago Tribune

SEX: A Modern History





"Well, well — another blond hair. ... Conducting a little more 'research' with that Jane Goodall tramp?"



"Quick, slip that dress off! Here come a couple of photographers from the National Geographic"

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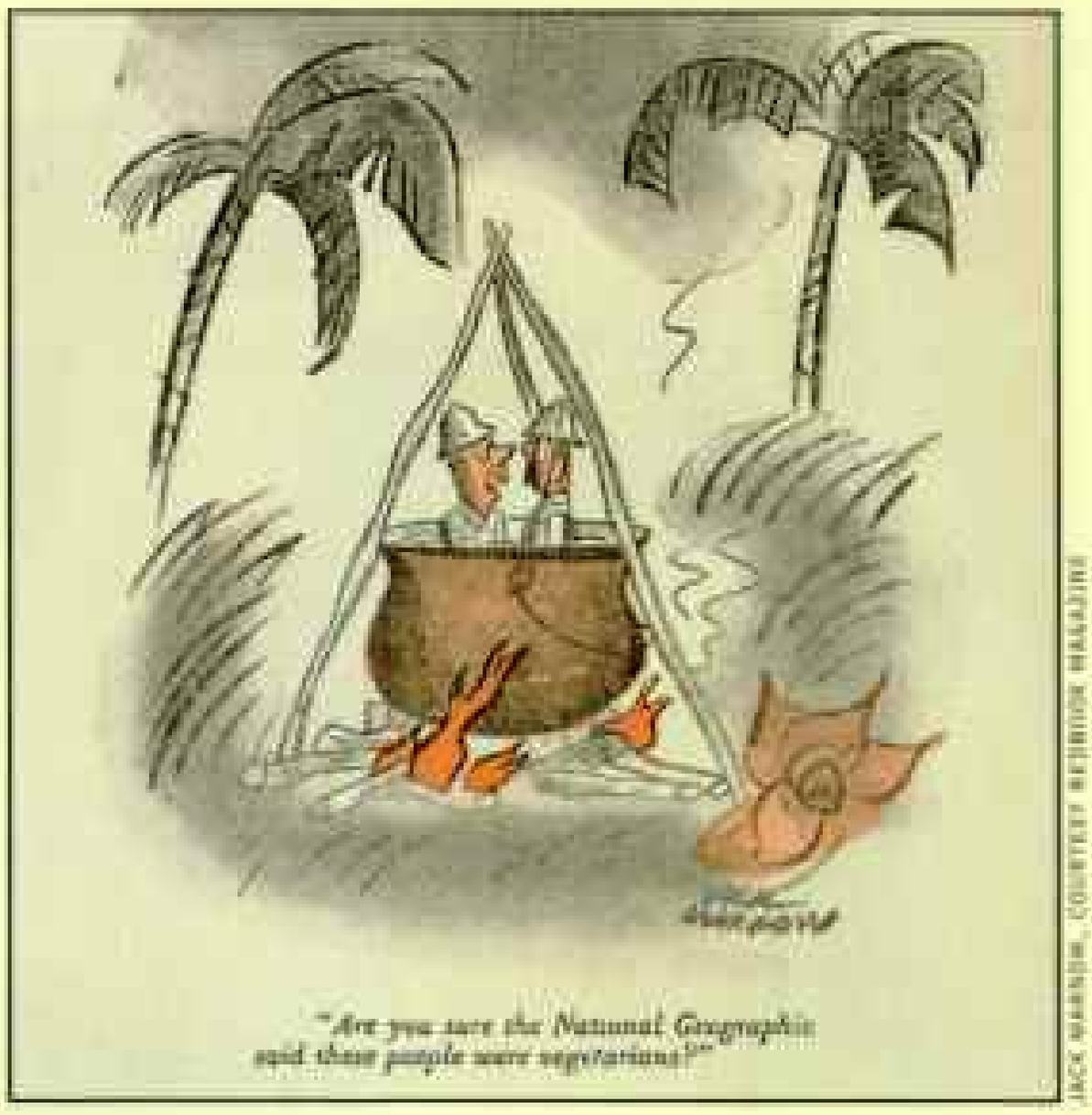
EDWARD RAY © 1985, COURTESY ESQUIRE MAGAZINE

"But Dr. Beckel! Where is he?!"

GARRETT PRICE © 1954, 1982, THE NEW YORKER MAGAZINE, INC.



"Are you sure the National Geographic said these people were vegetarians?"

JACK WEBSTER, COURTESY NEBRASKA MAGAZINE

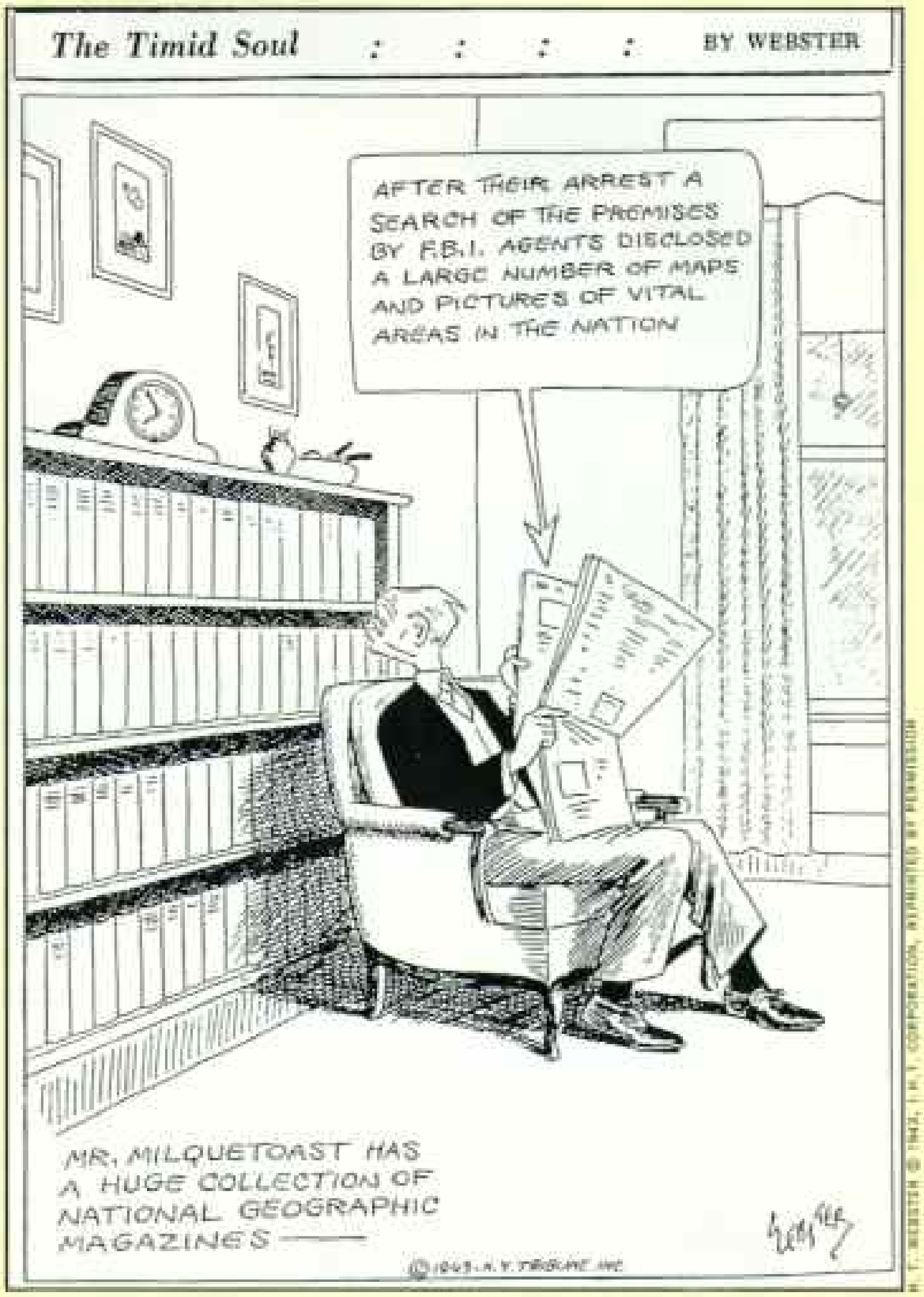
sources: the GEOGRAPHIC and, in other magazines, cartoons.

The cartoonist got it all from the NATIONAL GEOGRAPHIC. I feel certain that no person working for this magazine has ever actually been boiled in a pot—which is perhaps one reason why it has been the source of so much humor.

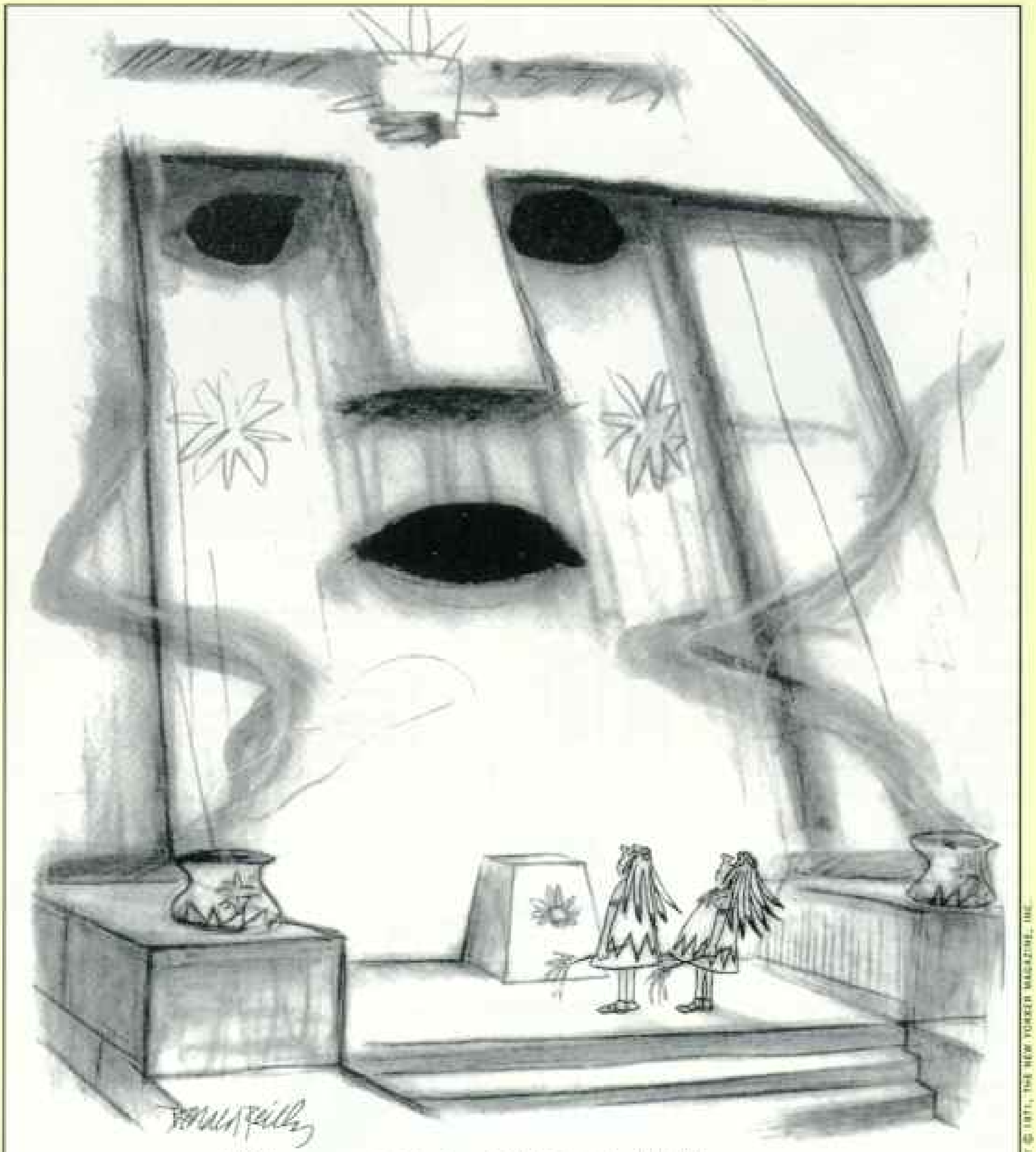
The NATIONAL GEOGRAPHIC gives off a sense of security. "These fur-hatted Kirghiz admired the way the author packed a yak with diamond hitch, but disliked his boots (too cold, they said). Quolan Larh, who never heard of the U. S., learned to sing 'Oh! Susanna.' "

If someone named Quolan Larh could learn "Oh! Susanna," I could learn about yaks in good humor. Re-perusing those issues of the early fifties has taken me back to my childhood, which was strange (being childhood) but by no means exotic, at least for its place and time. I was prepared to believe anything, as long as it made sound American sense.

By that I mean, I suppose, made sense to my father. He preferred such information as was found in the July 1951 article about wood. The whole wood picture. "Versatile Wood



© 1963, N. Y. HERALD INC.



"We've run out of virgins, O Mighty One! Will you accept a photographer from the 'National Geographic'?"

DONALD REILLY © 1971, THE NEW YORKER MAGAZINE, INC.

CALVIN AND HOBBES BILL WATTERSON

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Waits on Man." (Nothing in it about people living on poles—I checked.) The NATIONAL GEOGRAPHIC wasn't out to shock me, so I could cheerfully accept that in New Guinea natives wore marsupial fur in their ears.

There is something funny about an institution that juxtaposes marsupial fur in foreign ears with the story of wood, but I don't know how to put my finger on it. You might as well ask what is funny about cats, uncles, plumbing, breakfast, lawn mowing, Thanksgiving, Pikes Peak, television sets, or monsters under the bed. In any staple of national life there is bound to be comedy.

You notice I haven't said anything about breasts. Neither did my father or Mr. Orey. □

"Mr. Watson—Come here—

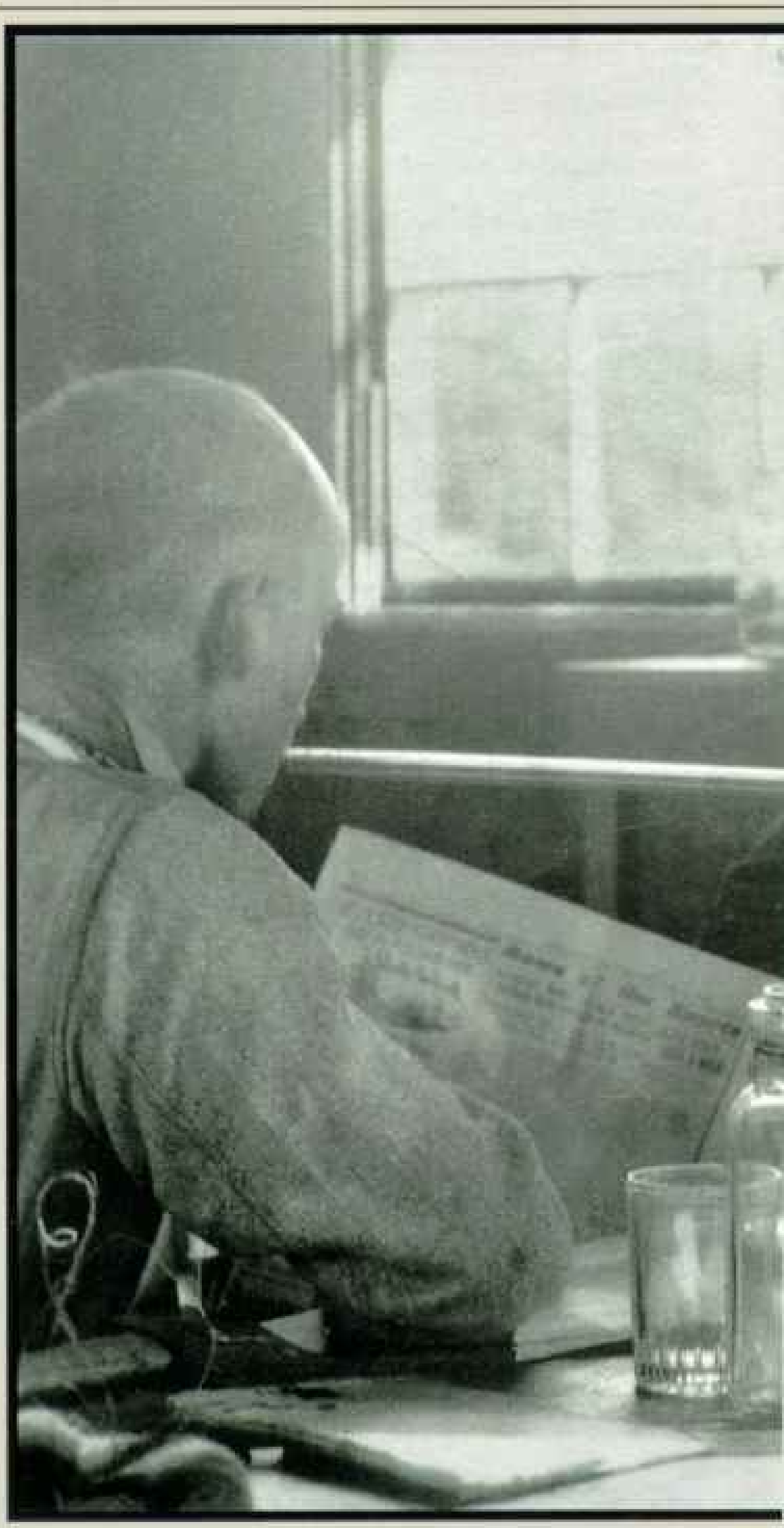
Alexander

By ROBERT V. BRUCE

Photographs by
IRA BLOCK

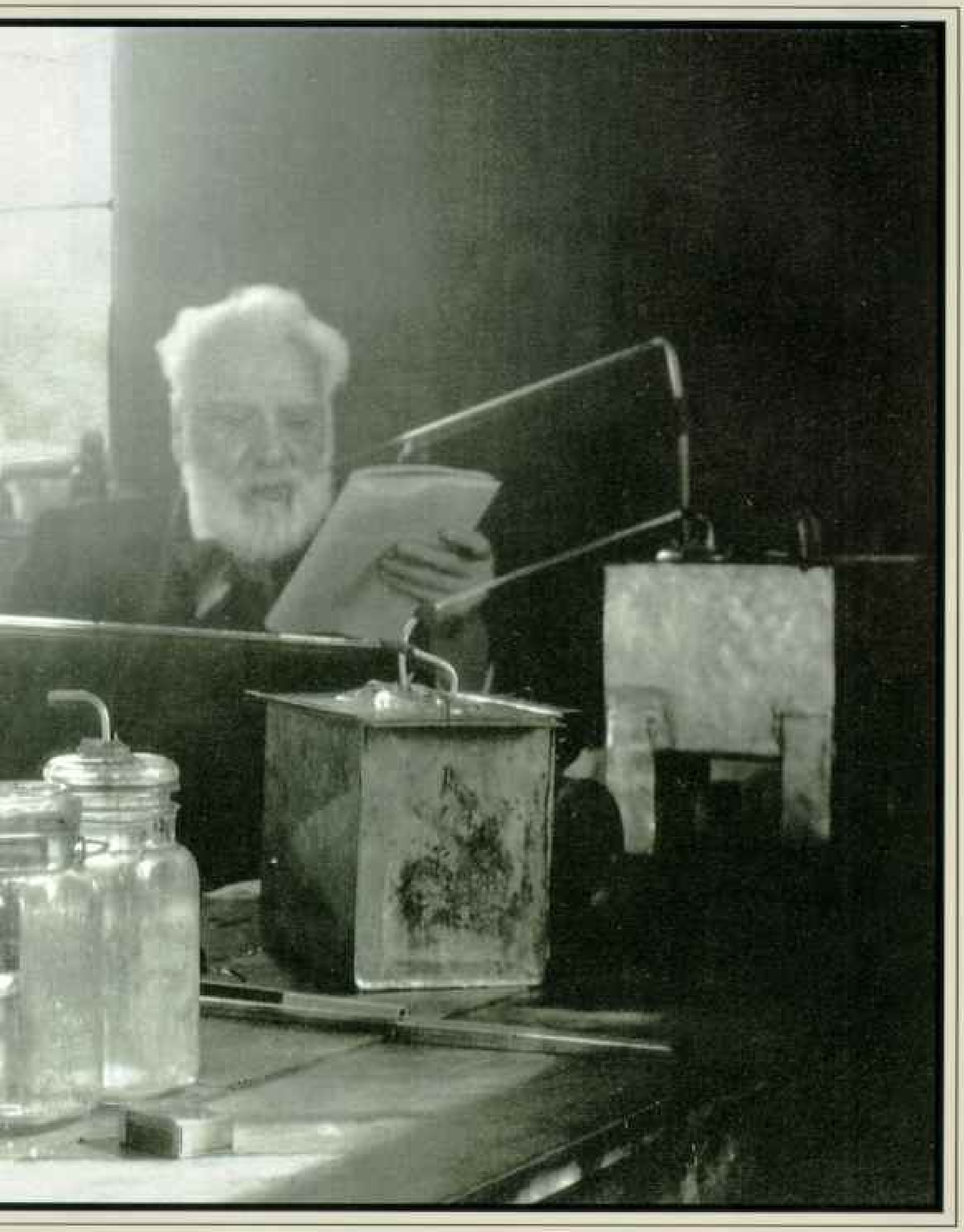
Creative till the end, the genius who invented the telephone—and uttered the famous words above—experimented during his last months with distilling drinking water from the sea, from fog, and even, as here, from human breath. Bell's intense, childlike curiosity drove him to tinker with problems as diverse as aeronautics and genetics. But what else could he do? A true inventor, he said, "can no more help inventing than he can help thinking or breathing."

GILBERT H. GROSVENOR COLLECTION OF PHOTOGRAPHS OF THE ALEXANDER GRAHAM BELL FAMILY, LIBRARY OF CONGRESS (RIGHT); AUTOGRAPH FROM DR. BELL'S NOTEBOOK, ALEXANDER GRAHAM BELL PAPERS, LIBRARY OF CONGRESS



I want to see you"

Graham Bell



An original thinker, Bell proved a poor scholar at Edinburgh's Royal High School on monument-crowned Calton Hill. Later in London he thrived under the rigorous tutelage of his grandfather, a well-known elocutionist and dramatic reader, and by the age of 17 he had returned to Scotland sophisticated beyond his years.

EVERYBODY KNOWS that Alexander Graham Bell invented the telephone. And on that point, at least, what everybody knows happens to be true. But there is another common belief that runs afoul of the Bell story. Nowadays we take it for granted that success depends on specializing, keeping one's eye on the ball. So thought most people in Bell's day too. "Put all your eggs in the one basket," wrote Mark Twain, "and—WATCH THAT BASKET." We might suppose, therefore, that Bell proceeded on the one-basket plan. Fortunately he did not. If he had, he would never have invented the telephone.

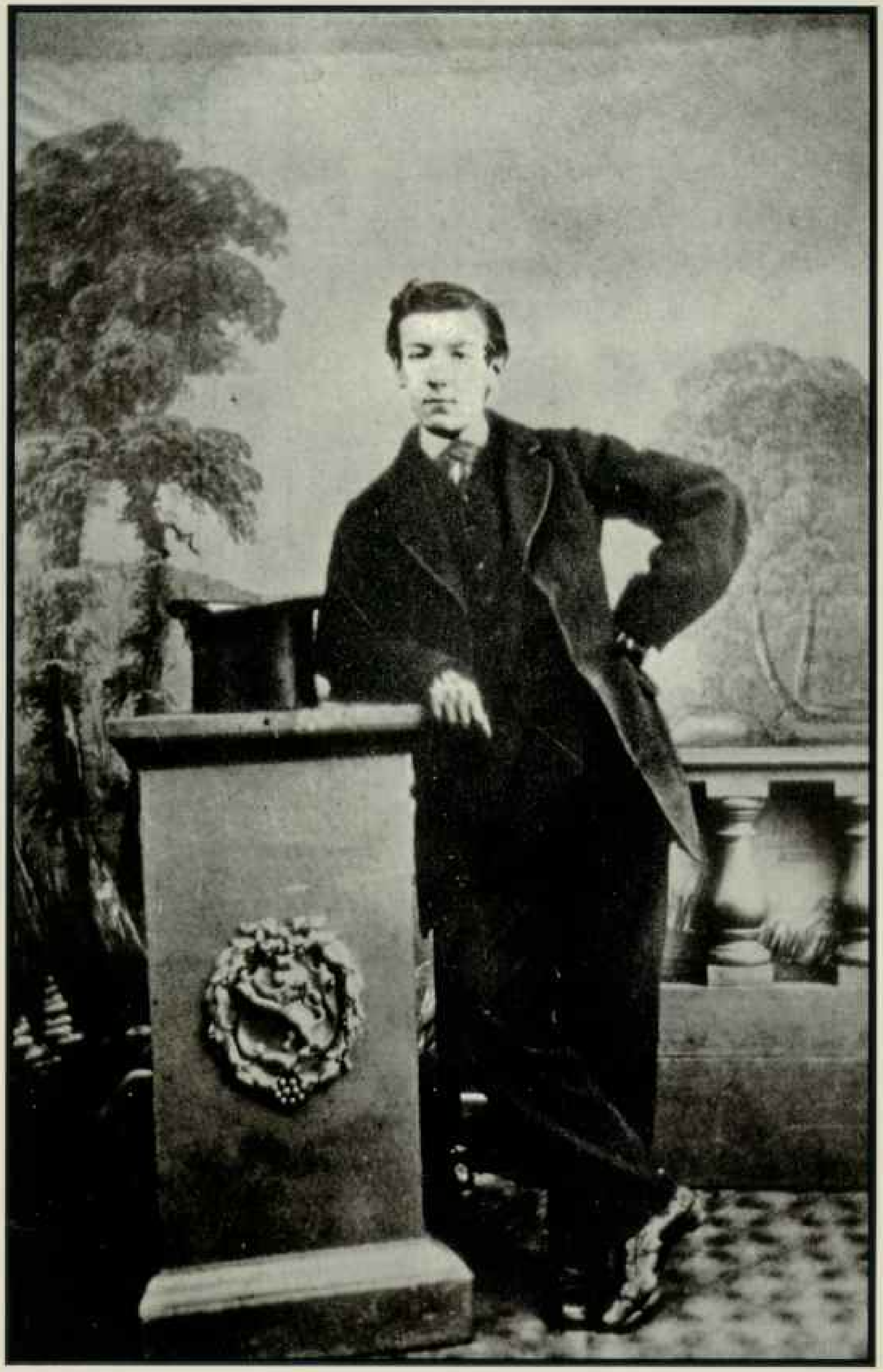
It was simply not in Bell's nature to fixate for long on "the one basket." All his life he retained a child's joy in the world's diversity. But before he became world-famous, Bell's love of diversity raised misgivings in some who knew him. His prospective father-in-law chided him for his tendency "to undertake every new thing that interests you & accomplish nothing of any value to any one." That was less than five months before the telephone was patented. What saved him from mere aimless skittering was his capacity for total absorption in the concern of the moment—another trait that might be called childlike. "My mind," he once wrote, "concentrates itself on the subject that happens to occupy it and then all things else in the Universe—including father, mother, wife, children, *life itself*, become for the time being of secondary importance."

If those traits were innate, external circumstances confirmed them, beginning with the Scottish city where he was born in 1847. In its very contours Edinburgh encouraged a roving eye and spirit. Some cities convey their impatience with the horizontal, their urge to be up and doing, through the work of human hands—cathedrals, towers, skyscrapers. In others nature lends a hand: They are cities upon hills. Edinburgh was that kind of town.

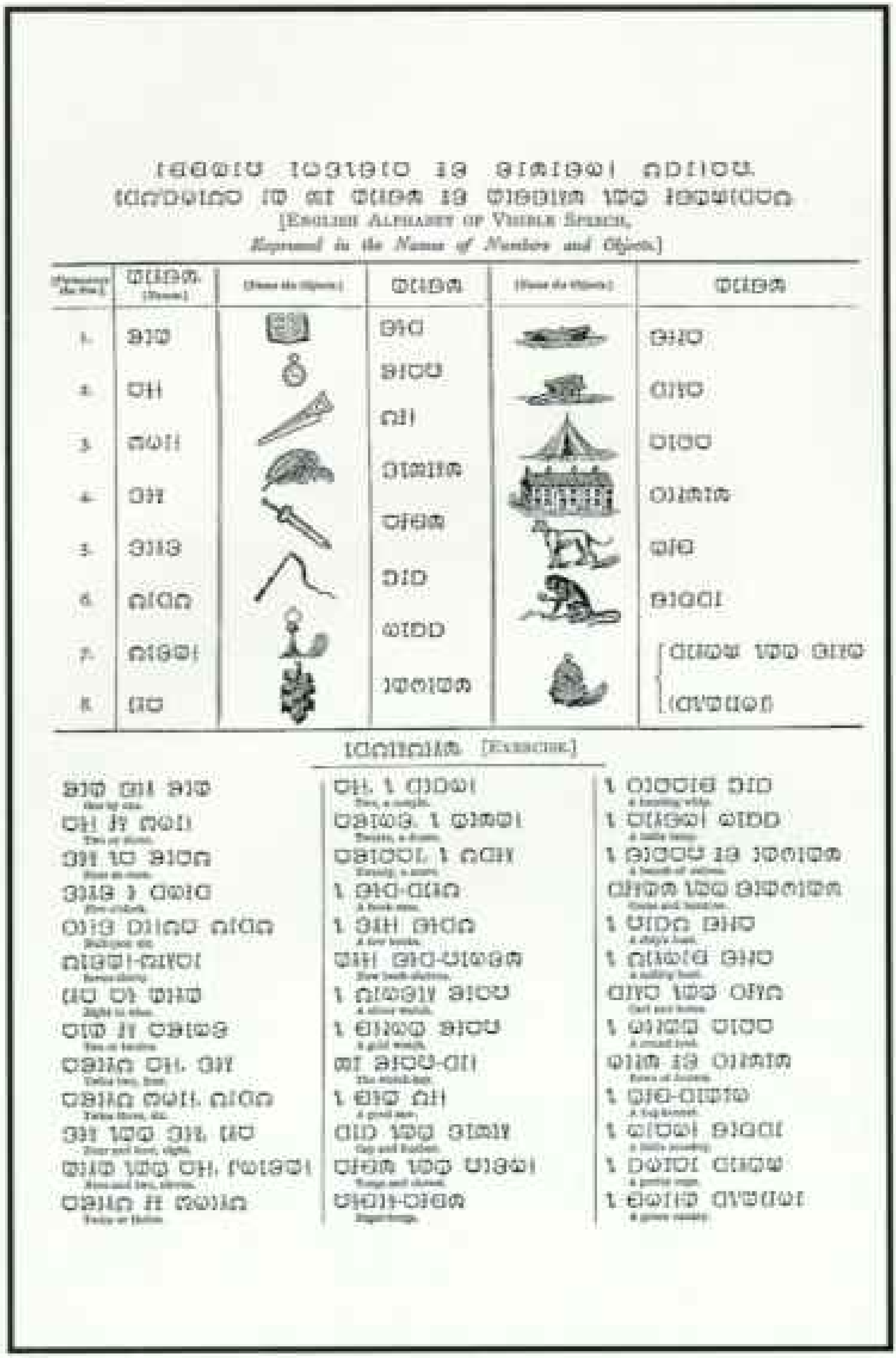
Young Bell's favorite vantage spot was Corstorphine Hill. From it ran a grand view over the elegant New Town and Leith docks to the sea. On the crest of Corstorphine the boy was close to the sky, and below him circled the alluring horizon. Lying at peace on the grassy slope, Aleck watched the birds make their mysterious way, and this more than all else stirred his envy and wonder.

Something more than terrain, however,

ROBERT V. BRUCE, a biographer of Alexander Graham Bell, won this year's Pulitzer Prize in history for his book *The Launching of Modern American Science 1846-1876*. Free-lance photographer IRA BLOCK has illustrated subjects for the NATIONAL GEOGRAPHIC from the North Pole to Peru.



ROOSEVELT COLLECTION, LIBRARY OF CONGRESS



Lips, mouth, and throat took commands from Visible Speech, devised by Bell's father. Bell (above, at top right) introduced the system to the Boston School for Deaf Mutes in 1871. His work there strengthened a lifelong commitment to help the hearing impaired.

Bell descendant James Grosvenor Watson continues the family tradition as he guides pupil Sharyn Mageary in an auditory-verbal exercise.

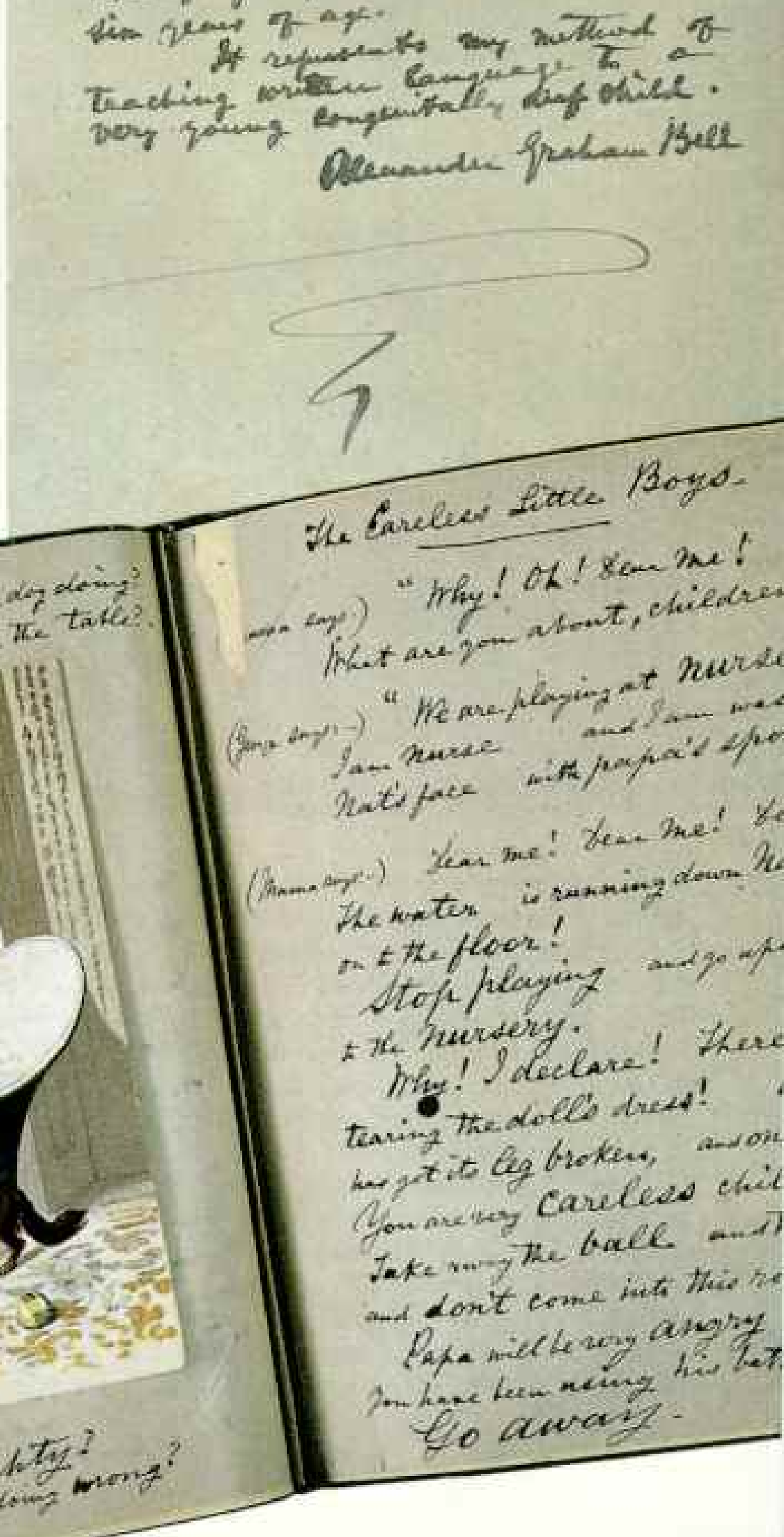
DAGUERREIAN COLLECTION, LIBRARY OF CONGRESS (ABOVE AND ABOVE LEFT)

made Edinburgh a tonic to the mind. Its own people, and others too, called it the Athens of the North (as well as "Auld Reekie" for its coal smoke). For generations Edinburgh had been a center of culture second only to London in the British Empire. The glorious tradition of David Hume in philosophy, Adam Smith in economics, Robert Burns and Sir Walter Scott in literature, James Hutton in geology, and the great civil engineer Thomas Telford in technology remained strong in Bell's boyhood. The University of Edinburgh had long maintained a faculty ranking with the world's best, especially in science and medicine. The hallmark of the Edinburgh mind was exuberant versatility. Another son of Edinburgh, Robert Louis Stevenson, three years Aleck Bell's junior, quite naturally included in his *Child's Garden of Verses* a jaunty couplet: "The world is so full of a number of things, I'm sure we should all be as happy as kings."

BELL'S OWN FAMILY embodied the Edinburgh spirit. Aleck stood in awe of his father, Alexander Melville Bell, a successful elocutionist and speech teacher. As befitted his vocation, the elder Bell was a man of impressive bearing and fine address. Lecturing regularly at the University of Edinburgh, coaching teachers, ministers, and the children of titled families, he kept in touch with the intelligentsia of the

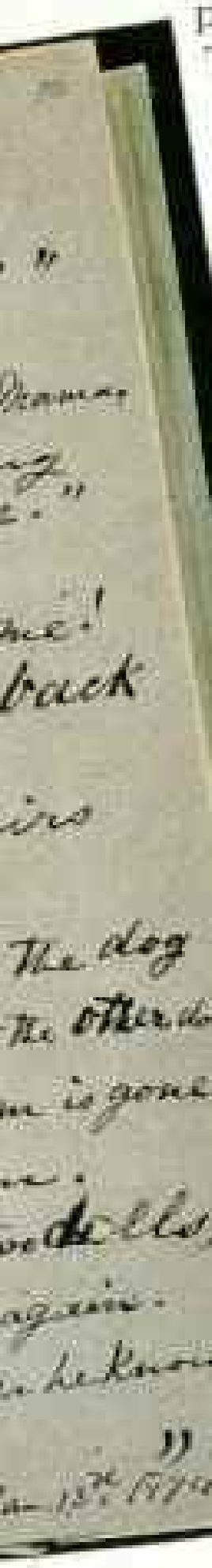
ALL GROSVENOR COLLECTION, LIBRARY OF CONGRESS

Born into silence, George Sanders studied with Bell for several years. To instill natural language patterns in the "lovable little fellow," Bell assembled an illustrated storybook (below), which he annotated years later (above right). George's father, Thomas, invested his entire fortune in developing and marketing the telephone.



city. More than that, he qualified as one of them by research and publication. For years he pursued a century-old dream of elocutionists and phoneticians, scientifically analyzing vocal sounds in order to develop a complete and universally applicable system of phonetic notation. At last in 1864 he achieved his goal with a system he called Visible Speech. Aleck in his late teens became adept in it and helped his father demonstrate it to linguists and phoneticians in London as well as Edinburgh. They hailed it as a major advance.

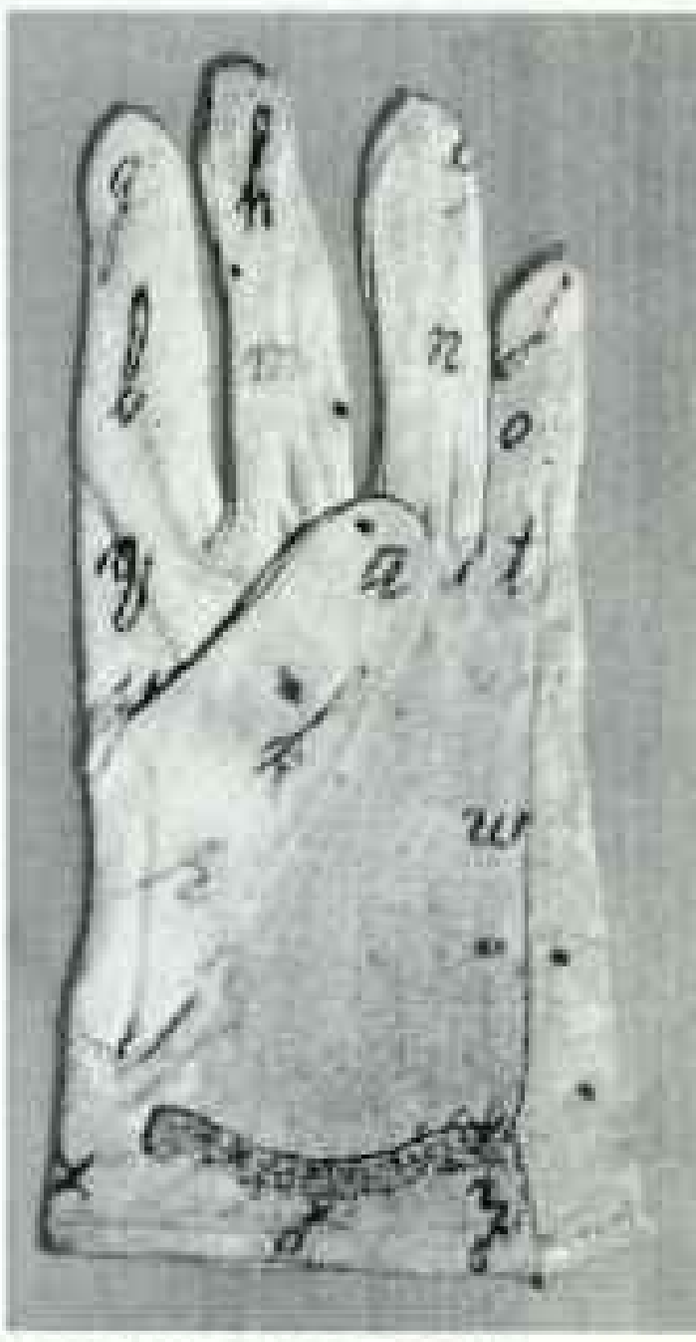
Aleck's mother, Eliza Bell, had meanwhile added still another dimension to her son's widening world. Though her hearing was severely impaired, she was a good pianist, achieving feedback by fastening her ear tube to her ear and resting the mouthpiece on the soundboard. The bond between mother and son was strong. More than his two brothers, Aleck as a child had a knack for bypassing the ear tube and communicating in a low voice close to her forehead. He too showed pianistic talent and studied for a time with a leading pianist, dreaming of glory as a virtuoso. Then his teacher died, and the dream too.



Science also captured the boy's imagination. He collected botanical specimens until the drudgery of memorizing nomenclature dulled his fervor. Zoology engaged him for a while. He had no heart to kill for science, but when chance or nature supplied dead specimens, he explored their insides. And he tried his hand at technology. The father of a playmate owned an old gristmill on a nearby stream, a fascinating place for the two boys to play. One day, wearying of their cavorting, the miller challenged them to do something useful, such as taking the husks off the grain. Aleck set about experimenting and came up with a workable device involving rotating paddles in a brush-lined cylinder. That, he wrote many years later, "was my first incentive to invention."

Thus early, Aleck Bell whirled around happily on a carousel of hobbyhorses—phonetics, physiology, pianos, deafness, invention, elocution, the flight of birds, and the intoxicating panorama of the wide world. Yet, for all their seeming incongruity, hindsight reveals a prophetic convergence, a concealed focus: the art, science, and technology of communication.

A hint of what lay ahead came with a project the elder Bell urged on Aleck and his older brother, Melville, in 1863. At 16 Aleck was just back from a year with his paternal grandfather, who taught speech in London. The old man had polished Aleck's elocution, held him to serious reading and study, instilled in him ideals of social and political democracy, and converted him, as Aleck later wrote, "from a boy somewhat prematurely into a man." Cut off from friends of his own age, however, Aleck had come home graver and more withdrawn than before, resentful of now being "treated as a boy again." So his father challenged him and Melville to collaborate in making a "speaking machine," a device for mechanical production of vocal sounds, one such as Aleck and his father had lately seen in London.



FINGER-SPELLING GLOVE USED TO TEACH THE ALPHABET TO DEAF STUDENTS ALLOWED THEM TO VISUALIZE THE LANGUAGE THEY WERE LEARNING.

After studying a lamb's larynx given them by a butcher, the boys constructed a model of the vocal organs, which could be shaped and positioned by levers. Operated by blowing through a tube, it made voicelike sounds. The project helped rekindle Aleck's youthful spirit. And as the father doubtless also intended, it heightened his fascination with mechanisms of speech.

The fascination carried over when Aleck at last tasted independence as a teenage instructor for two years at a boys school in Elgin, on the northern coast of Scotland. With his musical ear and some ingenious experiments with tuning forks and various shapings of his mouth and throat cavities, he found that each vowel sound is a compound of two pitches and that in a certain sequence one rises and the other falls as the sequence progresses. What was

more, he deduced the physiological basis of the phenomenon.

Like the paired pitches, Bell's spirits both rose and fell when he learned from a London phonetician that the great scientist Hermann von Helmholtz had already made the same discovery. Helmholtz had reached the finish line first, to be sure, and that was disappointing. But the 19-year-old Bell had independently run the same course, and that was grounds for pride. More important, Bell was intrigued by Helmholtz's device for keeping each of his tuning forks vibrating: an intermittent electrical current of the same frequency as the fork's natural vibrations, activating an electromagnet near the fork. Bell told friends that someone, someday, would go on to transmit speech and music by telegraphy.

After Elgin, Bell taught in a boys preparatory school at Bath, England, meanwhile tinkering with batteries and telegraphic instruments. But his younger brother, Edward, died of tuberculosis that year, leaving his parents alone in his late grandfather's house on Harrington Square, London. So Aleck, now 20, joined them and took up the family vocation of phonetics and speech training.

Birthplace of Bell's inspiration for the telephone, his parents' Canadian home near Brantford, Ontario, displays family heirlooms in a museum. Hard of hearing, Bell's mother never learned to read lips. Her rubber ear tube with wooden ends curls in a sitting room chair.

At a nearby private school in 1868 the young man first tried his skill at teaching speech to deaf children, four bright little girls. Perhaps his mother's deafness gave him a special feeling for them. With the help of Visible Speech and Bell's talent as a teacher, the girls learned quickly and joyously. Aleck had found his true calling. Even after inventing the telephone, he would write, "Of one thing I become more sure every day—that my interest in the deaf is to be a life-long thing with me." And true to his word, he would list "teacher of the deaf" as his profession to the end of his days, notwithstanding a perennial counterpoint of other pursuits.

Music remained one of those other interests. Playing the piano at Harrington Square, Aleck became fascinated with the phenomenon of sympathetic vibration. By singing into the piano he could sound the wire that matched the pitch of his voice. He noticed also that the sound of a piano chord coming through a thin wall from the adjoining apartment was faintly echoed by the

corresponding wires of his piano. The foreshadowings of a momentous concept thereupon formed in Bell's mind. If the different frequencies of several tuning forks were transmitted simultaneously over a single wire, they, like the piano chord, could be separated out by similarly tuned forks at the other end. Thus a number of Morse code messages could be sent at the same time over a single wire. But other events jostled this notion into the background.

In 1870 Aleck's older brother, Melville, died, also of that Victorian scourge, tuberculosis. His father, on a recent professional tour of North America, had been captivated by the go-ahead spirit and bracing climate there. An invitation to give a lecture series in Boston now inspired him to make a New World home near some transplanted Scottish friends in Brantford, Ontario. In the hope of saving his only remaining son from the fate of the other two, he persuaded Aleck to come along.

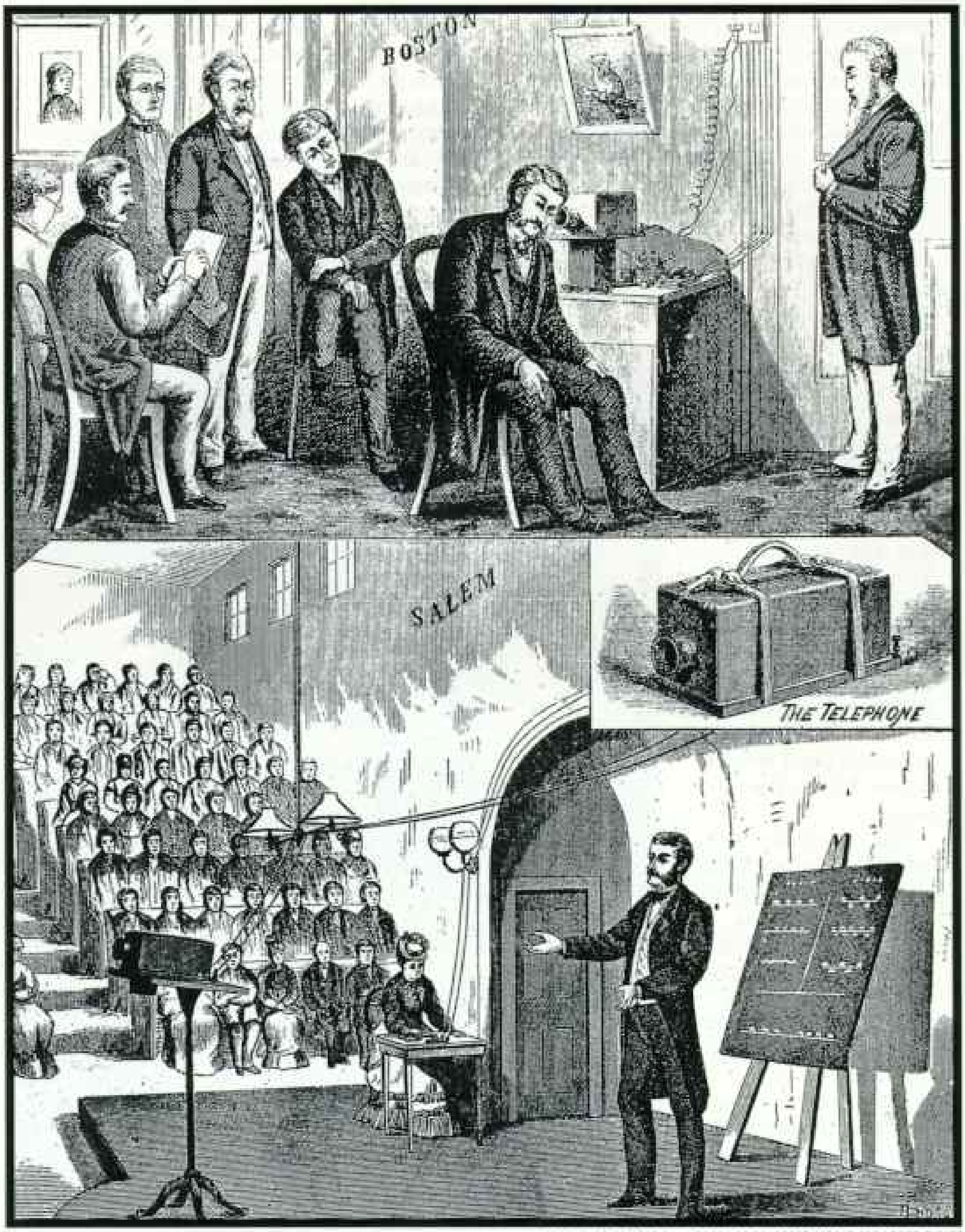
The elder Bells settled comfortably in an ample house outside Brantford amid twelve acres of woods, fruit trees, and outbuildings on a high bluff overlooking the Grand River. When the elder Bell, warmly received in Boston, was asked to introduce the Visible Speech method there at a new school for deaf children, he referred the offer to Aleck, who accepted it eagerly.

ADDISON COLLECTION, LIBRARY OF CONGRESS

Fingers do the talking as the teenage Helen Keller converses with Annie Sullivan, her teacher, and Bell, who had brought the two together. Keller's first meeting with Bell, at age six, was the door that led her "from darkness into light, from isolation to friendship."

BOSTON was an American Edinburgh, even to claiming the title Athens of America (as well as the self-mocking nickname "hub of the solar system"). Harvard, the nation's oldest college, was about to become a true university under Charles W. Eliot; and other schools, like Boston College, MIT, and Boston University, had sprung up in the 1860s to enrich the academic scene. Boston businessmen were developing mines and railroads in the West, while industry and commerce continued to prosper at home. Most significant for Aleck's future, Boston was the leading center of American science and technology, including electricity.

On his own at last, Bell flourished in Boston. His visible enthusiasm, made all the more dramatic by his jet black hair and expressive face, communicated itself to his deaf pupils,



GROSVENOR COLLECTION, LIBRARY OF CONGRESS (ABOVE AND LOWER RIGHT)

"An unqualified success," proclaimed the Boston Globe *of Bell's first lecture on the telephone in February 1877 at the Lyceum Hall in Salem, Massachusetts. To the delight of the audience, Thomas A. Watson, Bell's assistant, sang, joked, and read a news report over the telephone from Boston, 16 miles away.*

Only 15 years later the inventor (right) helped inaugurate phone service between New York and Chicago. The telephone had made him world-famous. A later brainchild, the photophone (above right), transmitted sound a short distance on a beam of sunlight but failed to find a practical application.

and his resonant, well-modulated voice also charmed Bostonians who could hear. Impressed by his results, other schools invited him to demonstrate his methods. In 1873 he joined the faculty of Boston University as professor of vocal physiology, thus gaining status in academic circles.

MEANWHILE Bell somehow found time and energy to pursue science and invention. Boston's intellectual strengths invited that. On the day of his arrival someone had given him a copy of John Tyndall's new work on sound, and he learned that MIT had a complete set of Helmholtz's apparatuses. In 1872, at a Michigan convention of deaf-school principals, he delivered a paper in which he described speech scientifically as a "mere motion of the air," a series of undulations. That October he heard Tyndall lecture in Boston on the "undulatory theory" of light propagation.

During the same month the newspaper in which Bell advertised his speech lessons reported that Western Union had paid handsomely for rights to another Boston inventor's "duplex telegraph," which by an ingenious arrangement of circuits could transmit a message in each direction simultaneously over a single wire. That was probably what turned Bell's mind back to his London concept of a multiple telegraph on the quite different plan of superimposed frequencies. Bell began working feverishly, experimenting by night while teaching by day, thus confirming his lifelong night-owl habits.

Then, in the spring of 1874, a well-received lecture he gave at MIT on speech training for the deaf brought Bell an invitation to use the institute's apparatuses and laboratories. This turned him from telegraphy to acoustics. One device especially caught his eye because it made speech "visible." Called a "phonautograph," it had a diaphragm with an attached bristle that, while vibrating in response to a vocal sound, traced an undulating curve on a strip of smoked glass being drawn past it.

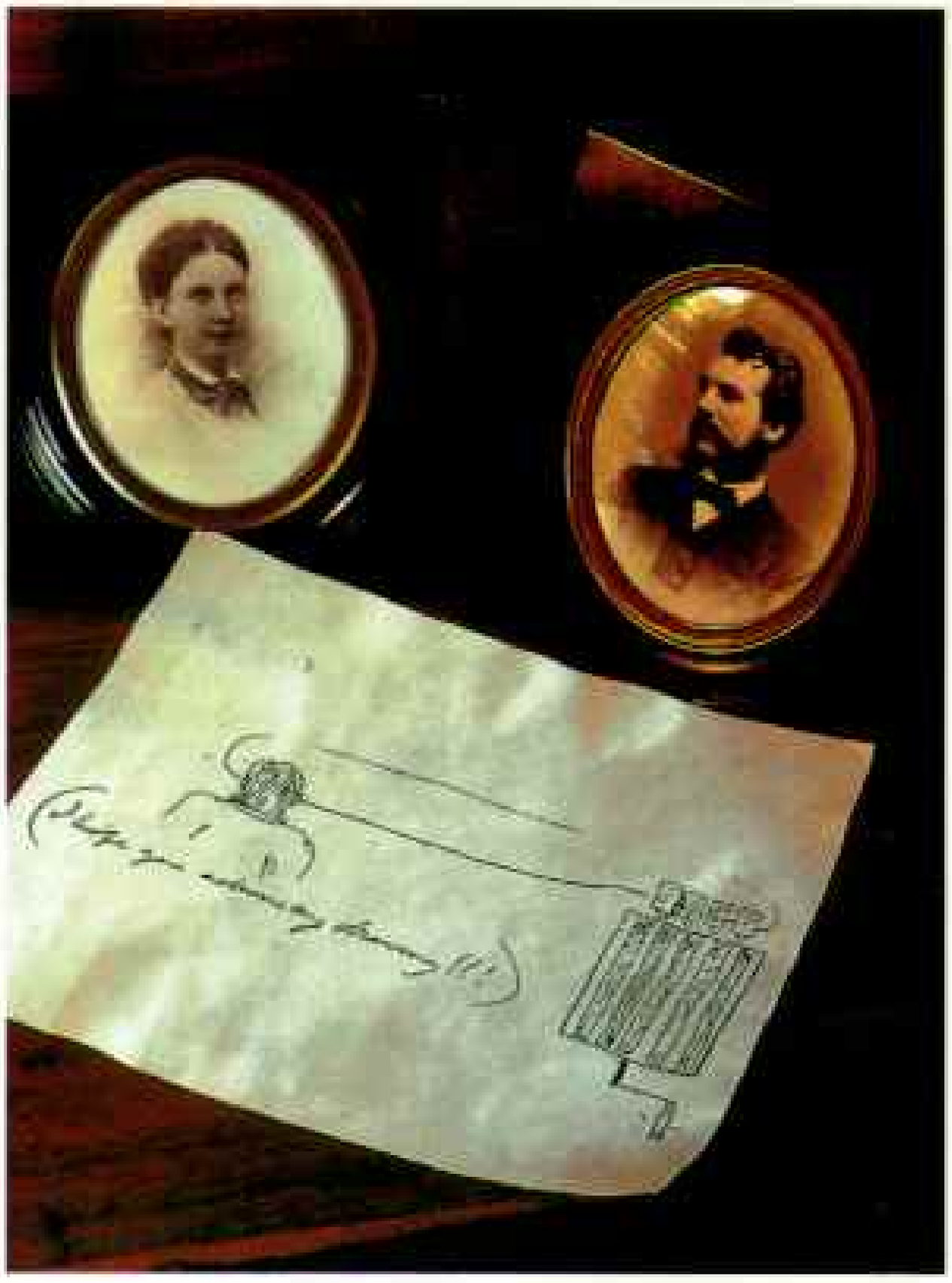
That summer, at the "dreaming place" on the Brantford bluff, watching the Grand River meander sinuously far below, Bell let a kaleidoscope of miscellaneous notions swirl about in his mind. Complex sound vibrations, conveyed through a single point by the phonautograph diaphragm and expressed as a wavy line. The surprising power of sound

A confirmed night owl, Bell often worked till 4 a.m. in the quiet study of his home in Washington, D. C., then slept until 11 a.m. Though he owned many telephones, he tolerated none in his study. His wife, Mabel, who cherished their time together, found his hours hard to accept. "Our worst quarrels have always been about that," she confided to her diary. Yet Bell could not change: "To take night from me is to

I wonder do you ever think of me
in the midst of that rush of yours
of which I am so proud & yet so
jealous. for I know it has stolen
from me part of my husband's heart

rob me of life." The two fell in love while Mabel was one of his deaf pupils. They married in 1877, about the time these portraits were made. A sketch from the same period shows Bell's preoccupation with electricity and sound. He used his first income from lectures on the telephone to have this small silver model made for Mabel. Their deep affection shows in their letters, passages of which appear below.

GROSVENOR COLLECTION, LIBRARY OF CONGRESS



I want to show you that I really can be a good husband and a good father — or shall be a solitary selfish Thinker. I want to take care of you — and think for you and help you — as you have helped me and thought for me and I want let stumbling-stones or anything else come between us.

waves to move small bones in the ear. Complex undulatory electrical currents, generated by the vibration of a magnetized reed and passing over a single wire. Piano strings echoing a voice. Suddenly the jumble fused into a great insight: the fundamental principle of the telephone.

His magnificently simple inspiration depended on no scientific discovery or natural phenomenon that had not been well-known for nearly half a century. Why had no one thought of it before Bell did? Many an expert on electricity (and on electricity alone) asked himself that question when he heard of it. Bell's fellow native of Edinburgh, the great physicist James Clerk Maxwell, had an answer. "I consider the telephone," said Maxwell in his last public lecture, "as a material symbol of the widely separated departments of human knowledge, the cultivation of which has led, by as many converging paths, to the invention of this instrument by Professor Graham Bell." The electrical experts had put all their eggs in one basket and watched only that basket. Committed to the telegraph, they could not stand back far enough to see the promise of a radically different approach to communication. Even if they had seen it, their electrical expertise would have suggested more technical barriers than openings.

In going on to make the telephone a reality, Bell drew on Boston's varied resources. Boston scientists and technologists assured him that his idea was theoretically sound (fortunately one of them kept dated notes of their discussion in October 1874). The shop of Charles Williams, Jr., was a center of custom work for electrical inventors (young Tom Edison had frequented it not long before), and there Bell engaged the skills of 20-year-old Tom Watson to help in experimental work. In March 1876 Watson clinched his place in history as the first to answer a telephone call. Financing came from two Yankee businessmen, Gardiner Greene Hubbard and Thomas Sanders, each of whom had a deaf child under Bell's tutelage.

Bell had fallen in love with one of those pupils, 17-year-old Mabel Hubbard. During the summer and fall of 1875, in the spirit of folktales and Victorian romances, he won the promise of her hand over her parents' opposition (the Hubbards had thought her too young to make such a decision). In due course they would marry and live happily ever after. But the courtship delayed the framing and filing of his telephone patent. So did his Boston University classes and private pupils, and likewise his insistence on waiting for word about his application for a British patent. "I rush from one thing to another and before I know it the day has gone!" he wrote his parents. Finally Gardiner Hubbard lost patience and took it upon himself to file the patent application on February 14, 1876.

FOR A FEW YEARS Bell accepted the nominal role of technical adviser to the telephone company. Even so, true to his temperament, he refused all along to be bound to that or any other single line of work, including his university position. To him the financial independence (though not a great fortune) that the telephone gave him meant instead that he could yield happily to his bent for variety.

And yield he did for the more than four decades left to him. He kept on inventing. After a long honeymoon in England and Scotland, he and his wife settled near her parents in Washington, D. C., where he set up his own laboratory. Impressed by Thomas Edison's Menlo Park "invention factory," he tried to replicate it on a small scale. But his approach to invention was different. Edison tended to identify a commercial need and then look for a way to meet it. Bell was more likely to be struck by a physical phenomenon and then look for a way to use it.

In 1873, for example, the element selenium had been found to have a strange property: Its electrical conductivity increased with the intensity of the light that fell on it. Intrigued by the effect, Bell saw that if a light could be varied in intensity by the sound of a voice, the light could be beamed over a distance to affect selenium as the variable-resistance element in a telephone transmitter. Thus speech could be transmitted without wires.

With the help of a young technician named Sumner Tainter, whom he hired as the equivalent of Tom Watson, Bell produced his "photophone" in 1880. Until the end of his life Bell insisted that it was "the greatest invention I have ever made; greater than the telephone," perhaps because he hated to admit that his career as inventor had peaked when he was 29. But the photophone had a range of only a few hundred feet, and then only if there were no fog, rain, snow, smoke,

or intervening obstacles to obscure its beam. So it had no commercial value.

In 1881 Bell did, like Edison, invent for a practical purpose. President James A. Garfield lay slowly dying from the wound of an assassin's bullet that surgeons could not locate. Working nearly around the clock, Bell came up with two devices to help out. One was an adaptation of the induction balance, which worked like a present-day mine detector by changing a telephone tone when it passed over metal. The other was a telephonic probe, combining a needle with a telephone receiver so as to produce an audible click when it touched metal. But the bullet was too deep for the induction balance to detect, and the surgeons chose not to try the probe, though afterward it was much used until X rays supplanted it. So Garfield—"that brave spirit," as Bell said of the President—died.

In that same sad summer the Bells' newborn son died from respiratory failure. His grief spurred Bell to invent a "vacuum jacket," an airtight iron cylinder surrounding a patient's torso up to the neck and, fitted to that, a pump that could rhythmically raise and lower air pressure inside, thus compressing and expanding the lungs. The device anticipated the iron lung developed five decades later for polio victims.

IN THE EARLY 1880s Bell turned the tables on Edison. A few years before, Edison had leapfrogged Bell by inventing the carbon-button transmitter, which made the telephone more effective. Bell now took up Edison's phonograph, which Edison had let remain a laboratory toy, its recordings short, poor in quality, good for only a few plays, and not adaptable for mass duplication. In improving the phonograph, Bell was more the manager of his team than an active player. He relied chiefly on his cousin Chichester Bell and Sumner Tainter. The team's patents helped make the phonograph commercially viable and brought them several hundred thousand dollars. Bell used his share to endow research on deafness.

Bell continued to lead a busy life, but for a few years invention took a backseat to other activities. One of them, in the late 1880s, was the creating of a northern Eden, a summer

GROSVENOR COLLECTION, LIBRARY OF CONGRESS

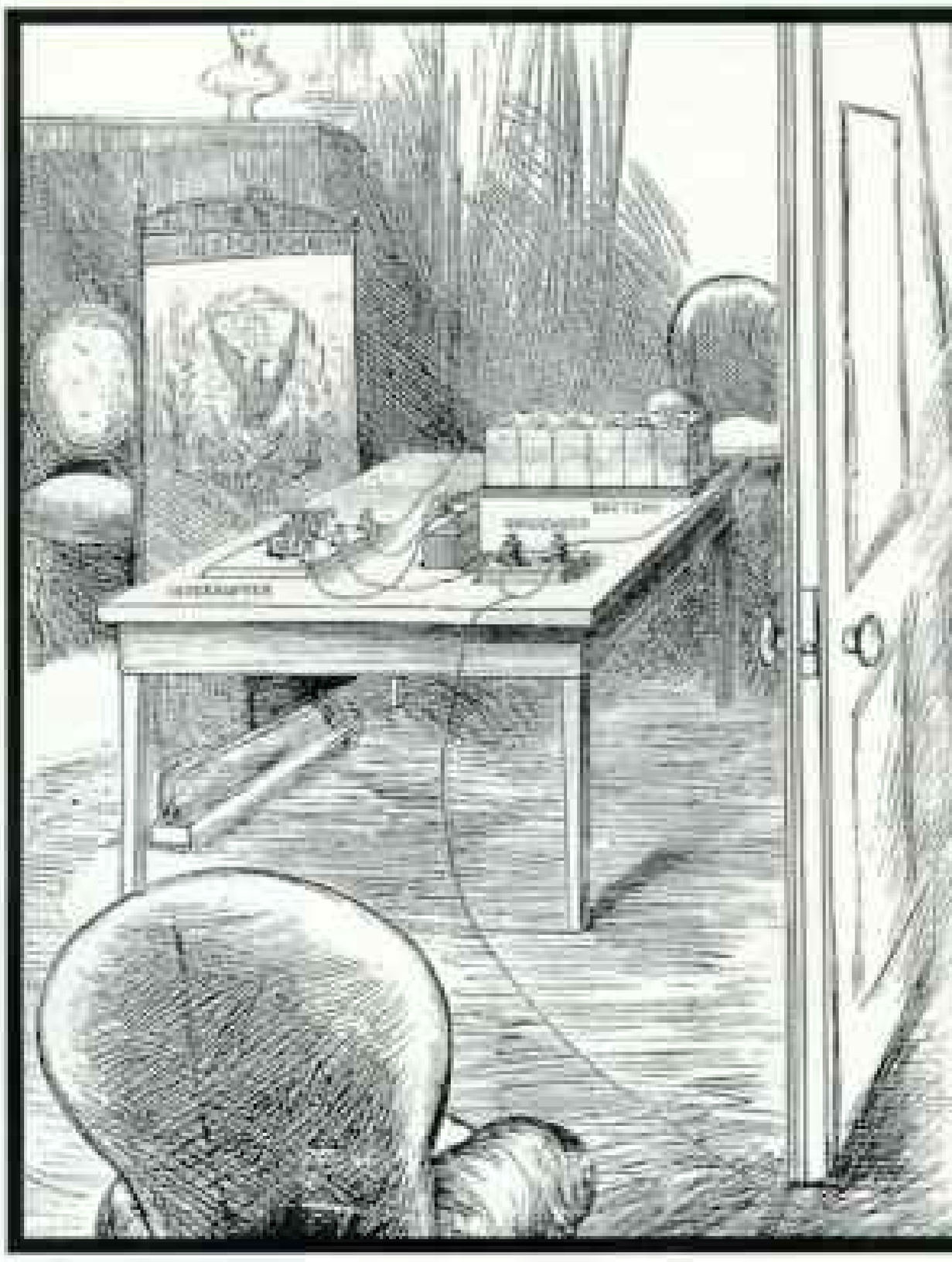
"Such a quiet ordinary family. . . . so quiet-mannered and self-restrained," Mabel described her husband and daughters Elsie, at left, and Marian (Daisy) in 1884. To escape Washington formality and hot summers, the Bells purchased a homesite in Nova Scotia.

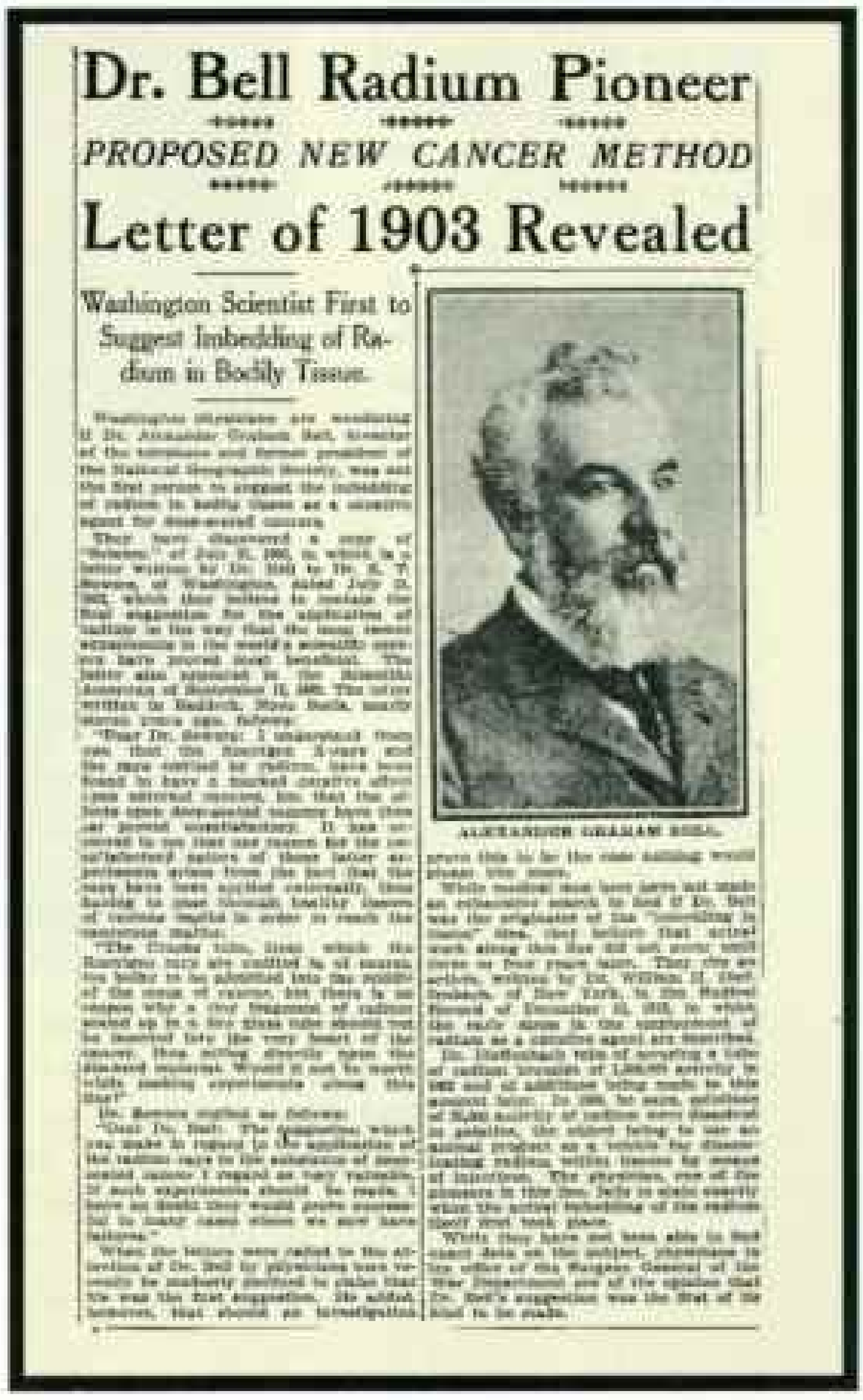
retreat near Baddeck, Nova Scotia, to which he gave the Gaelic name Beinn Bhreagh (pronounced Ben VREE-ah), meaning "beautiful mountain." Though he had become a United States citizen, he was soon dividing his year between Beinn Bhreagh and Washington.

BY THEN, as he entered his 40s, Bell's mien had grown appropriately baronial. Soon after inventing the telephone he had begun to put on weight, an accepted—indeed, expected—mark of Victorian success. From the slender, dark-haired suitor of Mabel Hubbard, Alec (as she spelled it) became her stout, prematurely graying husband. On their honeymoon he had grown a connective copse of whiskers between his sideburns and now rivaled the physical presence of his uncle David Bell, whom George Bernard Shaw once characterized as "by far the most majestic and imposing looking man that ever lived on this or any other planet."

Alec and Mabel made a striking couple. With a heritage of Yankee leanness, she remained slim and graceful all her life, the picture of elegance on formal occasions. Her startling facility in speechreading helped her feel at ease in such gatherings and bring her sometimes reserved husband into more social contacts. They leaned on each other. "Deaf-mutes, gravitation or any other hobby has been too apt to take the first place in my thoughts," he wrote her once, "and yet . . . you have grown into my heart, my darling, and taken root there, and you cannot be plucked out without tearing it to pieces." They needed that mutual support when their two sons died in infancy, losses that haunted them throughout their later lives.

But their daughters, Elsie and Marian (known to the family as Daisy), both destined to long life, not only gave them comfort and joy but also, in time, a growing clan of descendants. Seven children were born to Elsie and her husband, Gilbert H. Grosvenor, including Melville Bell Grosvenor, in youth a lively companion for his grandfather and in maturity his father's successor at the helm of the NATIONAL GEOGRAPHIC magazine. Daisy and her husband, the noted botanist David Fairchild, added three more to the roster of Bell descendants. With all these, as well as the Bells' parents and other relatives by blood or marriage, there were times when the big house





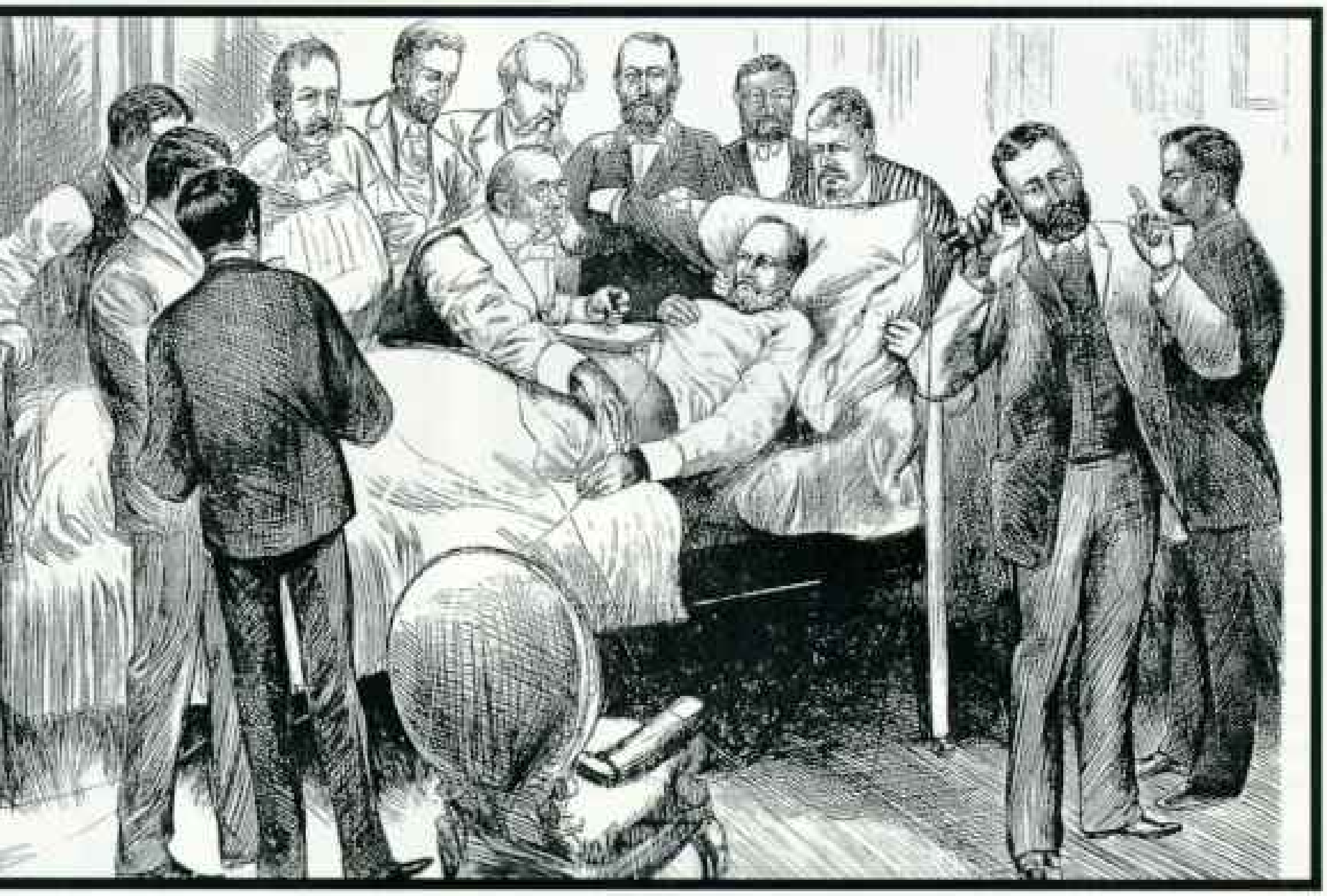
Dr. Bell Radium Pioneer

PROPOSED NEW CANCER METHOD

Letter of 1903 Revealed

Washington Scientist First to Suggest Imbedding of Radium in Bodily Tissue.

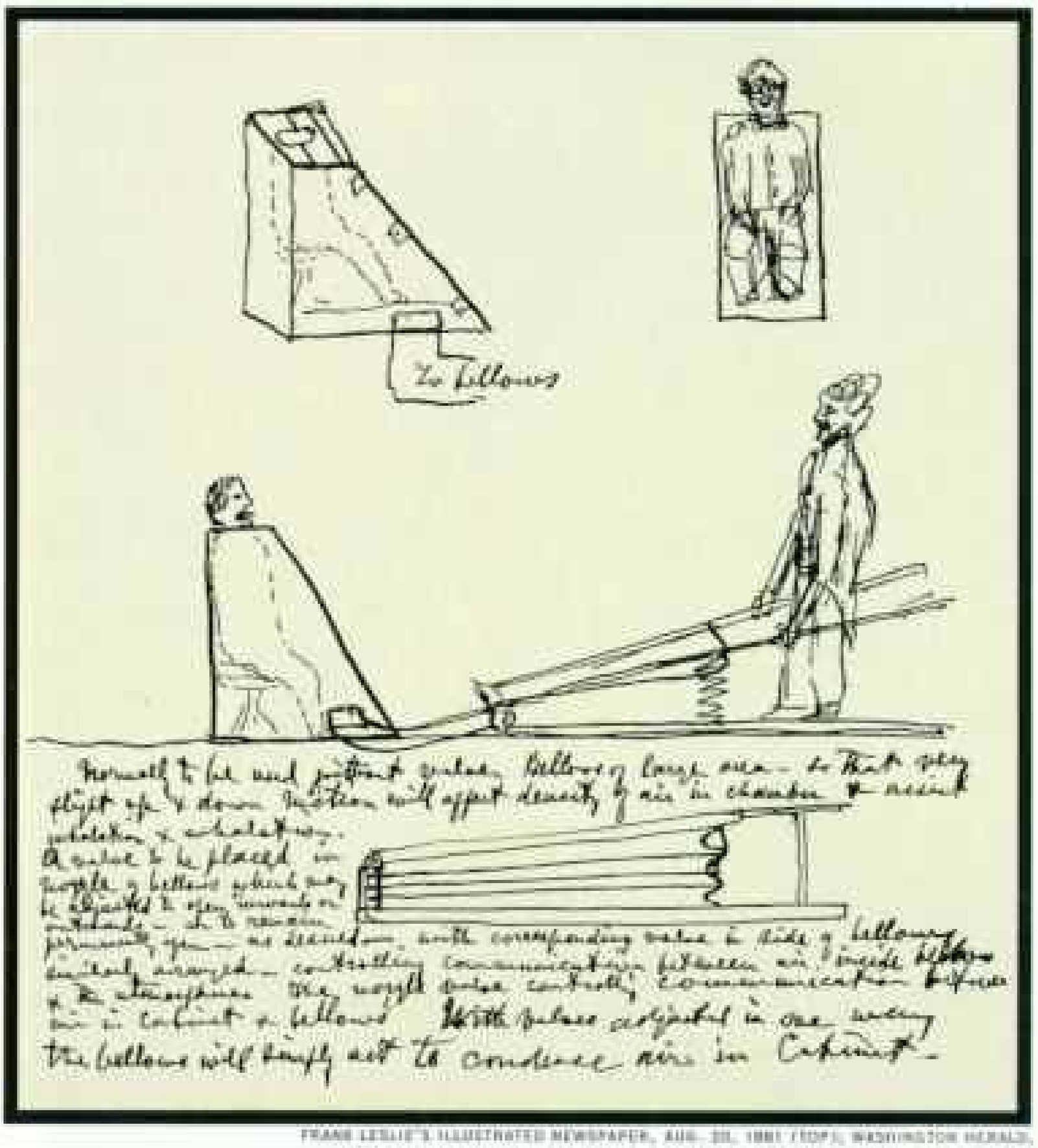
ALEXANDER GRAHAM BELL.



After an assassin's bullet lodged in President James A. Garfield's abdomen on July 2, 1881, Bell developed a metal detector. Tested on August 1, the device could not pinpoint the deeply implanted bullet. Garfield died within weeks of infection and a ruptured aneurysm, both likely from doctors' probing fingers. A telephonic probe Bell invented was later successfully used for decades to locate bullets.

That summer Bell's newborn son died from respiratory problems. The grief-stricken father invented a "vacuum jacket," forerunner of the iron lung, which might have saved his son.

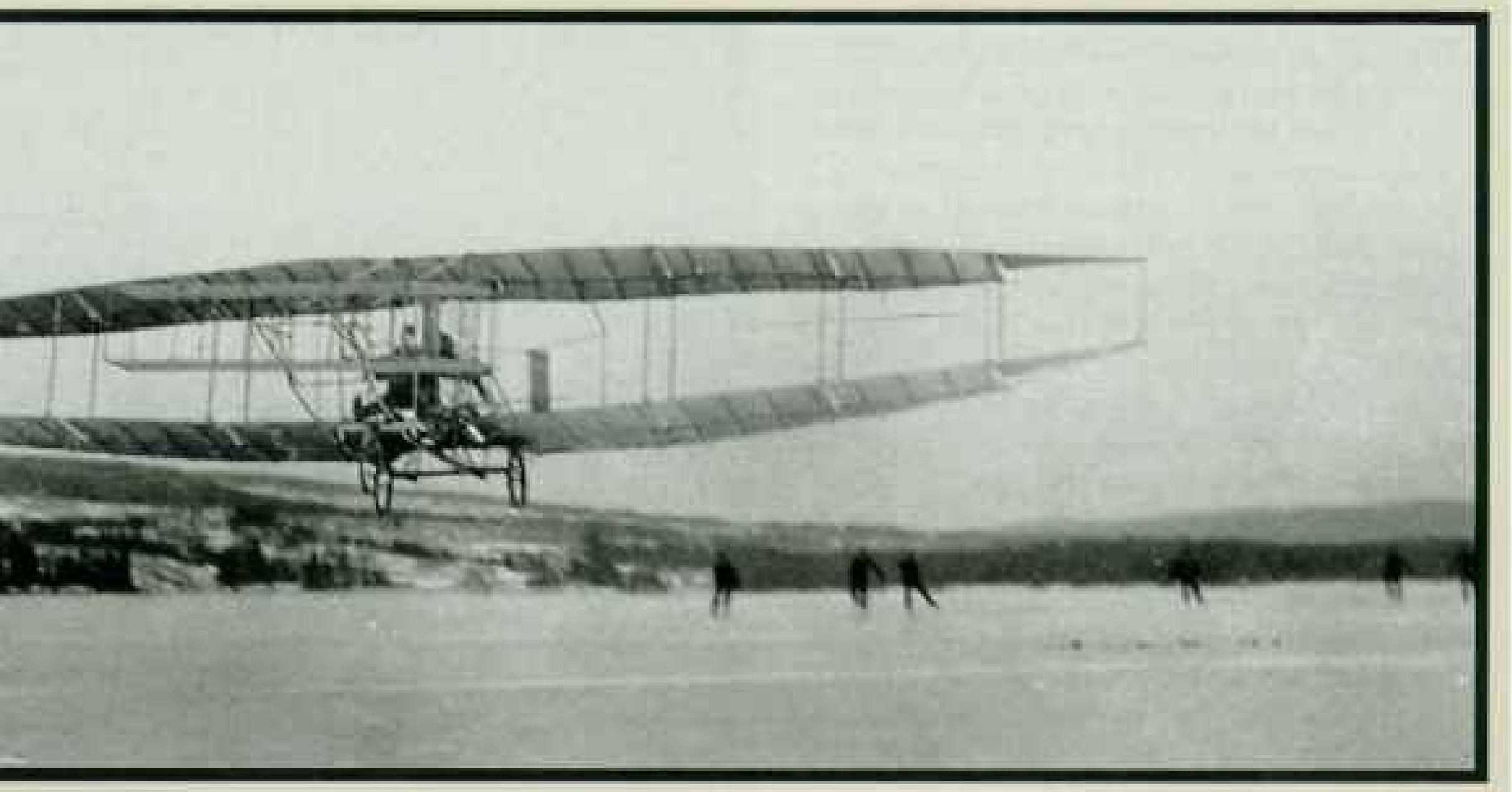
Bell was first to publish the idea of treating deep-seated cancers with radium; unknown to him, a French doctor had used it a few months earlier.



FRANK LESLIE'S ILLUSTRATED NEWSPAPER, AUG. 20, 1881 (TOP); WASHINGTON HERALD, FEBRUARY 24, 1914 (LEFT); ALL GRIDIRONON COLLECTION, LIBRARY OF CONGRESS

GLENN CURTISS, DOUGLAS McCURDY, BELL, FREDERICK BALDWIN, THOMAS SELFRIDGE

Lightweight but strong, the tetrahedron was the subject of countless experiments at Bell's Nova Scotia home. His 70-foot observation tower of 260 tetrahedral cells demonstrated the form's stability. Bell tested tetrahedral kites, seeking landings as gentle as a butterfly's. The Aerial Experiment Association (above) was formed in 1907 to build a flying machine of each member's design. In 1909 Douglas McCurdy's Silver Dart flew half a mile at 40 mph, the first airplane flight in Canada.



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Hydrofoil designs had been tested by Bell and Frederick "Casey" Baldwin for years when the U. S. Navy needed submarine chasers during World War I. Bell's offer of two hydrofoils was declined, but the Navy later lent him two 350-horsepower Liberty engines that sped HD-4 to a world marine record of 70.86 mph in 1919. Bell watched from shore.

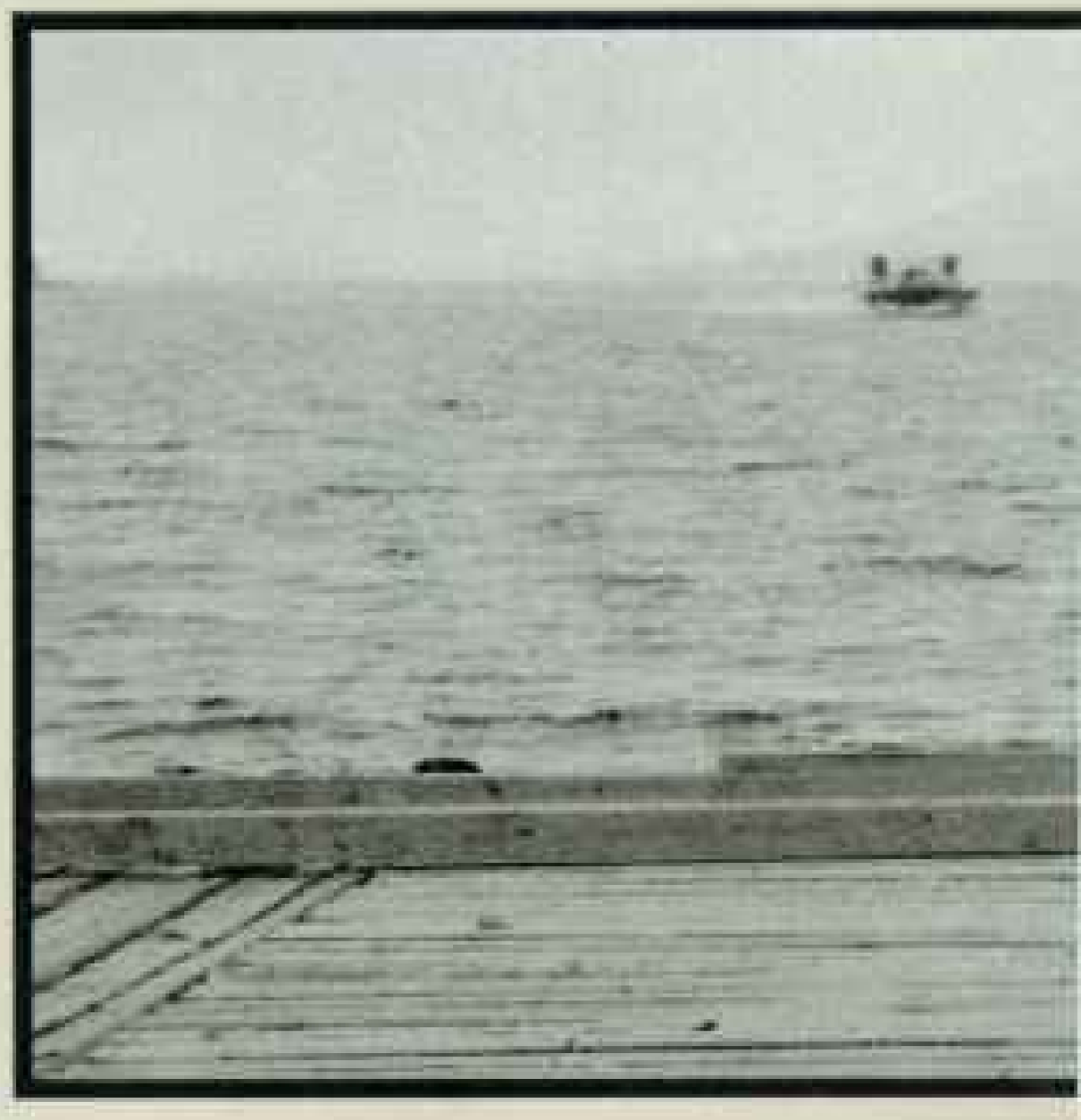
at Beinn Bhreagh had to accommodate as many as 25 besides the servants. Such occasions helped draw the host from his shell. Mabel's sister noted that he "is quite a different person here from what he is in Washington. Here he is the life and soul of the party."

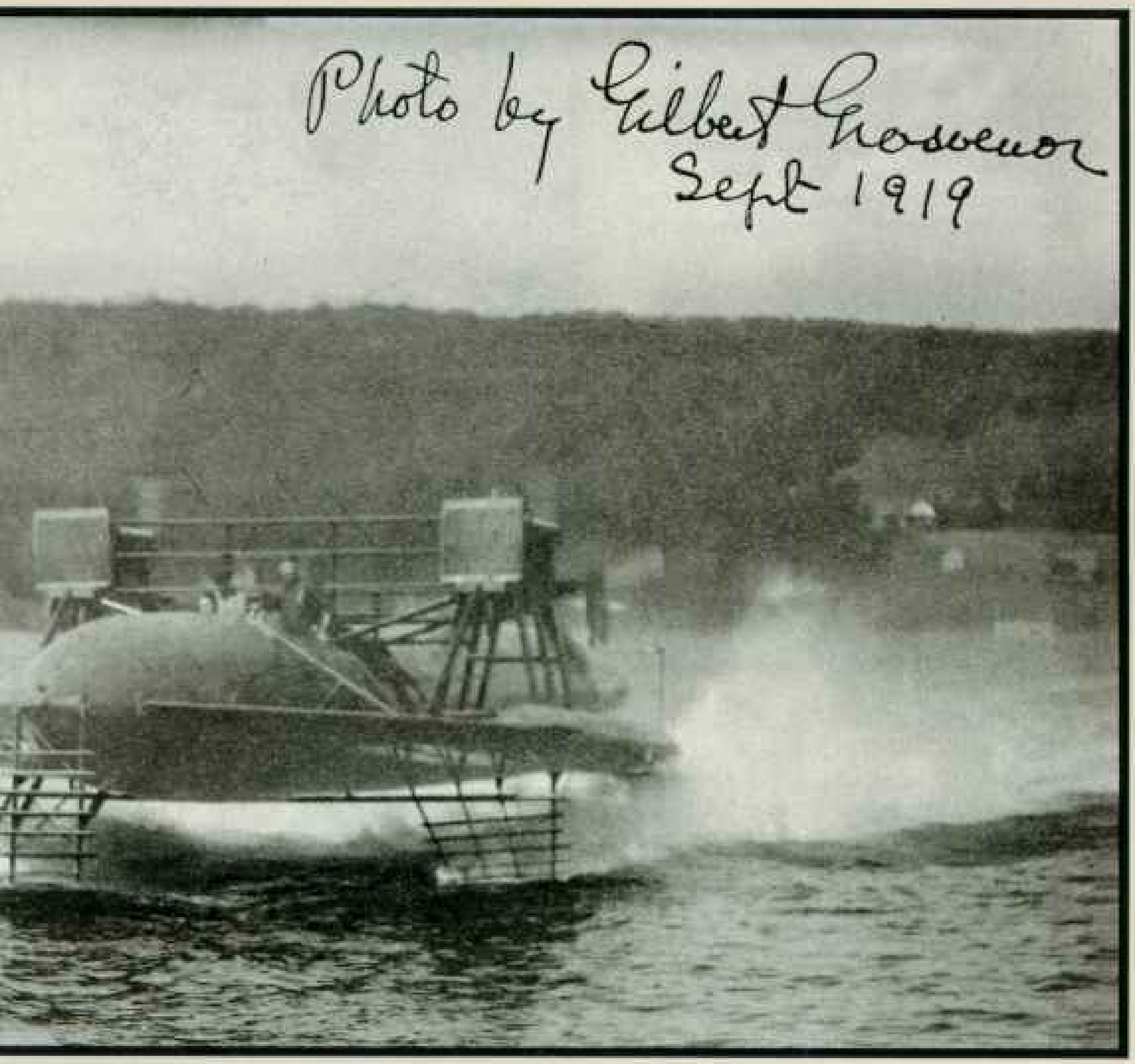
This is not to say that Bell was ever crusty, even in Washington. "I never felt at ease with anyone until I met him," recalled Annie Sullivan, Helen Keller's beloved teacher. "Bell had a happy way of making people feel pleased with themselves . . . of bringing out the best that was in them."

Still he often yielded to his inner reserve. Even at Beinn Bhreagh he spent weekends alone in an unpretentious sanctum, a houseboat beached in a secluded cove. And throughout his life he found congenial solitude in reflection and study through the wee hours while all the rest of the household slept.

IN NOVA SCOTIA the amplitude of Bell's acreage opened a new field for his inventive instincts when they revived in 1891. The wonder of flight had long possessed him. Now he had space to try his wings. For a few years he puttered with gunpowder rockets for propulsion, with pinwheel helicopter rotors, with spring-powered models, with little monoplanes. "The more I experiment," he wrote in 1893, "the more convinced I become that flying machines are practical." With characteristic enthusiasm he told a reporter in 1896, "I believe that it will be possible in a very few years for a person to take his dinner in New York at 7 or 8 o'clock in the evening and eat his breakfast in either Ireland or England the following morning."

Then in 1898 he started up the blind alley of kite flying as a way to experiment on equilibrium and stability. It led him to his last notable inspiration in technology, one that like the telephone was an unexpected offshoot dwarfing the fruitless main stem of his research.





BOTH GROSVENOR COLLECTION, LIBRARY OF CONGRESS

Beinn Bhreagh, Gaelic for "beautiful mountain," was the name Bell gave his summer retreat near Baddeck, Nova Scotia, where in 1893 he built this large home with panoramic views of Bras d'Or Lake. Here he was "quite a different person" from the Washington Bell, a visitor noted, "the life and soul of the party."

He had taken up the lately invented Hargrave, or box, kite and expanded it into huge kites of several boxlike cells. Seeking a frame as strong and yet as light as possible, he began combining and arranging triangles, which unlike rectangular elements needed no internal bracing.

Then on August 25, 1902, in a rush of inspiration like that of the telephone conception, he suddenly saw the structural implications of a pyramidal figure with three triangular sides and a triangular base—saw them, in fact, before he was sure of the geometric term for it, tetrahedron.

One of the most remarkable pages in Bell's notebooks is the one of that date in which he sketched the form and added:

"I believe it will prove of importance not only in kite architecture—but in forming all sorts of skeleton frameworks for all sorts of constructing—a new method of architecture. May prove a substitute for arches—and bridge work generally. . . . Whole structure so solid and so perfectly braced by its construction that it may be treated as a solid body. . . . May be used . . . for . . . ceilings of large buildings &c. . . . All the parts can be made of metal —& made cheaply."

This was a clear vision of what later came to be known as space-frame architecture, made famous by Buckminster Fuller. Yet, though Bell patented it, publicized it, and demonstrated it with a light but soaring tower on Beinn Bhreagh, its time had for some reason not come. Many years later it was reinvented independently and widely used.

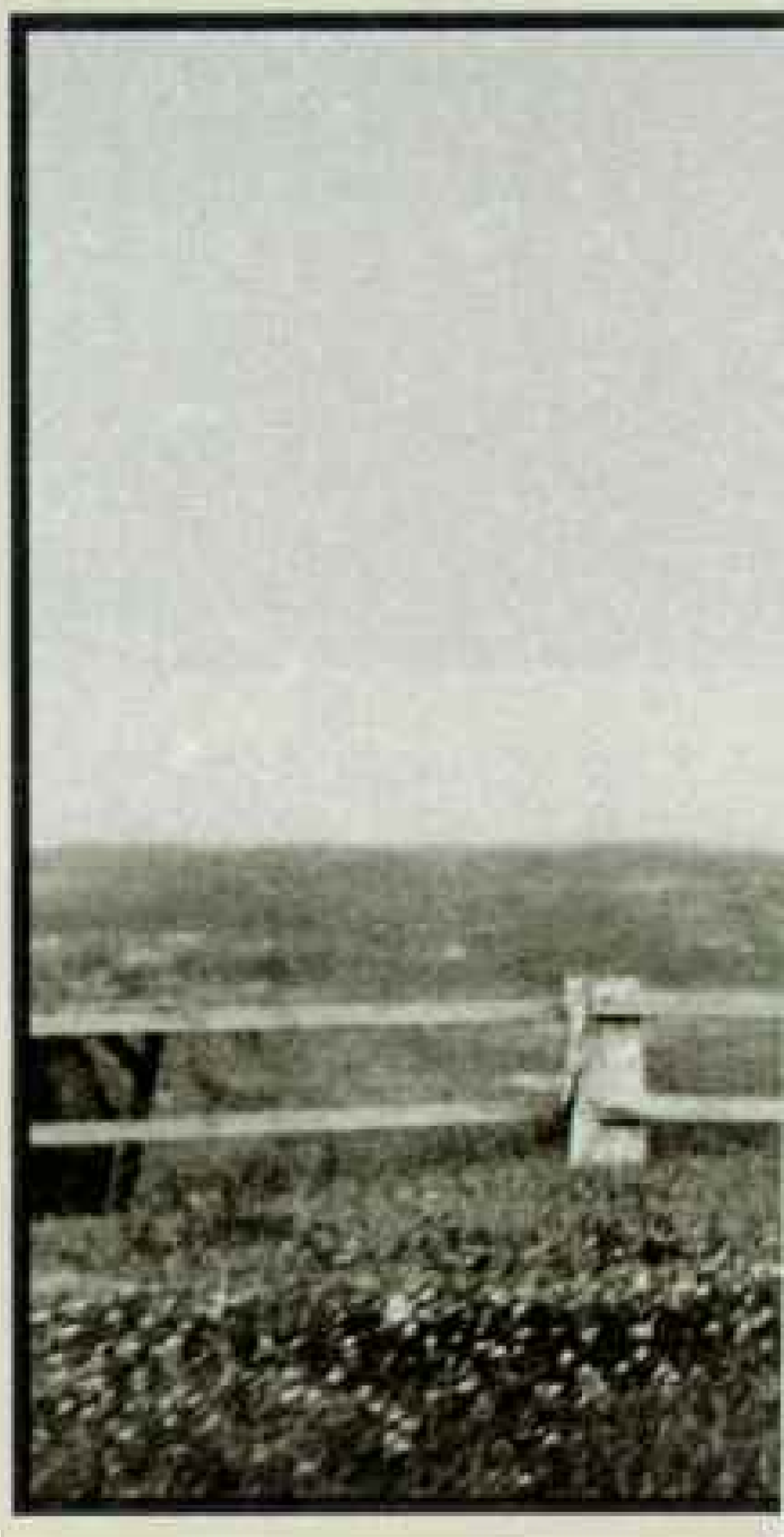
Bell persisted in his quest for flight, engaging as his assistant a young engineer, Frederick "Casey" Baldwin, as a successor to Watson and Tainter. Eventually Bell brought together a high-spirited group of other young men, including Glenn Curtiss, organized as the Aerial Experiment Association. The Wright brothers had by then risen above their own kite experiments to create a true airplane, and so the AEA built on that, developing several successful machines. Bell himself conceived the important feature known as the aileron, or wing flap, unaware that the French had anticipated him.

In 1908 Bell and Casey Baldwin began a long series of experiments to improve hydrofoil boats, which had lately been introduced in Italy. Baldwin did the designing, while Bell contributed suggestions and critiques. In 1919 their fourth experimental hydrofoil craft—HD-4—set a world marine speed record of 70.86 miles an hour, a record that stood for ten years.

SINCE HIS YOUTH Bell had craved recognition as a scientist. His work in vocal physiology won him some measure of that. For years he also dabbled privately in grand though nebulous theories of gravitation, energy, and other aspects of physics. But like Edison, and indeed most American physicists of that period, he lacked the mathematical sophistication increasingly necessary for theoretical work, and he was realistic enough to refrain from publishing his speculations. He did, however, win the high honor of election to the National Academy of Sciences and contributed five papers to the academy's proceedings, mostly on aspects of heredity. Some other scientific papers grew out of his inventive work.

Bell's most notable scientific work dealt with deafness. He helped apply his telephone as an audiometer for measuring degrees of deafness. His name eventually entered the language in the standard measure of relative differences in sound intensity, the decibel. More fundamental were his studies of inherited propensity to deafness, of which he found some evidence.

Hand in hand through life, the Bells in 1898 visited Sable Island off Nova Scotia (below right), seeking a shipwreck that took their patent attorney's life. On this photo Bell wrote, "Mabel and I think ourselves alone. But photographer [Arthur] McCurdy steals up behind us." Twenty years later (lower left) they discussed hydrofoil tests.



The clan posed (top left) at Beinn Bhreagh in 1907. Daughter Elsie was married to Gilbert H. Grosvenor, editor of NATIONAL GEOGRAPHIC, *at left; Daisy to David Fairchild, a botanist, right. Elsie and her father often enjoyed the ocean while her mother watched. When alone, Bell swam and sunbathed "in puris naturalibus."*

ALL GROSVENOR COLLECTION, LIBRARY OF CONGRESS

Bell's interest in heredity drew him into an early stage of the movement called eugenics, or genetic upgrading of the human race. Fortunately his good sense and innate decency saved him from following that movement to its eventual contamination with racism, of which he was an active foe. He addressed his research instead to the innocuous question of whether long life was hereditary. He concluded that it seemed to run in families, but could not be distinguished clearly from inherited physical stamina or disease resistance.

Bell also left his mark on science as a patron and organizer. In 1881 he financed a major phase of Albert Michelson's classic experiments establishing that direction had no effect on the speed of light. In 1882 he rescued the foundering journal *Science* and helped finance it for nearly a decade. Later the American Association for the Advancement of Science adopted it as its official journal, and it flourishes today as the voice of the world's greatest scientific community. And not least Bell, himself a world traveler, advanced scientific exploration and communication as President of the National Geographic Society and as a shrewd adviser to the Society's magazine, edited by Bell's brilliant son-in-law Gilbert H. Grosvenor.

Despite all his other projects, Bell remained faithful to his lifelong work for and with the deaf. In Scotland he helped launch a public day school for deaf children. Later, in Washington, he opened his own private school for deaf children and conducted it with love, skill, and zeal. He also became a champion, mentor, and longtime friend of the blind and deaf Helen Keller, who dedicated her autobiography to him. When he was past 70, she wrote him, "You have always shown a father's joy in my successes and a father's tenderness when things have not gone right."

"His dominating passion is his love for children," Helen once wrote. He loved to visit classes, and the children loved to see him. During one such visit to a school for the deaf he reported to Mabel, "some of the youngest children . . . somehow got the idea that I was no less an individual than Santa Claus himself! The children were much puzzled to know how so big a body could come down so small a chimney. I taught them the word 'squeeze' so that they will never forget it!!! I'm afraid that half of the school will write to me before Christmas and I shall have to visit the school in appropriate costume!"

Bell gave the cause of the deaf nearly half a million dollars, a sizable share of his income over the years. Some went in small sums to distressed individuals, most to schools and an association for the deaf. More important, Bell gave leadership and the weight of his eminence to the cause as he saw it—to conquer the solitude of deafness in any way possible. He campaigned for public day schools where deaf children could learn without being cut off from their families and the hearing world.

"THE WORLD AND ALL THAT IS IN IT is our theme." That was Alexander Graham Bell's expansive advice to young Gilbert Grosvenor as a newly appointed editor of the NATIONAL GEOGRAPHIC magazine. It perfectly described the mind and spirit of Bell himself. In the last months before his death in 1922, Bell remained true to his nature, working on devices to condense fresh water for those adrift at sea. Encountering the newest household marvel, a radio, and remembering a musical tone he had heard upon sending an intermittent current directly through his ears half a century before, he wondered if somehow one might "hear the radio concert without any special receiver at all." Perhaps he was dreaming of music for Mabel.

So he ended as he began, exploring the world and everything in it, captivated by its multiplicity of possibilities. However many blind alleys it led him into, Bell's passion for miscellany also brought him to insights and humanitarian achievements, any one of which would have made a lifetime fulfilling for most of us. And even if Bell's lifetime of seeking and helping had brought him nothing else, it would have brought him joy.

There too may lie a moral for our specialized times. □

Sharing a special intimacy, grandson Melville Bell Grosvenor became the son Bell never had. In 1914 Bell wrote his son-in-law from Beinn Bhreagh that the boy was "a great comfort to me here and quite a companion." He "has developed his GREAT AMBITION IN LIFE, which is to be an editor like his father." Melville succeeded, carrying on the Bell legacy to explore "THE WORLD AND ALL THAT IS IN IT."

GROSVENOR COLLECTION, LIBRARY OF CONGRESS

COMMANDER ROBERT E. PEARY

Did He Reach the Pole?

The discovery of the North Pole gripped the imagination of the first generation of NATIONAL GEOGRAPHIC readers as the first manned flight to the moon gripped ours. But man's first step on the moon was a television media event witnessed by millions. Comdr. Robert E. Peary's attainment of the North Pole rests on the word of one man: Peary himself.

Through 75 years the sole records upon which Peary based his claim that his team reached 90° N on April 6, 1909—his expedition diary, astronomical observations, and private notes—have kept their silence, locked away from public scrutiny. Finally, a television docudrama that credited Dr. Frederick A. Cook with the North Pole's discovery led the Peary family to release these historic documents—preserved in the National Archives—so that they might speak in Peary's defense and silence his critics.

To assess these records, your Society turned to veteran explorer Wally Herbert, whose 13 years of polar experience—much of it with descendants of Inuit, or Eskimos, with whom Peary lived—matches Peary's as no other man's. In 1968-69 Herbert led the British expedition that achieved the first surface crossing of the Arctic Ocean, a 16-month, 3,800-nautical-mile journey by dogsled from Alaska to Spitsbergen via the North Pole, which he reached on the 60th anniversary of the day Peary claimed to have reached that same desolate spot.

Since Peary's dash to the Pole and back, many have trekked to that point amid a frozen waste of drifting pack ice; submarines cruise beneath it, airliners fly over it, small planes land there. Knowledge of Arctic Ocean weather, currents, ice drift, and navigation has grown by quantum leaps. Herbert draws on this information, as well as personal experience, to analyze all available records and present his conclusions.

Herbert paints an absorbing portrait of the man behind the heroic mold of explorer, the women who shared his joys and anguish, and the cruel destructiveness of pride and blind obsession. Still, Peary compels admiration for his dedication, courage, endurance, and persistence in one of the most stirring epics in exploration.

—THE EDITOR

SENSING "WILD, FIERCE POETRY AND GRANDEUR IN THE WORK," ROBERT EDWIN PEARY SPENT MUCH OF HIS LIFE IN QUEST OF THE NORTH POLE. HE STAKED HIS FLAG AND REPUTATION ON THIS SPOT AND PHOTOGRAPHED HIS TEAM: OOQUEAH, OOTAH, MATTHEW HENSON, EGINGWAH, AND SEEGLOO. ROBERT E. PEARY COLLECTION (LEFT); NATIONAL ARCHIVES (ABOVE)

By
WALLY HERBERT

"The attainment of the North Pole is, in my opinion, our manifest privilege and duty."

—ROBERT E. PEARY

THE NORTH POLE DIARY of Robert E. Peary for the months of March and April 1909—that hitherto strictly private view of the thoughts of one of the world's most determined explorers—was now mine to peruse. Small wonder that as a fellow polar explorer, I felt excitement as I signed in at the National Archives on Pennsylvania Avenue in Washington, D. C.

Alison Wilson welcomed me warmly in the homey clutter of her "polar" office and fetched the diary I could scarcely believe existed. But there it was—smaller than I had imagined (less than four inches by seven)—together with other documents in its gray storage box. With more reverence than I can recall ever having handled an object before, I took it out, removed its protective wallet, and held the diary. Here at last was the handwritten log of that crowning journey of Peary's career, out to the limit of human endurance and miraculously back, to reap the rewards of worldwide acclaim.

The diary, at first look, was absolutely compelling. *If*, as Peary claimed, each entry was written on or within a day or so of the events he recorded, this record must be true.

Then it dawned on me that I had fallen into a trap. Through admiration for him as a polar explorer, and from that mysterious relationship I sensed because of many shared experiences, I had become emotionally involved. Indeed, who would not be gripped by his courage and single-mindedness!

Where did doubts creep in? Those blank pages at the Pole. I had turned to this part in search of Peary's entry for the sixth of April—that date so fateful, so memorable. I came upon one headed "Thursday, April 8," then had to turn back past four blank pages before finding one headed "Wednesday, April 7"—his second day at the Pole. This also was blank. The pages before it, his entry for April 6, made no mention of the Pole. Instead, a loose leaf had been inserted: "The Pole at last!!! The prize of 3 centuries, my dream & ambition for 23 years. *Mine* at last. I cannot bring myself to realize it. It all seems so simple & common place. . . ."

When did Peary write that note, and why is it on a separate piece of paper? If, as Peary says in his book *The North Pole*, he wrote it "after awaking" the afternoon of April 6, then one would expect it to appear right on the diary page for that date. But it does not.

Dismayed that his diary offered absolutely no record of Peary's activities during the 30 hours he and his companions spent in the vicinity of the North Pole, I then stumbled upon another mystery. On the cover, in his own hand, there is a surprisingly incomplete inscription: "No. 1, Roosevelt to ____ & Return, Feb. 22 to Apr. 27, 1909, R. E. Peary, U.S.N." He gives the date of his return to land, crosses it out, and puts his return to the ship. Why did he not insert "North Pole," those two words that spelled out his very reason for living?

Shocked by these revelations, I now determined to read right through—to let the diary speak for itself. And "speak" to me it did. It spoke of a hazardous journey, one of the most amazing ever made by man. It spoke of incredible courage and of the passionate need of some men to succeed. But it was a tale told in two voices: The voice of a man whose greatest fear throughout his life was failure, and the stronger voice of the human spirit—that inner voice that urges us all to take that step with destiny.

It spoke with the ring of truth. Yet despite my respect—which

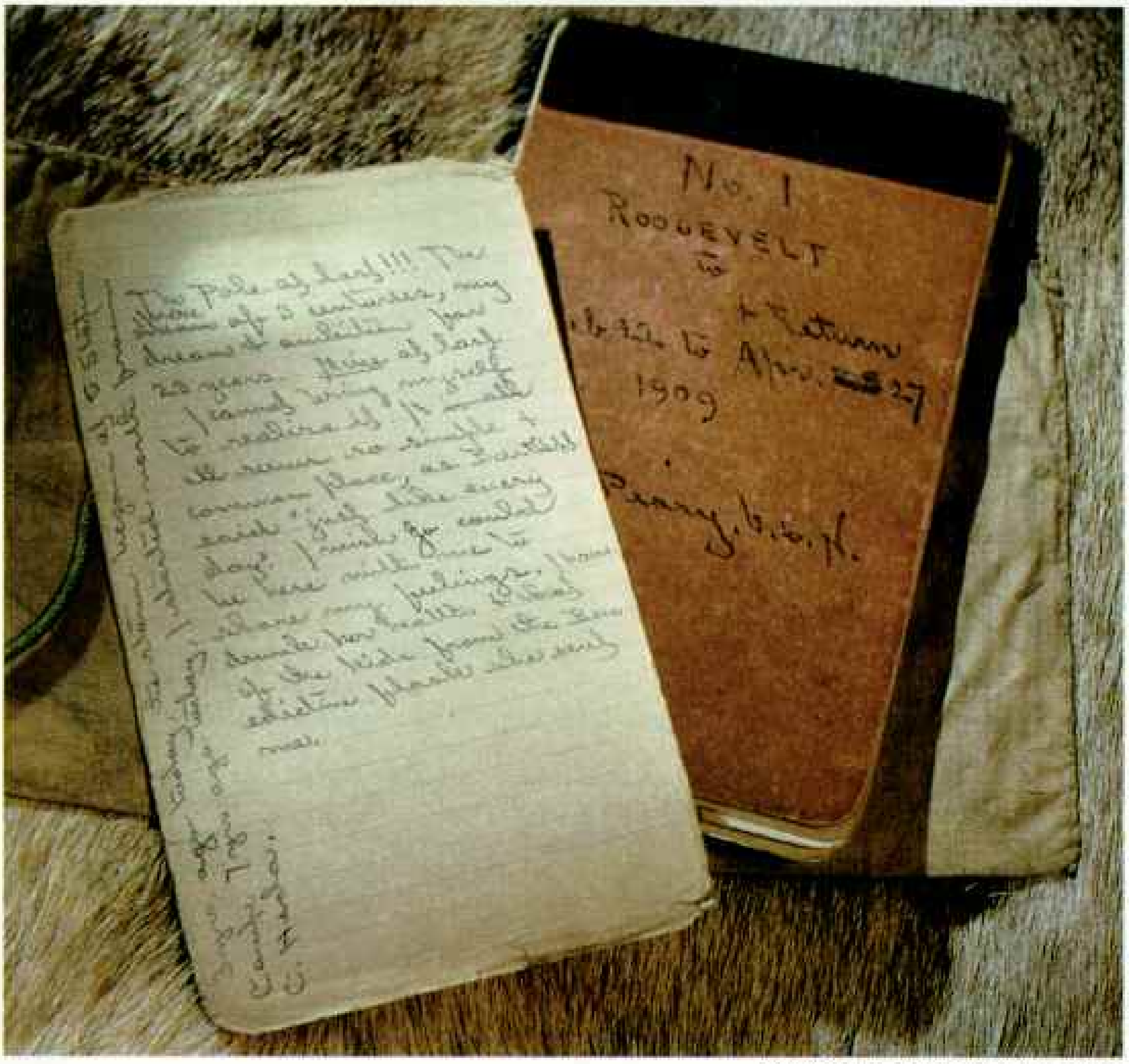
demanded I should accept his word—I found the diary disturbing.

Blank pages, an inserted leaf, an incomplete cover title? Sadly, there were other doubts, some newfound, others long held, which a study of the diary only increased. For example, the question, raised by Peary's critics, concerning the sudden increase in speed after the last of his "reliable" witnesses had turned back—circumstances remarkably similar to his 1906 attempt at the Pole. And Peary's astonishingly slack navigation.

After closing the cover on that private world of Peary's diary, I realized that to present a balanced assessment of his claim I must delve far deeper: compare diary entries with Peary's published accounts and those of his companions; study the congressional "Peary Hearings"; extract every detail on weather and ice conditions, drift and detours that affected his course and sites of his camps. To understand Peary himself, what he achieved and the way he achieved it, took me into personal letters and journals among the 225 cubic feet of Peary papers also in the National Archives.

The central issue—did Peary reach the North Pole or not; did he, in fact, tell the truth—seems straight enough. But I would find no simple

"I HAVE GOT THE NORTH POLE out of my system," Robert Peary wrote in his diary as he returned to his ship, Roosevelt. But why is his triumphant entry written on a separate piece of paper? Why are crucial pages blank? Why is his destination omitted from the cover? The diary seems an imprecise and incomplete record for a man convinced that he had "won the last great geographical prize."



NATIONAL ARCHIVES; PHOTOGRAPHED BY DIXIE BRIDGES

yes or no, for the story of Peary's last expedition exposes a far more human conflict and a far more human hero than previously realized.

WHEN did that dream of the Pole evolve? Peary's "feeling of fatality," the conviction that he had the "right" to be first to reach it, has led many to assume that his whole life was directed to that end.

The boy born in the modest house of Charles and Mary Peary in Cresson, Pennsylvania, on May 6, 1856, appeared to be blessed with about as much chance of becoming a famous polar explorer as the rest of his humble family. Indeed, even less, for within three years Robert's father was dead, and his frail, melancholy mother poured her love—and in later life, her self-pity—on him.

Raising him, so family stories say, as though he were a girl, she moved with him each time he changed schools—to the dismay of relatives who felt it too restricting, not to say odd, for a student at Bowdoin College in Maine to still live off campus with his mother.

Here the reticent loner, the sensitive naturalist who chose hiking over organized sports, came under the influence of a young professor, George Leonard Vose, who guided the competitive, hardworking student to a degree in civil engineering.

Graduating Phi Beta Kappa, Peary moved with his mother to Fryeburg, Maine, where he turned a profit mounting birds, became a justice of the peace, became engaged to his high-school sweetheart, and seemed on the way to becoming a respected country squire. A chance to expand his horizons came via a post office notice of a competition for draftsman openings with the U. S. Coast and Geodetic Survey in Washington, D. C. Chosen for a six-month trial at a princely ten dollars a week, he lifted himself from trainee to permanent staff, news he welcomed in his diary with "The past is dead. Vive la future!" He had asked his fiancée to "release" him; now he pleaded with his mother to let him go.

Pouring his heart out in a long letter, he tells her how coming to Washington and mixing with striving men had "overmastered" him with ambition. "Here I am 24 years old and what have I done? Nothing." If he stays on, his hard work will earn a pittance, and he will be "known only on the payroll of the department"—while in Nicaragua

"OPPORTUNITIES for a lasting fame" lured Peary to Nicaragua in 1885 and 1887. The U. S. Navy civil engineer won praise for his surveys for an isthmus canal. Arctic adventures began in 1886 when, with a young Dane, he sledged a hundred miles onto the Greenland ice cap.

NATIONAL ARCHIVES

awaits the possibility "laden with glory which shall make the name of its discoverer the equal of any since history began": the route for a ship canal to link Atlantic and Pacific.

"Would it not be just as well to meet the gray old mower in full harness, struggling for a grand object, as on a lingering bed of sickness? . . . And would not my Mother feel a touch of pride in the midst of her sorrow?"

Winning a commission as a civil engineer in the U. S. Navy, he was assigned to A. G. Menocal, an authority on the proposed canal. By the time the 1884 treaty with Nicaragua cleared the political decks, Peary had gained repute as an engineer and the affections of Josephine Diebitsch, daughter of a Smithsonian scholar.

Although Peary's canal surveys earned praise, the project began to drag. Casting about, he saw the Arctic as a strong contender with the swamps of Nicaragua as an arena in which to carve out his name. He had already noted that the fame of Columbus, discoverer of the New World, could be equaled only "by him who shall one day stand with 360 degrees of longitude beneath his motionless foot . . . the discoverer of the North Pole."

In April 1886 he drew respectful attention with a paper he read before the National Academy of Sciences in Washington outlining his forthcoming expedition to Greenland. On that expedition Peary made a brief but hazardous trek onto the ice cap, climbing to 7,525 feet about a hundred miles from the coast, a "greater elevation than ever before reached on the Inland Ice" and "a greater distance than any white man previously" had penetrated.

Of his adventuring Peary wrote home that it meant "first an enduring name and honor, second, certainty of being retained in the Navy . . . third, social advancement. . . . I will make powerful friends with whom I can shape my future. . . . I am not entirely selfish, mother. I want my fame *now* while you too can enjoy it."

When the Maritime Canal Company was formed in April 1887 and Menocal chose him to head the survey, in command of 45 engineers, Peary had a project sure to catch the eye of influential men whose respect he craved.

NEED OF A TROPICAL HELMET and a valet were both taken care of in a Washington store where he met Matthew Henson, one of the most fortuitous meetings in Peary's life. The men became inseparable traveling companions. "I can't get along without him," Peary was to confide years later.

Henson, ten years younger than Peary, was short, wiry, hardworking, intelligent, well-read. Orphaned, he had run away from Washington to Baltimore to find a berth as cabin boy at 13. The ship's skipper, old Captain Childs, had taught him how to read and write ("These books are the beginning. Make them your fists, Matthew"), preparing him for the world.

Henson was crushed with grief when Captain Childs was buried at sea in 1885. The boy had become a seaman, but could no longer make the sea his life. He was prepared to serve another man with the character and courage of his mentor. It took two years, and a stint as store clerk, to find one. Being a valet didn't much appeal to Henson, but going to Nicaragua did. Peary's engineers mapped, leveled, and test-bored the entire route of the proposed canal, from sea to sea.

Feted by Managua's social elite, portrayed as a dynamic field leader in dispatches to the *New York Times* and *New York Herald*, Peary felt, "I am lifting myself. I am writing my name before the world."

But, as with every determined effort that he made in his life from this point on, the full measure of success was denied him. His surveys were approved, the company was granted its charter, work started. Yet in the end the alternative Panama route won the day. Meanwhile, in August 1888 he married Josephine and, with his mother along, went to the New Jersey seashore on his honeymoon.

THE "INDISPENSABLE" Matthew Henson went to Nicaragua as Peary's valet in 1887 and became his most trusted Arctic companion. Admired by the Eskimos for his hunting and sledge-driving prowess, and skill at speaking their language, Henson was, said Peary, "more of an Eskimo than some of them."

FROM *PEARY*, BY WILLIAM HERBERT HOBBS, MACMILLAN & CO., NEW YORK, 1936

For a while Peary devoted himself to his bride: "If he is as happy as I am," Jo wrote to his mother, "then we must be the happiest people in the world." But that yearning for fame would respond to the slightest breeze. His bride must have seen the distress in his eyes when news came that Fridtjof Nansen had made the first crossing of the Greenland ice cap, by the shorter route on which Peary had set his heart. This left him the far more arduous journey, to Greenland's unexplored extreme northeast.

In May 1891, when he was granted 18 months' leave of absence for his first major polar expedition, he was already 35—the age at which most polar explorers reach their peak.

From the launching of that expedition in June 1891 to the bitter end of 11 years of suffering and doubt in August 1902, Peary made three major expeditions to what he came to regard as his territory (northern Greenland and Ellesmere Island), spent seven years and four months in the field, and traveled 9,000 miles with dog teams. A truly impressive performance by the most experienced polar traveler of his day. Yet his most northerly advance was only 82 miles out onto the Arctic Ocean. And despite all that mileage—and some of the cruelest conditions ever experienced—previous explorers had left him only 320 miles of unseen coastline to discover.

Three of his small wintering party, on the first of these expeditions, were to play key roles in Peary's life: Matthew Henson, whose "remarkable ingenuity," intelligence, and loyalty had so impressed Peary during the Nicaraguan survey; Dr. Frederick A. Cook, the surgeon who skillfully set Peary's leg, broken by the ship's iron tiller on the voyage north; and Peary's wife, Jo, who nursed him back to health. Sadly, the trust that developed between Peary and Cook, who shared a life-and-death adventure on the ice cap, was to sour and eventually turn to hatred. So, too, did the relationship between Peary and several other polar companions in years to come. He was a good organizer, but his craving for fame would not permit him to offer others more than a token measure of credit.

On the 1,200-mile crossing over the ice cap into the unknown northeastern region, he cut his safety margin to the bone. Had he and his

sole companion not found musk-oxen to kill and eat, it is unlikely they would have returned to tell of their trek.

With the happy exception of the birth of his daughter Marie Ahnighito (Snow Baby) Peary and the devotion of his brave wife, Jo, the next expedition in 1893-94 was a disaster. Sickness, frostbite, and storms hit them. Peary pushed on — beyond the point of reason — until finally an epidemic that threatened to exterminate his dogs forced him to call a halt, cache his supplies, and turn back.

In 1895 he set off again across Greenland. By the time the suffering party had covered 500 miles, only 11 dogs remained out of 42. Peary raced homeward with the breath of death on his back. He found little comfort when the relief ship brought words intended by his mother to console: "If you have not accomplished all you hoped to, do not be disheartened. . . . *Many* have failed."

Then the dispirited man remembered the meteorites he had discovered earlier near Cape York. Excavating and loading two meteorites on his way south, and later returning to bring out a larger one, gave him trophies to distract the scientific community from his two wasted years. Peary was applauded for solving the mystery of the Eskimos' source of iron and saluted for his ingenuity in getting that 34-ton meteorite onto the ship and safely to New York City.

Peary was now a public figure with an obligation to his backers. No longer could he afford to fail — or at least, no longer be seen to.

THAT "IMPERIAL HIGHWAY" to the North Pole across Greenland had proved a dead end. Peary needed a new route. So for his third and longest expedition (1898-1902) he turned to a plan he had outlined earlier. "Smith Sound is preeminently the American route." Like Hall, Nares, and Greely before him, he would force a ship north in the channel separating Greenland and Ellesmere Island.

Then came a blow. The explorer Otto Sverdrup (who had crossed the Greenland ice cap with Nansen and captained *Fram* during her drift across the Arctic Ocean in 1893-96) would command an expedition in what Peary perceived as "my own domain."

Ice forced both explorers to find winter quarters on the Ellesmere coast a mere 43 miles apart in late August 1898. Peary was incensed at the thought that Sverdrup might take over Greely's old base at Fort Conger, 250 miles north, posing a threat to Peary's North Pole plan. Brushing aside objections that it was the dead of winter, he set out on December 20 with Henson, Dr. T. S. Dedrick, and four Eskimos. After a terrible journey they found the hut on January 6, 1899. There, Peary "was annoyed to find that the toes on both feet were frostbitten." Henson related that when he cut away Peary's sealskin boots, several toes from each foot snapped off at the first joint. For weeks storms trapped them. During "interminable black days" Peary lay on his bunk scratching with a pencil a quotation from Seneca, "*Inveniam viam aut faciam* — I shall find a way or make one."

Back aboard the *Windward* on March 13, Peary underwent "the final amputation" of all but the little toe of each foot. Amazingly, he determined "to push northward, in spite of everything."

This resolution to continue despite his suffering won him support at home, and news of Morris K. Jesup's success in forming the Peary Arctic Club to back him was a tremendous boost. He also learned of the birth of a second daughter, Francine.

WIDOWED when her only child was two years old, Mary Wiley Peary devoted herself to "Bertie" and anguished over his wanderlust. Not knowing she had died, he wrote in 1901 from Ellesmere Island: "Repeatedly I had the most vivid dreams of you. I know you are watching over me."

COURTESY ROBERT E. PEARY, JR.

"The distinctive features of my plan are . . . the adoption of Eskimo methods and costume."

NATIONAL ARCHIVES (ABOVE); ROBERT E. PEARY COLLECTION

CARVING OUT his "own domain," Peary logged more than seven years and 9,000 dogsled miles in northern Greenland and Ellesmere Island between 1891 and 1902. Leading the 1891-92 expedition at 35, he stood overlooking his camp at Godhavn (top left) with, counterclockwise, his wife, Josephine Diebitsch Peary, Matthew Henson, Dr. Frederick Cook, Norwegian Eivind Astrup, and John Verhoeff. "Extremely antagonistic weather" plagued the 1893-95 Greenland expedition, headquartered in Anniversary Lodge (top and above). The march onto the ice cap in spring 1894 (left) ended after only 128 miles. Only one sled dog survived a three-month-long 1895 trek, when Peary made his second crossing of Greenland and proved it to be an island. Frostbite took eight of his toes during the 1898-1902 mission on Ellesmere, from which he made two tries for the Pole.

With pressure eased by word that Sverdrup would move his operations to the west, Peary recruited hunters for the next season, wintered at Etah, on Greenland's northwest coast, and on March 4, 1900, set out for Fort Conger. For the first time he was in a strong position to attempt the Pole via Cape Hecla on Ellesmere.

Fear of failure changed his course. He chose the Greenland route. "If I found it impossible to proceed northward over the pack," he rationalized, "I still had an unknown coast to exploit."

On May 8, 1900, Peary and Henson passed the farthest point reached by previous explorers. To Peary's relief the coastline continued northward and "my eyes rested at last upon the Arctic *Ultima Thule*," a cape he named for Morris Jesup. He then set off across the Arctic Ocean for the first time, but after four marches gave up, finding the pack ice a far more formidable adversary than any he had encountered before.

It was vital now to travel as far around the coast as possible—to the point he named Cape Wyckoff. The insularity of Greenland was now a certainty. He had traveled 400 miles from Fort Conger, found about 150 miles of coastline. For once even Peary seemed to believe he had done enough.

"I CANNOT BUT ADMIRE her courage," Peary said of Jo, eight months pregnant with their first child (bottom) when they docked at Anniversary Lodge in August 1893.

The Pearys cared deeply for each other. He tried to make Jo laugh as she nursed his leg, broken on the 1891 Greenland expedition: "Oh, my dear, pack it in ice until someone can shoot it."

But the record of the ten months from his return to Fort Conger on June 10, 1900, to April 5, 1901, is inexplicably almost blank. What justified staying another full winter and spring in the solitude of that hut only 500 miles from his goal?

He made one foray, traveled 40 miles, did not even reach the Arctic Ocean, and retreated to Fort Conger after eight days. This, I believe, was a broken man.

His party started south on April 17, meeting a party from the *Windward*. For nine months, while Peary had been at Conger, his wife, Jo, and his daughter Marie had been wintering on the *Windward*, iced in at Payer Harbour, unable to get a message to him.

Peary struck out for the ship, resting on the way at the D'Urville "box-house." He must have read and reread his mail in that tiny hut. A letter from Jo confronted him with his relationship with an Eskimo woman, Aleqasina. Both "Ally" and the child from this union were with her on the *Windward*. "Had I known how things were with you here I should not have come."

His mother told of her sorrow that instead of bringing him, the relief ship brought "sad reports of your sufferings and mutilation. . . . Oh my child do come home, give up this pursuit."

Then from Jo, news of the death of his second daughter: "Our little darling whom you never knew was taken from me on August 7.99, just 7 months after she came. . . . Oh, sweetheart, husband, together we could have shared it but alone it was almost too much."

On the sixth of May 1901, Peary's 45th birthday, he reached the *Windward* and was reunited with Jo and Marie after almost three years. With Jo's acquiescence he was soon back on course. For Peary

there was no alternative but to return north to face his adversary. Then came devastating news: His mother had died the previous November while he was at Conger.

At Cape Hecla on April 6, 1902, Peary again struck north for the Pole. The men hacked across drifting pack ice, fighting for every mile, averaging barely five a day. At their farthest north on April 21 they had made only 82 miles. All he could do was hoist the flag and jot: "The game is off. My dream of sixteen years is ended."

FAILURE his four-year expedition may have been in his own eyes, and in the eyes of many of his fellow officers. But to the President, a failure Peary was not. Peary's thrusting patriotism, grit, and determination were what Theodore Roosevelt liked to see—a man of his own type who would win honor for his country, given the opportunity. With the President's blessing he was granted three years' paid leave, commencing just weeks before the birth of his son, Robert E. Peary, Jr. When his new ship *Roosevelt* sailed from New York on July 16, 1905, Peary, at 49, felt the black years were behind. He had a powerful ship and a new strategy—a reversal of his conviction that the only way to reach the Pole was with a single small party. He would test the "Peary system" of relays of supporting parties, involving many men and dogs. After a three-week battle with the ice, he reached Cape Sheridan on September 5, 1905.

In late February Peary was ready to advance across 422 miles of ice from Point Moss to the Pole. The round-trip should take "a hundred days or a little more, an average travel of about ten miles a day."

"It'll work," commented Henson, "if God, wind, leads, ice, snow, and all the hells of this damned frozen land are willing."

They were not. The ice cracked and shook beneath them. By the 17th day Peary had covered only 70 miles—scarcely four miles a day,

CHILD OF THE ARCTIC, Marie Ahnighito Peary was born on September 12, 1893, as 24-hour darkness began to settle over Greenland. "When the earliest ray of the returning sun pierced through the window of our tiny room," her father wrote later, "she reached for the golden bar as other children reach for a beautiful toy."

A second daughter was born and died in Washington, D. C., during one of Peary's extended absences. Before her brother Robert's birth in 1903, Marie begged Peary to stay home: "I don't want people to think me an orphan."

ALL ROBERT E. PEARY COLLECTION

nowhere near good enough. Four days later he came up against what he most dreaded—"a broad open lead extending east and west across our course, farther than we could see."

A sun observation revealed he was far to the west of his course. On April 2, after a week's delay, Peary, Henson, and the Eskimos risked crossing the thin ice now covering the Big Lead. Peary thus committed himself to a push north without certain support and what his critics refer to as "reliable witnesses."

Thick weather worsened. On April 12 the blizzard abated, and Peary was able to get an observation that indicated they had drifted east 62 miles in six and a half days. He was now faced either with turning back or risking his life in a desperate bid to beat the Italian record—86° 34′ N, 82 miles north from Storm Camp. Of course he went north! How *far* north he went is another issue entirely. He "bent every energy to setting a record pace."

From this point on, question marks creep in. His mileages far exceed anything before; his published account lacks consistency with the transcript of the missing diary of this journey.

On April 18 they ran into a network of leads and were forced to back out, only to be stopped again. In a "perfect mesh of leads" and with the ice in motion, the diary transcript comes to an end, and we must turn to the published account for the last day. "When my observations were taken . . . they showed that we had reached 87 degrees 6 minutes north latitude, and had at last beaten the record, for which I thanked God." No record remains of those observations Peary claims he made at local noon on April 21, 1906, nor of distances nor of hours of traveling for the last three marches.

"ETHNOLOGICAL SUBJECTS" in 1891, Greenland's Smith Sound Inuit became known to Peary "by name and sight" as they taught him how to survive in the Arctic. "I have a sincere interest in these people, aside from their usefulness to me," he wrote in 1910. "They have abundantly proved themselves my friends."

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PEARY PROBABLY *did* reach a new "farthest north," beating the standing record by a few miles. So what about his claim to have reached latitude 87° 6′ N? (I find it almost impossible to accept that on April 20 he traveled a minimum of 77 miles to the claimed point and back in one long march—even without adding detours.) Would a new mark above latitude 87°, no longer bracketed with Nansen's and the Italian Cagni's in the 86s, have seemed more valid and less likely to be questioned?

Yet what was he bringing back? Not enough! He urgently needed something else—some stretch of unmapped coastline with features he could name. Only one week after returning to the *Roosevelt*, he set off again—this time west along the north coast of Ellesmere. Reward came on the 16th day out. "What I see before me in all its splendid, sunlit savageness, is *mine*, mine by the right of discovery, to be credited to me, and associated with my name, generations after I have ceased to be," he exulted in his diary. But how little had been left for Peary to discover—65 miles in a straight line.

In a last bid for any land his rivals had missed, he climbed a 2,000-foot mountain. Across the polar pack to the northwest "my glasses revealed the faint white summits of a distant land." Later explorers have searched for this "Crocker Land" but failed to find it.

Returning after 58 days to see the perilous shape the ship was in, he told Bob Bartlett: "We have got to get her back, Captain. We are going to come again next year."

Surely now we are seeing obsession, which led him to reject Jo's pleas, collected on his nightmarish voyage home in the crippled *Roosevelt:* "I shall not let you go away again. . . . Your children have some claim upon you also. My Husband, my sweet heart. . . . Just think life is nearly over and we have missed most of it."

How could she compete with his destiny? At a banquet of the National Geographic Society in December 1906, Theodore Roosevelt himself presented Peary with the Hubbard Medal for attaining a new farthest north, praising the explorer for "the great feat which you have performed."

How his reply must have torn Jo! "To me the final and complete solution of the Polar mystery . . . is the thing which must be done for the honour and credit of this country, the thing which it is intended that I should do, and the thing that I must do."

"I BELIEVE IN YOU, PEARY, and I believe in your success—if it is within the possibility of man," President Roosevelt said when, 19 months later, he came aboard the *Roosevelt* to bid Peary and his men farewell.

The President had arranged three more years' leave from the Navy, but financial hurdles had been less easily cleared. For weeks on end Peary had traveled, lectured, raised money, with seldom time to spend at home. Then had come cruel setbacks: the death of his principal backer, Morris Jesup; the necessity to postpone the expedition—a whole year in which Peary would be even further past his prime, a year in which Peary's erstwhile teammate, Dr. Frederick A. Cook, would steal a march toward the Pole.

The affable doctor, now a seasoned explorer, had made summer expeditions to Greenland and wintered in Antarctica, where he won the admiration of Roald Amundsen. In 1901 he had been sent north by concerned members of the Peary Arctic Club to examine Peary on the eve of his fourth consecutive Arctic winter. Cook found Peary "wrecked in ambition, wrecked in physique, and wrecked in hope," and diagnosed early symptoms of pernicious anemia. How uncomfortable for Peary—Cook, nine years younger, advising his old leader: "You are through as a traveler!"

Peary held his tongue, as he did when Cook, elected president of the Explorers Club, gained renown for climbing Alaska's Mount McKinley, highest peak in North America, in 1906—a claim later held to be

false. But now Cook, invading Peary's "domain," threatened to snatch Peary's prize of a lifetime. If he could fake the climb of McKinley, might he not also fake the attainment of the North Pole?

Cook, backed by a wealthy big-game hunter, John R. Bradley, slipped away without fanfare, ostensibly on a summer trip to the Smith Sound region in search of bear. He had, however, loaded supplies for a try at the Pole. While Peary fretted at delays, Cook wrote from Etah on August 26, 1907: "I have hit upon a new route to the North Pole and will stay to try it. By way of Buchanan Bay and Ellesmere Land and northward through Nansen Strait over the Polar Sea. . . . There will be game to the 82nd degree, and there are natives and dogs for the task. So here is for the Pole."

Asked by the Explorers Club to succeed its absentee president, Peary accepted—on "the assurance that, in the event of Dr. Cook returning and claiming to have found the North Pole, proper proofs would be demanded of him." But in a letter to the *New York Times* he voiced his burning indignation that Cook had based himself at Etah, Peary's depot for years, and had appropriated *his* men and dogs assembled in expectation of *his* arrival. "I regard Dr. Cook's action in going north 'sub rosa'. . . . for the admitted purpose of forestalling me as one of which no man possessing a sense of honor would be guilty."

ON JULY 6, 1908, after the year's delay, the *Roosevelt* sailed from New York. Memories of cheers, saluting sirens, and the presidential send-off mingled with pangs of parting from Jo ("Another farewell—and there had been so many!") and the specter of Cook.

When Peary learned that Cook had set out from Cape Thomas Hubbard with only two Eskimos and 26 dogs on a round-trip (if the Pole really was his objective) of more than a thousand straight-line miles with only the food he could haul on two sledges, and the flesh of the dogs hauling them, he knew this was impossible. But what if Cook were still alive and, after wintering on Ellesmere or lands to its west, returned ahead of Peary, claiming to have reached the North Pole?

We have no glimpses into the private world of Peary to reveal his thoughts on the eve of battle with the polar pack, his final chance to win the glory for which his whole life had prepared him. All we know is that he ordered nailed to the door of Cook's deserted shack an enigmatic notice: "This house belongs to Dr. F. A. Cook, but Dr. Cook is long ago dead and there is no use to search for him. . . ."

With Cook removed from the scene, pronounced "dead," the hapless doctor is mentioned no more.

When the *Roosevelt* turned north out of Etah fjord on August 18, 1908, she was loaded almost to the water's edge with coal, 70 tons of whale meat from Labrador, the meat and blubber of 50 walruses, 22 eager Eskimo men with their hunting equipment, 17 well-fed, chattering women with 10 children, and 246 dogs. "Ahead of me," Peary wrote, "lay—my dream, my destiny, the goal of that irresistible impulsion which had driven me for twenty-three years. . . . Should I succeed? Should I return?"

Peary spent his final Arctic winter at Cape Sheridan calculating "pounds of supplies and miles of distance. It was the lack of food which had forced us to turn back at 87° 6'. Hunger, not cold, is the dragon which guards the Rhinegold of the Arctic."

Finally, one by one, his "divisions" set out for Cape Columbia

until, by February 21, 1909, Peary alone of the polar party was left aboard ship. "When at last I turned in for a few hours' sleep, it was with the consciousness that . . . the morning start would be the drawing of the string to launch the last arrow in my quiver."

On March 1, near the end of the winter night, all 24 men, 19 sledges, and 133 dogs were on the Arctic Ocean ice, about latitude 83°. Due north—413 nautical miles—lay the Pole.

Bartlett and George Borup had pushed ahead the day before to break trail. One by one the other divisions, Peary's in the rear, crossed

the glacial fringe onto the pressure ridges of a "crazy zone of ice." As they moved away from the shelter of land, they "got the full force of the violent wind"—an east wind—and disappeared in the gray haze and drifting snow.

Day after day, as the 12 hours of twilight brightened into perpetual day, the meticulous military-style assault moved relays of men and supplies northward. Each of the seven divisions was self-sufficient, each sledge carrying 50 days' food for driver and dogs. One by one the divisions would put down supplies, then turn back, leaving fewer mouths to feed, until only Peary's division remained.

But in pitting "human brains and persistence against the blind brute forces of the elements," there was always the unpredictable—or, as the Eskimos saw it, the interference of their archenemy Toorngarsuk, the evil spirit, with Peary's plan. Leads delayed, detoured, endangered them. They had to manhandle heavy sledges over pressure ridges and heavy rubble ice until their muscles ached. Ice crushed and ground noisily beneath them. Only quick action got the encamped Bartlett and his team off a floe that floated away. Peary's division had to cross a lake of young ice six miles wide, so thin that the ice buckled under them as they rushed across.

A broad line of black water widened before them. "The lead & the

"THE PRESENCE OF WOMEN an absolute necessity to render the men contented." Peary housed entire Eskimo families aboard the Roosevelt and made them "multimillionaires" with payments of guns, ammunition, and whaleboats. Women sewed fur clothing and made shoes for the expeditions; men hunted and built sledges.

Adapting to accepted Eskimo marriage customs, both Peary and Henson fathered children whose descendants carry their names today.

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delay are causing symptoms of illness among several of the Esks," Peary jots in his diary. Harrowing is the "4th day of helpless, irritating inaction. . . . Four fine marching days lost." And a fifth. Then, on the sixth: "Lead crushing slowly together all day. Still no rear party. Shall push on tomorrow & take chances."

The chances were considerable, for Ross Marvin had not returned from Cape Columbia with a precious load of stove fuel to replace alcohol and oil lost when tins sprang leaks in the rough going over ice ridges. Desperation crept into the note Peary left: "Have waited here (6) days. Can wait no longer. Push on with all possible speed. . . . *Do not camp here. Cross the lead.* It is *vital* you overtake us & give us fuel." And all the while the thought gnawed at Peary that ice movement under a strong wind might obliterate the trail.

Three days later a pursuing vapor trail was a welcome sight: "Marvin comes swinging in, smoking like a battleship squadron . . . 5 sledges in all."

Accompanying such incidents, described in dramatic detail in Peary's *The North Pole* yet barely alluded to in the diary, is the daily litany of estimated distances: "a good march (12 m.)"; "travelled 12 hours (15 m.)"; "at least 15 m." He gives impressionistic comments on conditions: "Raw thick day"; "Rough heavy ice at beginning of march & tortuous route"; "Fresh easterly wind all day"; "Ice grinding audibly in various directions but no visible motion." He points to difficulties in taking observations and making soundings: "hazy day"; "impossible see any distance or distinguish relief"; "Light snow during night & much of day . . . impossible take observations"; "Bubble in all 3 therms. & unable to register"; "Marvin makes sounding (310 fath.) & loses lead"; "Marvin made sounding (700 fath., no bottom) & lost 2 pickaxes & half his wire."

LECTURING earned Peary much of the money he needed for his expeditions. Assisted by a fur-costumed Matthew Henson, he illustrated his talks with Arctic equipment, slides, and howling Eskimo dogs. Promoting his upcoming Greenland voyage in 1891, he addressed the newly formed National Geographic Society, which became one of his staunchest supporters.

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Peary is the energizer, the driving force, convinced that without him everything would grind to a halt. "Turned out after 3 hours sleep & was under way before 3.—a.m."; "Rapped the party up at 5.—a.m." He is competing against himself as well as everyone else: "This march must have put us beyond Nansen's starting point"; "Our camp is beyond the Norwegian record"; "This places us beyond the Italian record."

On April 1, a month out from Cape Columbia, at latitude 87° 47′ N, Newfoundlander Capt. Bob Bartlett, keenly disappointed at not being chosen to go the full distance, turned back.

"We are ready now for the final lap," Peary writes; "sledges thoroughly overhauled & strengthened, dogs the pick of 133, & dogs & men in training. It is the time for which I have intentionally kept in the extreme rear. From here on I shall take my proper place in the lead."

The usual pattern was for Peary to set out ahead to break trail on foot, leaving the others to pack up and follow. Then after an hour or two Henson overtook him and broke trail while Peary rode on a sledge, "setting course by moon, our shadows, etc."

Peary had reckoned that nine marches at their recent average speed

would "do the trick"—reach the Pole. The polar party, trimmed down to six fit men, five sledges, 40 of the best dogs, and aided by near-optimum conditions, does it in five. On April 2: "Have no doubt we covered 30 miles but will be conservative and call it 25. . . . In any event we are now beyond the 88th parallel."

"Over the 89th!!" he exults on April 5; "10 hours, 25 miles or *more*. Great." The dogs were trotting, galloping much of the time. The last notation before the gap at the farthest north camp, Jesup, simply reads: "The wind . . . blew fresh from the east for some hours. Temp. when we arrived at this camp (10. —a.m.)−11°."

ONE MIGHT EXPECT the climax of this epic journey to be so engraved in Peary's mind as well as Henson's that every detail would surface when the time came to record those historic 30 hours. But their accounts are more confused and contradictory at this crucial point than at any other.

Henson recalled that after he took over breaking trail, he would not see Peary until the end of each day's march. On April 6 he arrived at the Camp Jesup site 45 minutes ahead of Peary, concluding by dead reckoning that they had covered the full distance. He greeted Peary with: "I think I'm the first man to sit on top of the world."

Was Peary angry because Henson had not stopped to wait for him, an interviewer asked. "Oh, he got hopping mad," Henson replied. "No, he didn't say anything, but I could tell."

Henson wrote that Peary "fastened the flag to a staff and planted it firmly on the top of his igloo." Then, "as prospects for getting a sight of the sun were not good, we turned in and slept."

After Henson had turned in, a break in the clouds enabled Peary, unwitnessed by Henson, to snatch a sun sight at 12:50 p.m. indicating their position as 89° 57'—three miles short of the Pole. But he could *not* know in which direction the Pole lay because he did not know his longitude. To confirm his position, Peary needed to make more observations when the sun reappeared. He reports that he fell into an exhausted sleep for several hours, awoke to write that famous loose-leaf note ("The Pole at last!!!"), then set out to make them.

Now it was Henson's turn to feel hurt, for one of the Eskimos came in and told him that Peary was going the last miles to the Pole without him—without the man who had done more through the years than any other to help him attain it.

At 6 p.m. Columbia meridian time, the sky still overcast, Peary pushed on with his two Eskimos (Egingwah and Seegloo), a light sledge, and a double team of dogs for an estimated ten miles, made observations at Columbia meridian midnight, and returned to Camp Jesup to take another set at 6 a.m. on April 7. He then went another eight miles, at right angles to his previous course, before returning to make his final observations at Camp Jesup at noon.

Henson described Peary's return. "His face was long and serious. He would not speak to me. I quietly learned from the boys accompanying him that he had made observations a few miles further on. 'Well, Mr. Peary,' I spoke up, cheerfully enough, 'we are now at the Pole, are we not?'

" 'I do not suppose that we can swear we are exactly at the Pole.'

" 'Well, I have kept track of the distance and we have made exceptional time,' I replied. 'If we have traveled in the right direction, we

BANKROLLING THE POLE, New York businessman Morris K. Jesup offered thousand-dollar memberships in the Peary Arctic Club to sustain the explorer's work. The Navy granted Peary leave with pay but never financed an expedition. "He was always mortgaged up to the hilt," a colleague sympathized, "and pawned Mrs. Peary's things as well."

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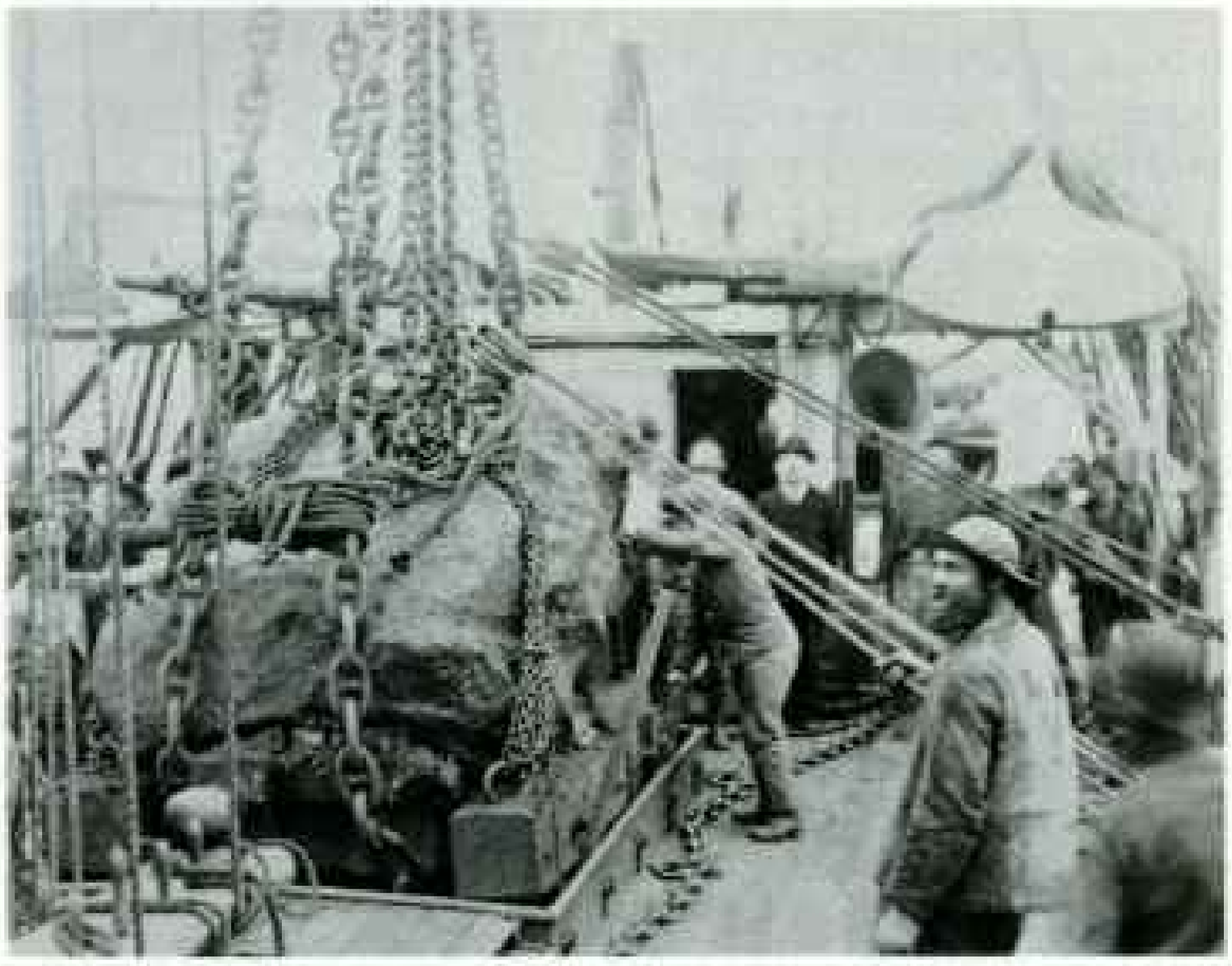
are now at the Pole. If we have not traveled in the right direction, then it is your own fault.' " Peary made no reply.

"Feeling that the time had come," Henson continued, "I ungloved my right hand and went forward to congratulate him on the success of our eighteen years of effort, but a gust of wind blew something into his eye . . . and with both hands covering his eyes, he gave us orders to not let him sleep for more than four hours."

Henson also relates that Egingwah had witnessed Peary's "disappointment" at the crucial midnight observations. If these confirmed the torturing thought that he was farther south than his dead reckoning indicated—if they confirmed the sun sight that he could not believe at the time, his exhausted mind insisting it was wrong since it made no sense that he was not just a few miles from the Pole—his disappointment was bitter indeed.



LARGEST KNOWN METEORITE when Peary discovered it in 1894 near Cape York, Greenland, this 34-ton mass was the Eskimos' source of iron before European whalers introduced metal blades in the early 19th century. Peary retrieved it in 1897 and later sold it and two smaller meteorites to New York's American Museum of Natural History for $40,000.

STEWART COLLECTION, PEARY-MACMILLAN ARCTIC MUSEUM, BOWDOIN COLLEGE

In view of the possibility, arrived at from a study of his navigation, that Camp Jesup was off course, to the west of his assumed heading by at least 30 miles, and perhaps 60, how much sharper was Henson's innocent remark that if they had not traveled in the right direction, it was *Peary's* fault! How much more poignant that moment when Henson went to shake Peary's hand and Peary turned aside "with both hands covering his eyes"!

Had Peary left Henson behind at Camp Jesup because he needed time to think, time to struggle with his conscience, time to adjust himself to the private agony of that heartless, mocking truth? If this was the truth of Peary's discovery, then indeed there were no 30 hours in this man's life blacker, no cry of anguish more piercing than that in his heart.

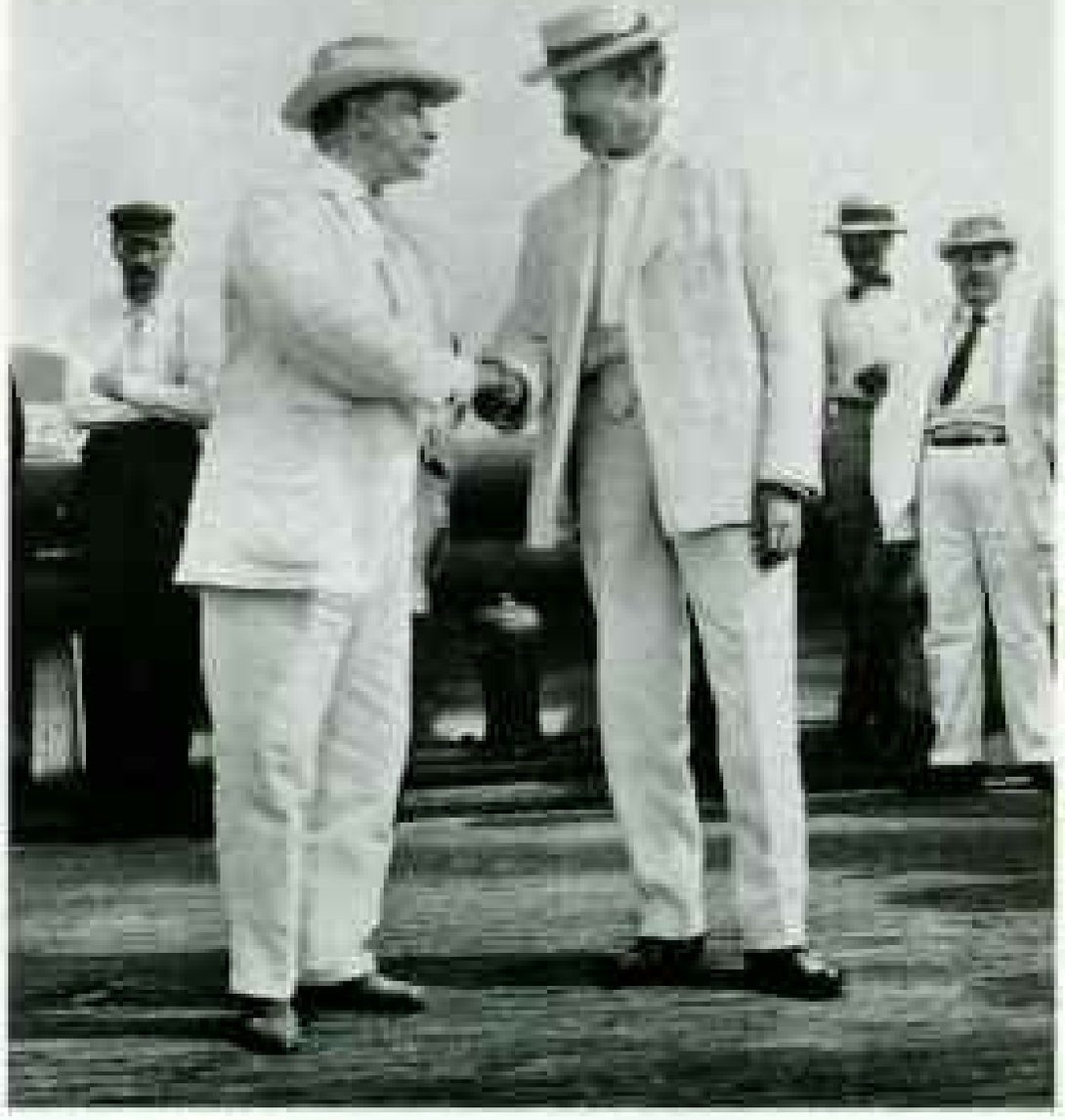
THE FLAG CEREMONY "at the Pole" completed to fulfill the expectations of the polar party, Peary says: "One backward glance I gave—then turned my face toward the south and toward the future." But what did the future hold if he did not return successful? What of his duty to succeed—to wife and family, to his backers, to the Navy, to the man he greatly admired, Theodore Roosevelt, who as President of the United States had charged him to plant the Stars and Stripes at the Pole and make his countrymen proud for as long as human endeavors still stirred humankind and inspired the young? If such thoughts were on his mind, small wonder he was a stranger to Henson:

"From the time we knew we were at the Pole Commander Peary scarcely spoke to me. . . . It nearly broke my heart . . . that he would rise in the morning and slip away on the homeward trail without rapping on the ice for me, as was the established custom."

After 16 hard marches, according to Peary, they reached Cape

Columbia. There they slept two days, and then went on to the ship. Exhausted though he was, and saddened at the news that Marvin had died returning on the ice pack, it seems strange that Peary showed no desire to celebrate—even to share his triumph with his crew. Not a word about the Pole. When put the question directly, Peary replied: "I have not been altogether unsuccessful." And in his note to team members MacMillan and Borup, this evasive news: "Arrived on board yesterday. Northern Trip entirely satisfactory."

At Cape Sheridan before the *Roosevelt* broke free and steamed southward, Peary had time to think on his destiny, to *know*, deep in his heart, what it was his "duty" to do. With his last journey over and no longer any need to achieve more, "it remained only to arrange the results." On June 12, a full 56 days after returning to the ship, he signed a statement outlining the achievements of the expedition. It was erected atop a cairn. On the north-pointing arm of this monument a copper plate bore the inscription: "North Pole, April 6, 1909, 413 miles." It was Peary's first public announcement that he had reached the Pole.



TOUTING PEARY as an antidote to the "softening tendencies of our time," President Theodore Roosevelt, left, secured the commander's leave of absence from a reluctant Navy for a final "assault" on the Pole. With this handshake he sent Peary north from New York aboard his namesake ship in a July 1908 heat wave.

PEARY-MACMILLAN ARCTIC MUSEUM, BOWDOIN COLLEGE

WHEN Peary had returned in 1906 claiming a new farthest north, his word was accepted, as had been that of every previous holder of that coveted record. The shock of learning on his return to Etah in 1909 that Cook, "long ago dead," had reappeared, claiming he had reached the Pole on April 21, 1908 (a year ahead of Peary), must have gone much deeper than reaction to an outrageous hoax. Not only did he need to discredit his rival, but also, alarmingly, he himself would be compelled—as he had insisted that Cook should be compelled—to prove he had reached the Pole. And such proof Peary did not have.

Henson, Bartlett, MacMillan, and others of Peary's team scoffed at Cook's claim: "To us, up there at Etah, such a story was so ridiculous and absurd that we simply laughed at it." And Cook's two Eskimo companions, who had wintered with him on Jones Sound, testified that they had made only two marches out onto the Arctic Ocean before returning to land.

Collecting mail on the way south, Peary learned that Cook had reached Upernavik, 700 miles south of Etah, by dogsled, and was seeking the first ship south. If he announced his claim ahead of Peary, the world would hail him as first to the North Pole. In the battle ahead this would weigh heavily. Peary also received one of the six copies of the letter Jo sent north by different whalers: "If you have succeeded then you are happy & nothing will matter to you, but if you have not oh my dearest & best of sweethearts try to content yourself with us. What if you should not return? I simply could not face another winter without you. . . . You must, *you must come home.*"

Come home he did, but to an ordeal and to a tarnished prize—for the *Roosevelt* reached the wireless station at Indian Harbour, Labrador, on September 5, three days after Cook's claim, transmitted from the Shetland Islands, made the *(Continued on page 412)*

"All my years of work and all my former expeditions were merely preparations for this last and supreme effort."

ROBERT E. PEARY COLLECTION, COURTESY VOLKMAR WENTZEL

OUTFITTED IN ARCTIC FOX, polar bear, and confidence, Peary in 1908 commanded the Roosevelt, seen here in an early autochrome (left), toward wintering grounds at Cape Sheridan on Ellesmere Island. With him were five Americans, 49 Eskimos, and 246 dogs (below). "To my dying day," wrote the ship's captain, Canadian Bob Bartlett, "I shall never forget the frightful noise, the choking stench and the terrible confusion that reigned aboard her."

The three-masted schooner-rigged steamship had been strengthened following extensive repairs for ice damage after the 1905-06 expedition. Conditions that spring had forced Peary's sledges to turn back 175 miles from the Pole—a new farthest north record, but for Peary, "an empty bauble compared with the splendid jewel on which I had set my heart for years."

Now at 52, his auburn hair streaked with gray, he was "face to face with the final struggle." "Everything in my life," Peary wrote, "appeared to have led up to this day."

THE BETTMANN ARCHIVE (LEFT); ROBERT E. PEARY COLLECTION

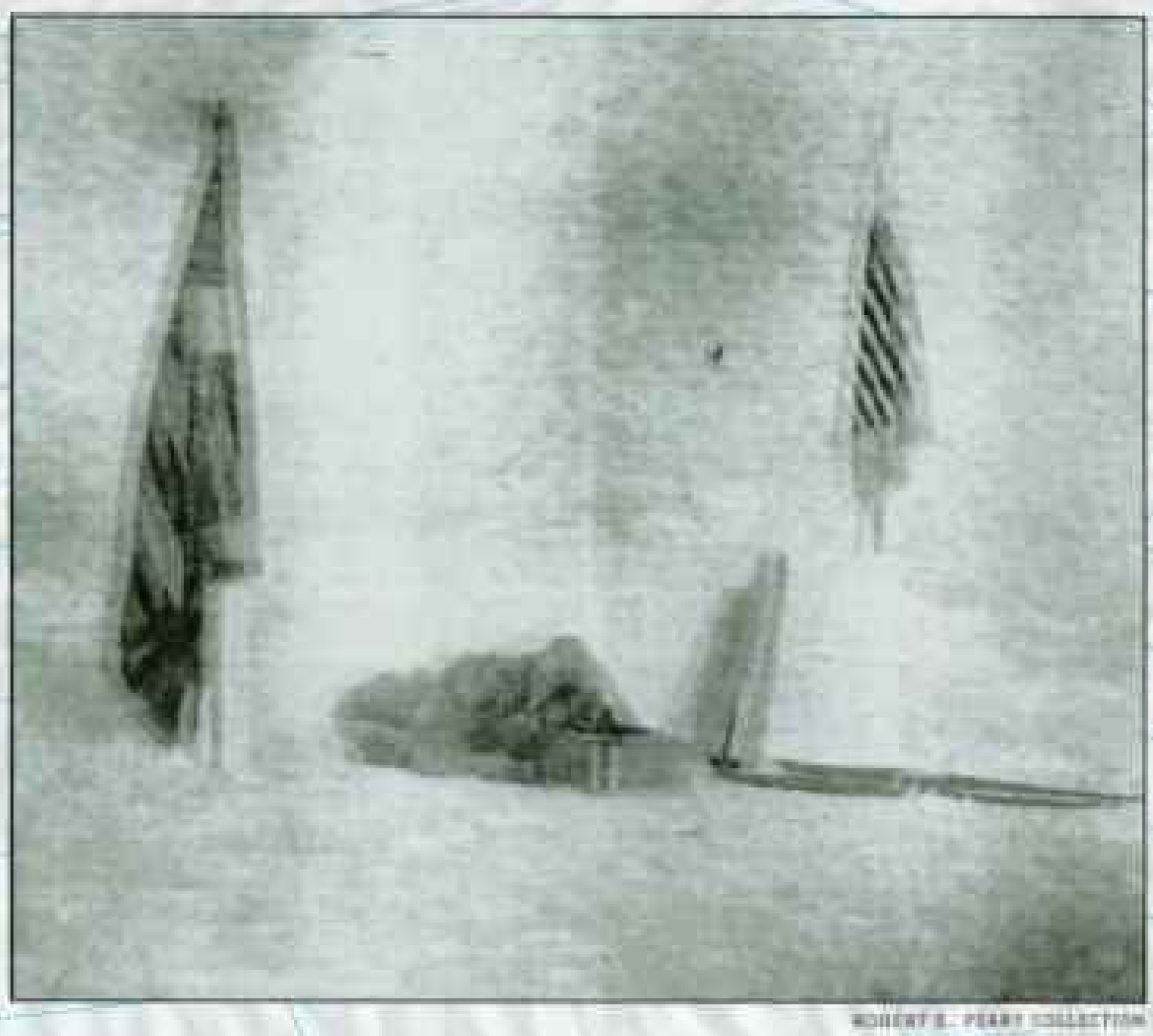
"I felt that if we encountered nothing worse than this in the first hundred miles from the land we should have no serious cause for complaint."

"PLUNGING onto the trackless ice fields of the Arctic Ocean," Peary left Cape Columbia on March 1, 1909. To tackle the 413 nautical miles (475 statute miles) of "icy chaos" guarding the Pole, he devised a military-style relay system, dividing his 23 men, 19 sledges, and 133 dogs into seven teams. A loaded sledge weighed 500 pounds and carried a 50-day supply of pemmican, biscuits, and tea. Pressure ridges as high as 25 feet made for "heavy and tortuous going"; a wide lead of water brought six days of "helpless, irritating inaction." Ocean soundings (right) were taken at leads and through thin ice. Temperatures ranged from five to fifty-nine degrees below zero. At set intervals teams turned back, retracing the trail. After taking a latitude reading on April 1, Bob Bartlett swung his party around, leaving Peary, Henson, and four Eskimos. "Assuming the Captain's figures to be correct," Peary wrote in his diary, "we are 133 miles from the Pole."

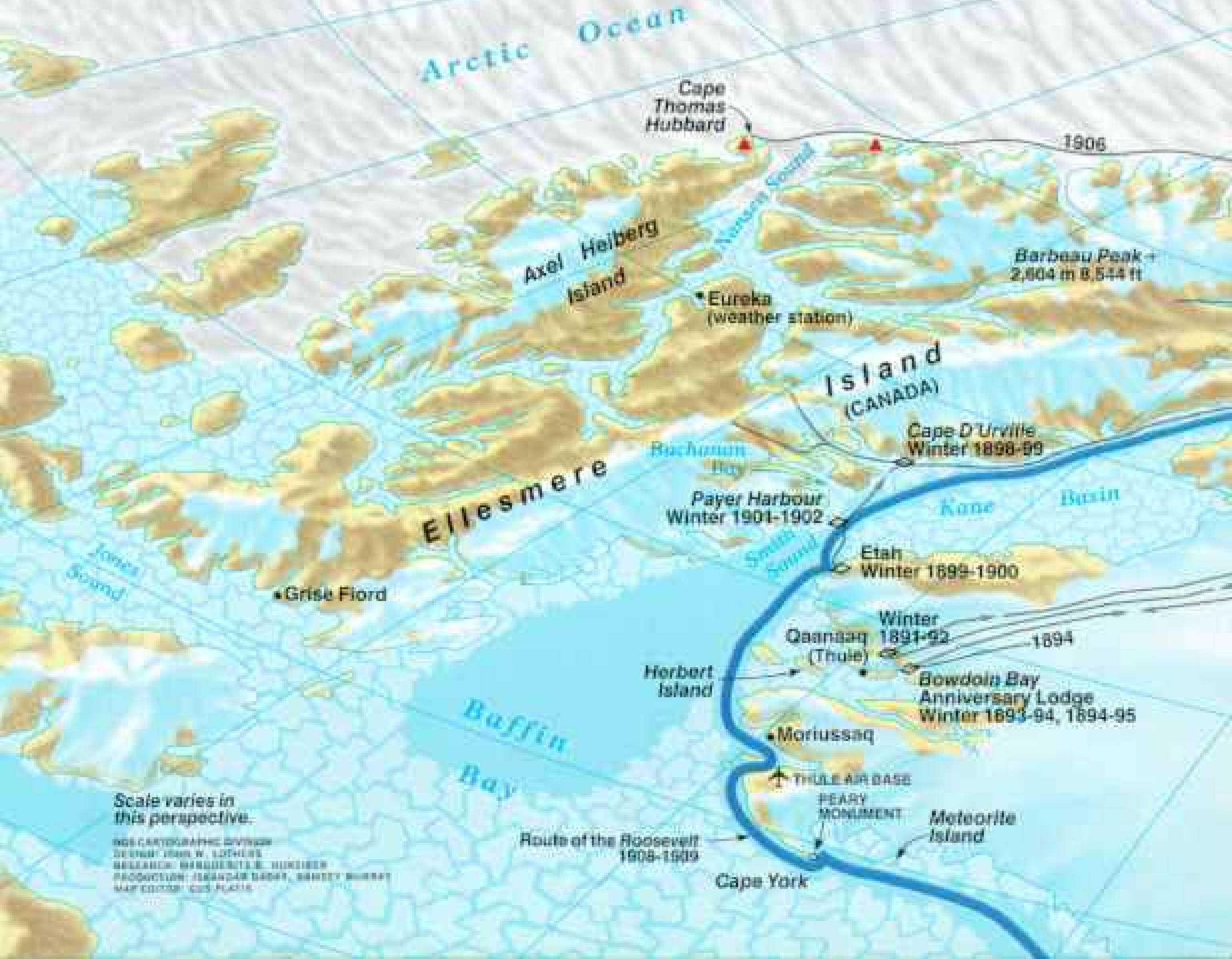
BOTH ROBERT E. PEARY COLLECTION

Where was Peary?

"HARD WORK, *little sleep, much experience, first class equipment, and good fortune. . . .*" *These factors Peary credited for reaching the Pole and returning to Camp Bartlett in a "glorious" eight-day sprint. With clear weather and smooth ice the team's speed had nearly doubled. On April 6 at 10 a.m. they set up Camp Morris Jesup. Dead reckoning indicated they were near the Pole. Using a sextant and a sink of heated mercury as an artificial horizon, Peary (right) calculated his latitude to be 89°57′ N—three miles from 90° north. He took more sun altitudes ten miles from camp. Returning, he made another set of observations, then marched eight miles in a different direction, and later made a final set at Jesup*



ROBERT E. PEARY COLLECTION



before starting for home at 4 p.m. on April 7. He later railed against critics: "No one except the most ignorant will have any doubt but what, at some time, I had passed close to the precise point, and had, perhaps, actually passed over it."

Or he may have been from 30 to 60 miles away, concludes author Wally Herbert, who has projected three locations based on different combinations of navigational errors. Peary's "astonishingly slack" records make it impossible to prove or disprove his achievement. His diary indicates, almost as an afterthought, that he took a latitude reading of 89°25' on April 5, but no calculations survive. Peary took no longitude readings, and there is no evidence that he corrected his course for detours. Ice drifting west in "violent" easterly winds may from the start have carried Peary off his intended track, the Cape Columbia meridian. Each day his heading would have been set by the shadows cast at local noon. But if he was not on the Columbia meridian he would not have headed due north. And if his route indeed lay to the west, his error would have been increased by the fact that his chronometer was ten minutes fast. There is also conflicting evidence on whether he checked the magnetic variation of his compass.

"Conditions could have been phenomenal," says Herbert, but Peary's round-trip speed from Bartlett borders on the incredible.

Equally puzzling are the psychological mysteries. If Peary's final readings told him he was off course, what was his reaction to this discovery? April 7 and 8 are blank in Peary's diary, and later accounts by him and Henson are contradictory. He "scarcely spoke" to Henson on the return trip, and back on the Roosevelt he was subdued about his feat.

(Continued from page 405)

New York Herald, one day after Cook's tumultuous welcome in Copenhagen.

Controversy, vilification in the press, scorn were heaped on the haughty, austere Peary; the personable Cook basked in the praise of a lecture tour and profited from his book, *My Attainment of the Pole.* Bitter frustration must have eaten into Peary's soul.

Scientific circles subsequently discredited Cook because he failed to provide sufficient proof—and serious doubts about his McKinley claim also played a part in his downfall.

In time, gold medals and international honors, promotion to the rank of rear admiral, and the "thanks of Congress" came to Peary, his rewards of a lifetime's craving for fame—deserved rewards, in my view, for his courage and persistence. But at what cost victory? His wife, in an unpublished note, reveals:

"No one will ever know how the attack on my husband's veracity affected him, who had never had his word doubted in *any* thing at *any time* in his life. . . . And the personal grilling which he was obliged to undergo at the hands of Congress, while his scientific observations were examined and worked out, although it resulted in his complete vindication, hurt him more than all the hardships he endured in his sixteen years of research in the Arctic regions and did more toward the breaking down of his iron constitution than anything experienced in his explorations."

He became confined with pernicious anemia—the onset of which Dr. Cook had diagnosed years earlier—and on February 20, 1920, the spirit finally parted from this extraordinary man.

"SEARCHING *the horizon for land" at Camp Jesup, Egingwah may have been helping Peary look for Crocker Land. Discounted in 1915 as an Arctic mirage, this territory was sighted by Peary during his 1906 expedition—and later cited by his critics as an example of Peary exaggeration. They charged that his calculations of latitude presented as proof of presence at the Pole (facing page, bottom) could have been later faked by consulting sun declinations in an almanac. South Pole discoverer Roald Amundsen admitted this was "perfectly true" but countered that "Peary was not that kind of man."*

"He was one of the greatest polar travelers of all time," says Herbert, "whether he got to the Pole or not."

ROBERT E. PEARY COLLECTION (FACING PAGE, TOP); NATIONAL ARCHIVES, PHOTOGRAPHED BY JOSEPH H. BAILEY, NGS (BOTTOM)

THE BURDEN OF PROOF, I reflected as I studied the Peary documents in the National Archives, generally lies with the explorer. In his own lifetime, however, Robert E. Peary failed to provide conclusive evidence that he had reached the North Pole. Even the 1909 diary I held in my hands is lacking in essential data—a detailed record of wind speed, weather, and ice conditions; a steady progression of position checks by altitudes of the stars, the planets, or the sun for latitude and longitude, as well as checks for compass variation along the route—and is tantalizingly secretive at the most crucial part of the story. Other mysteries also need explanation, such as the blank pages, the surprising consistency of the handwriting, some of the memos, and the North Pole observations themselves.

The strength of his 1909 plan was his experience of 1906. And yet, instead of building upon past foundations, he not only repeated his 1906 errors but also committed new ones arising from his astonishingly casual attitude toward the problems of navigation.

Peary's published plan called for a course to the west of north, to counter the eastward drift of the ice he had observed on his previous expedition. Thus he would stay on the meridian of Cape Columbia, his jump-off place—the 70th meridian of west longitude—and follow it directly to the Pole. But there is simply no way of knowing which way the ice is drifting or at what speed, without frequent position checks by solar observations. Why would he assume he knew which way the pack ice was drifting from the movement he could see locally?

Every opening lead, every grinding sound of ice under pressure indicates that the ice is moving. Even ice floes that appear motionless may be drifting as one mass. Peary knew this from past experience.

What gave him the idea that on this last, crucial attempt at the Pole he could strike out across 413 miles of drifting pack ice and, without any observations for longitude or magnetic variation, hit the Pole! Despite the fact that west-southwest winds had carried him way off course to the east on his 1906 attempt, Peary appears, in 1909, to have ignored the possibility that the strong easterly and northeasterly winds might have blown him off course to the west.

Any one of several navigational or "directional" errors, uncorrected during the outward journey (and there is no evidence that he did correct for them), could have robbed Peary of the Pole. Add to that the fact that his chronometer—critical in navigation—was ten minutes fast, an error he was not aware of while on the ice. This alone could have put him west of the Pole by 18 miles.

There are other problems. After his return to Bartlett's farthest north camp, his diary entry for April 9 reads: "From here to the Pole & back has been a glorious sprint with a savage finish." Still it is difficult to believe that Peary made the 296 miles from that camp to the Pole and back in less than eight days

—harder yet to believe that, from his April 5 camp to the Pole and back to Bartlett's farthest north, he covered 198 miles in four days. This works out (adding a modest 25 percent for detours) at 71 statute miles a day—nothing less than phenomenal! No explorer, before or since, has claimed such distances across the polar pack over the same number of consecutive days, neither with dog teams nor even snowmobiles.

But what chance now, eight decades after the event, has any historian—even a fellow explorer—of learning the truth when, in all probability, during those last five marches northward Peary was being driven not by the rational mind but by a conviction that the Pole was his and that he had the divine right to discover it and return to proclaim his achievement?

Drawing on my own experience, I have assessed Peary's options and pointed out the practical problems each presents. I have described their interplay with less certain emotional issues—the driving force, purpose, commitment, motivation of the man, this giant of a man, for he is the man in all of us: the striving spirit, the visionary, the optimist, the explorer.

As to whether or not Peary reached the North Pole, the answer, by the nature of the subjective elements within it, can never be anything more than a probability.

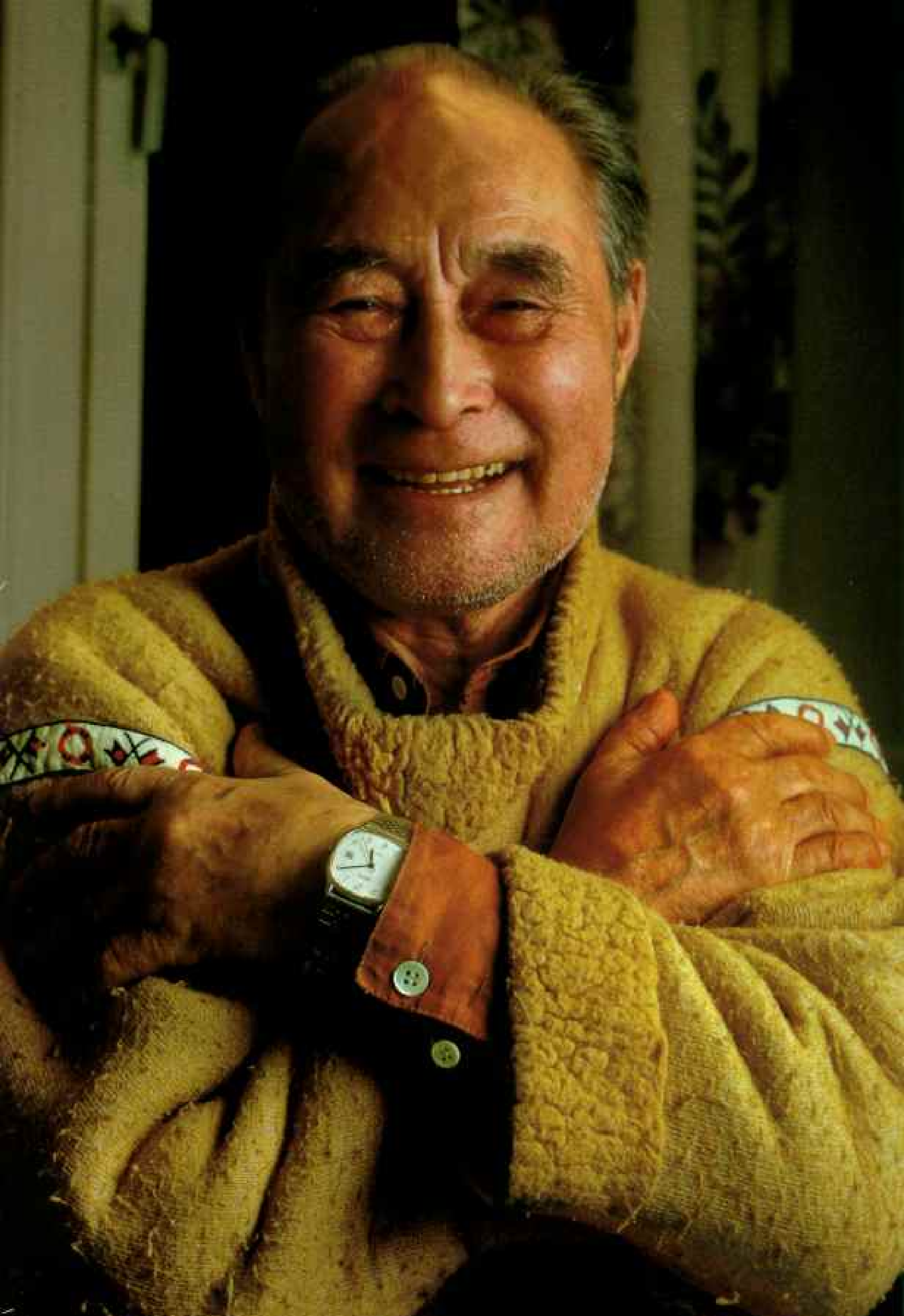
Regardless of the answer, from the higher ground of history Peary stands out as a pioneer who contributed to mankind. Impelled by the energy of his obsession, conquering with his exceptional courage man's fear of the unknown, he extended the bounds of human endeavor. Thus was his mission a success. □

Descendants of the Expeditions

Photographs by BOB SACHA

Sharing a special bond, Anaukaq Henson, left, and Kali Peary—the Eskimo sons of Matthew A. Henson and Robert E. Peary—were born just days apart in 1906 aboard Peary's ship the *Roosevelt*. In the following pages naval historian Edward Peary Stafford tells of first meeting his Eskimo kin, including his cousin Robert E. Peary II (above); Dr. S. Allen Counter, an admirer of Henson, pays honor to that explorer's descendants.

S. ALLEN COUNTER



The Peary Family

By EDWARD PEARY STAFFORD
COMMANDER U. S. NAVY, RET.

I FOUND MYSELF in a room full of people, more than 30 of them, seated at a pair of laden tables, beyond which windows looked out on a fleet of white icebergs in a blue gulf. I had never seen these people until two days before. But I was related to them all: the old man with twinkling eyes, talking animatedly in his Inuit language; the dark-haired woman across the table, with eyes that reminded me of my mother's; the intense young man with glasses, interpreting for me in easy American English. At 69, the grandson of North Pole discoverer Rear Adm. Robert E. Peary, I had found that my family was twice as large as I had thought.

As if launched into space in a cavernous, windowless aluminum tube and landing five and a half hours later on another planet, I had sped north in a U. S. Air Force cargo jet to visit these relatives. From New Jersey's trees, traffic, and stifling August heat, I stepped out into a bracing 43° F at Thule Air Base in northwest Greenland and was soon airborne again in a helicopter over awesome country —fjords, glaciers with deep crevasses, the sweep of blue sound filled with sparkling white bergs; the high, harsh, brown, bare land; and always the great Greenland ice cap, looming in the east as far as the eye could see.

For me it held a poignancy beyond the visual impact. This was my grandfather Peary's country, to which he returned time after time despite the suffering it inflicted on him and the mortal risks inherent in it, and in the face of the repeated, painful separations from the family he loved—until the goal and purpose of his life had been achieved.

To the east, as we clattered across Inglefield Fjord and into Bowdoin Bay, was the site of Anniversary Lodge, where my mother had been born and nicknamed "Snow Baby"; the Eskimos had never seen a child with skin so white. South of Thule, on the tip of soaring Cape York, stood the granite shaft, capped with steel, with white stone P's on its sides for Peary and the Pole. It had been erected by my mother in 1932 on an expedition that included my younger brother and me.

Twenty years later, as officer in charge of a detachment of Navy patrol planes operating out of Thule, I had seen this country again from the air. But on this summer day in 1987 I was seeing it in a warmer light. In the agonizing loneliness of the freezing, months-long winter darkness here, my grandparent had fathered two sons, six years apart. Both were by a young Eskimo woman whose name, Aleqasina, he had once called "not unmusical," and whose face had been described by Robert's wife, Josephine, as "lit by two rows of darling white and faultlessly regular teeth" and "unquestionably pretty."

By the time I had reached maturity, the existence of at least one of these sons was known in the family. But understandably it was not a matter of frequent mention, given the obvious hurt to my much loved grandmother, and perhaps even more to my mother. Somehow none of us had considered the inevitable fact that in the course of the years those two sons would multiply into a considerable family. It was

W. ELMER EKBLAW, COURTESY AMERICAN MUSEUM OF NATURAL HISTORY

PROUD SON of the explorer, Kali Peary (facing page) is renowned among Eskimos for his hunting prowess as well as his engaging sense of humor. Hale and hearty at 81, he was the second son born of his father's union with the Eskimo Aleqasina. Their firstborn, Anaukaq (above, in 1915), was also an accomplished hunter. He died at 27, probably of a perforated ulcer.

MIDDAY MOONLIGHT in February bathes the Greenland town of Qaanaaq, where most of Peary's Eskimo descendants live today. In the early 1950s residents of the town, also called Thule, were moved 65 miles north away from Thule Air Base, where Robert E. Peary II—who took his great-grandfather's name—worked for three years before returning to traditional Eskimo life. Stranded in a hunting shack by icy gales, he fashions a harpoon.

Wally Herbert (author of the preceding article) who brought that fact to our attention with tales of his adventures with Peter Peary, his friendship with Peter's father, Kali Peary, the explorer's son, and other Peary descendants.

It became apparent that the time had come for the two branches of the Peary family to make personal contact, so I flew to Greenland. Forty minutes out of Thule Air Base, the helicopter circled Qaanaaq, the most northerly Inuit town. "Qaanaaq International Airport" is a concrete slab about 50 by 100 feet, marked by red oil drums on a shelf leveled out of a grassy hillside above the brightly painted A-frame houses of a village of some 400 people.

PRESENT TO MEET ME was a delegation of Eskimo Pearys, led by Kali, his daughter Pauline, and his grandson Robert. An unexpected warm feeling of kinship flooded over me as I grasped their hands and looked into their eyes.

At Pauline's home I had gifts to present: for Kali a picture of his father; a special edition of Admiral Peary's *The North Pole* for Pauline; two of my own books for Robert; and for everyone, copies of a genealogical diagram showing the 21 Peary descendants in the United States, along with their addresses and telephone numbers.

For the next three days, while the summer sun circled in the sky, I visited and got to know my "new" family. I learned that the Eskimo name of my constant companion and translator, Robert, was Sissu, and that he had taken the name Robert Peary in pride and in defiance of taunts at school. At the suggestion relayed from my American uncle, Robert E. Peary, Jr., he added the Roman numeral II to his name. Uncle Bob had suggested that since there was already a Robert E. Peary, Jr., III, and IV, "II and V were up for grabs." Sissu chose II.

In Robert Peary II's seven-year-old daughter, Tavfinguaq, light complexion and dark blond hair suggested to me that even after four generations the Caucasian genes can still reveal themselves with pronounced effect.

I was sad to learn that Anaukaq, Peary's first Eskimo son, born in 1900, had died at 27 of something described only as a "hole in the stomach"—probably, in the absence of a more clinical description, a perforated ulcer.

Kali, the second son, had always intended to name his daughter for my mother, Marie, but he had been away hunting when she was born, and she received the name Pauline. When he returned, he made amends and named her Pauline Marie Peary. Pauline and her husband, Kissunguaq, with whom I stayed, had been members of the Greenland Parliament. For several years she had been mayor of Qaanaaq.

I was told that Pauline's brother, Peter Peary, had followed in his father's footsteps as

EDWARD PLEAT STAFFORD

MIDNIGHT SUN dazzles 30 Pearys and spouses—including five of the admiral's grandchildren, ten great-grandchildren and six great-great-grandchildren—after a farewell dinner for Commander Stafford (third from right). Patriarch Kali appears at center.

the greatest hunter and dog driver of all: the only man to have traveled twice to the Pole by dog team—with an Italian expedition in 1971 and with the Japanese in 1978, both times using his grandfather's 1909 route. He had died of a gunshot wound officially declared self-inflicted, a judgment his family disputes.

I NOTED with joy and amazement how much my half uncle Kali was like, in warmth and geniality, my beloved American Uncle Bob. One incident illustrates the gentleness and humor of the man. Kali had been quoted in print by a visitor to Qaanaaq as having said, "It was Matthew Henson who took my father to the North Pole. My father could not have reached the Pole without Matthew Henson." As Robert translated the quote in the magazine for his grandfather, incredulity showed on the old man's face, and he shook his head in denial. But later he said he did not want to offend the quoter and—well, "maybe" it was "possible" that he had said "something like that, joking."

Then, smiling, he wriggled engagingly off the hook with, "Anyway, I am an old man and I forget." Robert told me that if his grandfather had actually made the quoted statement, it was the first time he had ever been known to refer to Peary as his father, rather than as Piulersuaq, the Great Peary.

I learned from a genealogical diagram drawn up by Robert that some 40 people in the Thule district have directly descended from Robert E. Peary and Aleqasina, including the now deceased Anaukaq and Peter as well as babes in arms and several people away in southern Greenland at the time of my visit. In a poetically appropriate tribute to the lifelong relationship of two courageous men, there lives in Qaanaaq an attractive couple—Kista, 29, and Kitdlaq, 36, and their two children. Kista is the great-granddaughter of Robert E. Peary; Kitdlaq is the grandson of Matthew A. Henson.

At the party Pauline and Kissunguaq held for me on the eve of my departure, to be sure I had met my "whole family," I learned from an impassioned speech by Kali's son, Talilanguaq, that from his recent visit to America he

and his relatives felt that Ootah, leader of the four Eskimos who had accompanied Peary and Henson on the final dash, had not been given sufficient credit for the discovery of the Pole. Without Ootah, he insisted, the expedition could never have succeeded.

That speech resulted in an interesting discussion of the contributions of each member of the polar party to the final victory. It was agreed that the six-man team itself won the success, but that in fact there could be no "co-discoverers"—not the versatile, capable, loyal Henson, nor the brave and aggressive Ootah, but just one discoverer of the Pole, Peary himself, who had selected, organized, financed, trained, directed, led, and put that team in position for the final successful assault.

On that long and joyous evening, I caught the mood and spirit of my relatives—watching and listening while Kali, the lovable patriarch, regaled the group with humorous stories of his adventures and danced and chanted a traditional drum song; while husky, deep-voiced Kissunguaq played the organ and sang with gusto; while all joined in slow songs about their love for their "beautiful big country," and after the last long-drawn note burst into laughing, cheering applause.

I was touched by speeches in appreciation of my visit and joy in discovering through me their American cousins, and by farewell gifts presented by shy but smiling children: bearskin mittens from Kali; the polished claw of a bear killed by Peter, from his widow and two daughters; a gleaming five-foot narwhal tusk from Talilanguaq; a shining two-metal harpoon point on a lanyard from Magssanguaq, Anaukaq's son; a huge aerial color picture of Qaanaaq from Robert; a dog whip from Iggianguaq, no relation but a friend from the long-ago summer of the monument building at Cape York. But the list gets long.

Looking down the tables at that array of kind faces, I realized with pride that these, my relatives, were leaders of their people—their representatives in government, those to whom others came for counsel, the most skillful hunters and sled drivers (still the measure of a man in this high Arctic). And from this I concluded that the blood and the driving, enduring spirit of Robert Edwin Peary, the discoverer of the North Pole, live on in this wild and fiercely beautiful country, his "own domain," to which he devoted so much of his life. □

MAYOR TURNED TEACHER, Pauline Peary Kristiansen, Kali's daughter, teaches math at her school in Qaanaaq (below). All smiles, her granddaughter Tavfinguaq Peary celebrated her eighth birthday traditionally, with presents and tea and a rare feast of hiviaq. *An acquired taste, hiviaq consists of whole birds that have fermented for months in a sealskin.*

The Henson Family

By S. ALLEN COUNTER
PROFESSOR OF NEUROSCIENCE, HARVARD UNIVERSITY

THE OLD POLAR ESKIMO, bent a bit at the waist but with smooth, dark skin and black curly hair that belie his 80 years, heads briskly through the snow toward his dogs. Curled up like giant woolen balls, partially hidden from a recent blizzard, the wolflike beasts come to life in response to his calls, *"Qimmeq, qimmeq,"* shaking the crusted snow from their thick coats and yawning with a soft howl.

When Anaukaq, son of Maripaluk, reaches the dogs, he greets each of them by name, patting them on their heads as they stretch and wag their tails. Anaukaq is there to hitch them up for a trip, and they sense it. They immediately begin to make the whining sounds associated with a trek across the ice, for a Polar Eskimo dog would rather be running than sleeping.

With the smooth skill of a professional, Anaukaq untangles the traces that tether each dog separately to stakes driven deep into packed snow—traces now made of durable nylon rather than of the more perishable sealskin used in his youth.

The big dogs prance about and snap at one another excitedly as Anaukaq pulls each by the traces and connects them, one by one, to the front of an eight-foot wooden sled with tall rear upstanders. He beckons me to a thick reindeer-skin seat and we're off, heading down the hillside to the frozen bay, with Anaukaq cracking his whip above the dogs' ears.

His 18-year-old grandson, Nuka, runs out from the house and jumps on the sled, whip in hand. The family has assigned him to chaperone his grandfather over the dangerous, broken ice mounds scattered across the frozen sea—subtly, of course, so as not to hurt the old hunter's feelings.

The eight dogs pull us at incredible speed. *"Harqu, harqu, harqu,"* the old man yells, directing the dogs to the left. *"Atsuk, atsuk, atsuk,"* and, like the turning wheels of a car, dogs and sled move to the right. Anaukaq looks back and laughs as he detects my admiration. Dogsled driving is considered a Polar Eskimo's greatest skill, and Anaukaq has a reputation for being among the best.

Perhaps these skills were learned. Or maybe he was born with this talent, for his father was called by many one of the greatest dogsled drivers in the world. Anaukaq is the son of

ROBERT E. PEARY COLLECTION

JACK-OF-ALL-TRADES, Ajako Henson hunts, manages the local store, bank, post office, and transport service (all under one roof), and acts as mayor in the settlement of Moriussaq, where he and his wife, Puto, live. His famous grandfather, with a musk-ox calf around 1900 (left), was known to the Eskimos as Maripaluk, or Kind Matthew.

Matthew Alexander Henson, one of the first two Americans to reach the North Pole. Polar Eskimo by culture, but much darker and with very curly hair, he bears a remarkable resemblance to photographs of Henson I have studied over the years.

After about a half hour's ride we reach the offshore seal traps set by his son Avataq. Anaukaq chops a hole in the ice around the rope tied to a stake. He tugs on the rope several times to see whether a seal is attached. "No luck," he says. We'll come back tomorrow, as Anaukaq enjoys this chore. He would feel useless if he did not have some food-gathering responsibilities. So his five sons permit him to travel the bay with his grandchildren to check their seal traps.

Returning to the warmth of his son Ajako's home, constructed of wood though still called an igloo, we pull off our snowshoes and shoes. With a pocketknife Anaukaq cuts off a raw, bloody sliver from a large walrus slab hanging just inside the door. "*Mamartoq*—very tasty," he says, cutting a second sliver for me. I try to fake it. "Mamartoq," I say, but without conviction.

In the central room Anaukaq's daughter-in-law Puto is scraping the fat from a polar bear skin that will make pants for Nuka, who has just killed his first *nanoq*. The sweet aroma of polar bear stew permeates the house. She hands a small piece of fat to her father-in-law as a token of respect. "Very tasty!" he says in thanks for the delicacy.

Anaukaq tells me that since childhood he has heard many stories about the great Maripaluk (Matthew the Kind One), stories that have made him proud. Henson, he says, was the most popular man ever to visit his land. Polar Eskimo legends and songs tell of how masterfully Maripaluk could drive a dogsled or hunt and skin a *puihi* (seal) or kill an *aaveq* (walrus). Then of course there was his long trek north, across the great sea with Ootah, Seegloo, Egingwah, Ooqueah, and Peary, to that strange place at the end of the sea ice they called the North Pole.

The Eskimos would never have traveled so far from land in pursuit of Peary's obsession were it not for Maripaluk's presence and persuasion. Henson knew intimately most of the 200 or so members of the settlement. He spoke their language and was accepted as one of them. Peary, the commander of the expeditions, could provide them with pay in the form of goods and much desired hunting rifles. But Henson was to them the man who made the expeditions work. Even the great Ootah said that while the others on Peary's expeditions were like children in the ways of the Eskimo, Maripaluk was a natural in their world.

Once their goal was achieved, once the "Stars and Stripes [were] nailed to North Pole," Peary and Henson left Greenland, never to return. But both left behind legacies and legends. Anaukaq is part of that legacy.

My visit to Moriussaq had roots some years earlier when I was a visiting professor at the Karolinska Nobel Institute in Stockholm, Sweden. When some of my Swedish colleagues began to talk about Arctic exploration, I interjected proudly that a black American had made significant contributions to that field. To my surprise they knew all about Matthew Henson, an unsung hero to most in his native country. One Swede who had traveled to Greenland told me that some Eskimos darker in complexion than others might be descendants of Henson, while others lighter in complexion might be Peary's offspring. Many Danish men stationed in Greenland left mixed children behind, and Henson and Peary had spent a decade in the Arctic.

In 1986 I was granted permission by the government of Denmark to travel to the northwestern reaches of Greenland to "conduct a scientific study of ear disease in Eskimos and to interview some of the Polar Eskimos who were familiar with early American explorations in the area." I was later given special permission by the U. S. Air Force to fly to Thule Air Base. Farther north at Moriussaq, village elders confirmed that the little dark man named Anaukaq was indeed the son of Maripaluk.

Anaukaq, respected patriarch of five sons and 24 grandchildren, told me about each of his children and pointed with greatest pride to the ones who had become hunters instead of technical workers under the Danes. He enjoyed watching his granddaughters practice the old way of preparing raw birds for burial in a sealskin pouch, to be eaten as a delicacy months later. But most of all, he enjoyed talking about the legends of his father and Peary. He and his "cousin" Kali had grown up together learning about their fathers' lives

HOME FROM THE HUNT, Avataq Henson dines by candlelight with his ten-year-old son, Magssanguaq, in their simple home in Moriussaq. Accessible only by dogsled or helicopter, the village (below) lies 50 miles south of Qaanaaq on Greenland's northwest coast. Magssanguaq's grandfather, Anaukaq, told him, "When you grow up, I want you to be a hunter . . . being a hunter is a great profession." The youngster, who shot his first seal at six, now hunts proudly alongside his father.

as hunters and explorers in Greenland. Kali, he said, was Robert Peary's second son and Anaukaq's best friend.

I traveled about 45 miles north to Herbert Island to meet Kali. Robert Peary had spent many days on this island hunting walrus in the 1890s. It still remains a fertile hunting ground. As soon as I entered this tiny settlement, I spotted a fit-looking, light-skinned man with Eskimo eyes standing in the entrance to a house. Wanting to know who the visitor was, he came out to meet me, smiling cheerfully. Right away I could see the striking resemblance to Robert Peary. Like Anaukaq in our first meeting, Kali too thought that I must be a Henson. Why else, they reasoned, would a black American have come so far to see them?

Kali traveled back to Moriussaq with me so that I could learn more from him and Anaukaq about their growing up in Greenland. Both revered their fathers but agreed that Maripaluk was the more highly regarded among the Eskimos. Kali told me of his abandonment by Peary and said that his mother had been poorly treated by the other Eskimos for her relationship with Peary. Both said they had never had any contact with their American relatives, and their lifelong dream was to visit America to meet them.

BACK IN THE U. S., I began the search in earnest. "Hallelujah, God bless you for finding our relatives," remarked one Henson. The American Pearys' response was not so warm. They questioned my motives for bringing this information before the public and were less than eager to establish contact with any Eskimo Pearys.

I returned to Moriussaq in the late fall of 1986 with gifts and photographs of the American Hensons for Anaukaq—including a blanket personally knitted for him by his cousin, Olive Henson Fulton.

"Qujanaq, qujanaq—thank you," he said over and over. "Now that I know I have relatives over there, I must go to see them," he said, laughing with joy. Ill with prostate cancer, he asked whether I could help him and his sons visit their American relatives and see his father's grave before he died. And he wanted Kali to come along if possible.

And so it came about that on May 29, 1987, Matthew Henson's and Robert Peary's sons set foot on American soil. Feted by Harvard University, whose president, Derek Bok, presented Anaukaq and Kali with awards of recognition at the "North Pole Family Reunion" banquet, and given a backyard barbecue by cousin Olive, they toured East Coast places of major significance in their fathers' lives. These stops included the Explorers Club in New York City, of which Peary had been president and which elected Henson to honorary membership—the first black so honored; Matthew Henson's birthplace and a school bearing his name in Maryland; and the Abyssinian Baptist Church in Harlem, where he had been eulogized. Washington, D. C., celebrated June 3, 1987, as Matthew A. Henson Day, and at Arlington National Cemetery, Kali Peary laid a wreath he had brought from Greenland at his father's grave.

My Harvard students and I took Kali, his children, and some of the Greenland Hensons to the Peary-MacMillan Arctic Museum at Bowdoin College in Maine. Once more I appealed to the Maine side of the Peary family to let Kali meet his half brother Robert Jr., then 83 and living in nearby Augusta. The visit was brief, but Kali and his children enjoyed

SIGNS OF MODERNIZATION abound in Ajako and Puto's house: a telephone, television, and electronic organ—played by their son Nuka—and even a compact disc player for Ajako's country-and-western collection. Tiny but prosperous, the general store sells everything from stamps to sheepskins. Brother Kitdlaq (bottom, with wife Kista and baby Aviaq) also lives well, offering dinner guests fine Médoc wife with their roast seal.

it. "For the first time in my life," Kali said to his brother, "I feel like a Peary."

Our last stop was the Woodlawn Cemetery in New York City, where Matthew Henson was buried. After placing a wreath, Anaukaq stared silently down at the headstone. "My father must have had a tough time up in our land. He must have been very cold at times," he said. "My father. My father." Then he turned to us: "I too will be asleep soon. I am now ready to go back home to die."

Three weeks after his return to the Arctic, Anaukaq was dead.

WHY HAD PEARY a noble tomb in Arlington National Cemetery and Henson a simple grave in New York? I had the difficult task of explaining to my Eskimo friends the nature of American racial prejudice and the disparate treatment of their respective fathers. Rarely has a man given so much of his life to the honor of his country and received so little in return as Henson. Rising from the lowly background of a sharecropper with only six grades of schooling, he deserved a permanent

place of honor in history for his contributions to polar exploration. Leaders of black America gave him that recognition. But mainstream America of 1909 found it hard to accept the fact that Peary had selected a black man over his five white assistants to travel the final and glorious leg of the North Pole journey. Certainly in 1909 European Americans would not recognize a black man as an equal or grant him a share of the prize.

Eventually Peary was given both national and international recognition. Gold medals were heaped upon him, including a special award from the National Geographic Society, while Henson was largely skipped over. Between expeditions Peary returned to his Navy post, while Henson made do with menial positions in a Navy yard, as a railroad porter or janitor, or joined Peary on lecture tours, dressed in Polar Eskimo regalia, to help raise money for further Arctic exploration. Peary retired as a rear admiral; Henson retired on a pitiable pension as a messenger in the Federal Customs House in New York.

But ever since their days in the Nicaraguan jungle and throughout their shared ordeals in the Arctic, their mutual respect remained solid. For that period Peary was unusually progressive and fair in his treatment of Henson, who enjoyed an almost unheard of equality in the far north. This bothered some of Peary's teammates—one protesting vehemently of Henson's "freedom and insolence" and Peary's apparent "indifference" toward it.

Peary's most loyal and trusted companion for over 20 years, Henson shared many of his

NGS PHOTOGRAPHER JAMES P. BLAIR (LEFT); E. ALLEN COUNTER

OLD COMRADES, Matthew Henson and Robert Peary now lie side by side at Arlington National Cemetery. In 1987, just before he died, Henson's Eskimo son, Anaukaq, visited the simple gravesite (above) in Woodlawn Cemetery, New York City, where his father had been buried in 1955. On April 6, 1988, Henson's Eskimo and American relatives solemnly witnessed the explorer's ceremonial reinterment—with full military honors—exactly 79 years after he reached the Pole.

most intimate secrets. He knew all about Peary's sexual liaisons and the children he fathered with Aleqasina. Both he and Peary would have seen their two-year-old sons when they returned to Etah in 1908. But Henson never breathed a word of this in public.

WHEN HENSON read of Peary's death in 1920, a friend reports, he went into the bathroom and ran the tap water to mask the sound of his weeping. In spite of their differences in race, status, and condition, their years of Arctic exploration had made the two men more like brothers than friends. Though he had little further contact with the Peary family, Henson traveled to Arlington nearly every year to place a wreath at Peary's grave —until death overtook him in 1955, at age 88.

Before our final parting I told Henson's son Anaukaq that I had written to the President of the United States to ask that he transfer Matthew Henson's remains to a place of honor among other heroes in Arlington National Cemetery. I said that I would continue to petition until I succeeded.

"If you do transfer him, I want my children to see it," he remarked. This was a request I am proud to have honored.

On April 6, 1988, ceremonial volleys echoed through the stillness of Arlington National Cemetery. By order of the President of the United States, Matthew Alexander Henson was buried with full honors beside the friend and companion with whom, 79 years earlier, he had stood at the top of the world. □

New Atlas Unfurls Nation's

Before we present you the matters of fact, it is fit to offer to your view the Stage whereon they were acted: for as Geography without History seemeth a carkasse without motion; so History without Geography, wandreth as a Vagrant without a certaine habitation.

—CAPT. JOHN SMITH, 1624

FOLLOWING the famous Captain Smith, who (thanks to Pocahontas) survived to comment on the necessary partnership of history and geography, we offer *to your view* our present *Stage*. For the Society, I am delighted to announce publication of National Geographic's *Historical Atlas of the United States*, a cartographic guide to the development of the United States. It is the first atlas of such scope to appear in more than 50 years.

As I watched the *Historical Atlas* take shape and substance over the past two years, I grew convinced that every American student should have the chance to use it—for schoolwork, of course, and also to go traveling through our country's history for the adventure of it.

Therefore, as part of the Society's centennial celebration and as a gift to the nation, the Board of Trustees has directed that a copy of the atlas be sent—at no cost—to every U. S. school with ninth-grade students or higher. This means some 35,000 schools: public, private, and parochial from Guam to Puerto Rico and from Key West to Nome.

Students and Society members will find the atlas to be a true book of maps: some

TRACKING the great adventure of the developing United States, the Society's new Historical Atlas includes, from left, a 1793 map of the young U. S. made by the geographer of an old enemy, Britain's George III. Characteristic American house types are displayed in a section on "People." The Jazz Age of the 1920s whoops it up in a "Chronology" spread. Cadillac tail fins show evolution of automotive styling in the "Economy" section.

Fortune hunters crowd gold-and-silver boomtown Creede, Colorado (top), in about 1890. Creede survived—and still mines.

PHOTOGRAPH BY WILLIAM HENRY JACKSON

History

By GILBERT M. GROSVENOR
PRESIDENT, NATIONAL GEOGRAPHIC SOCIETY

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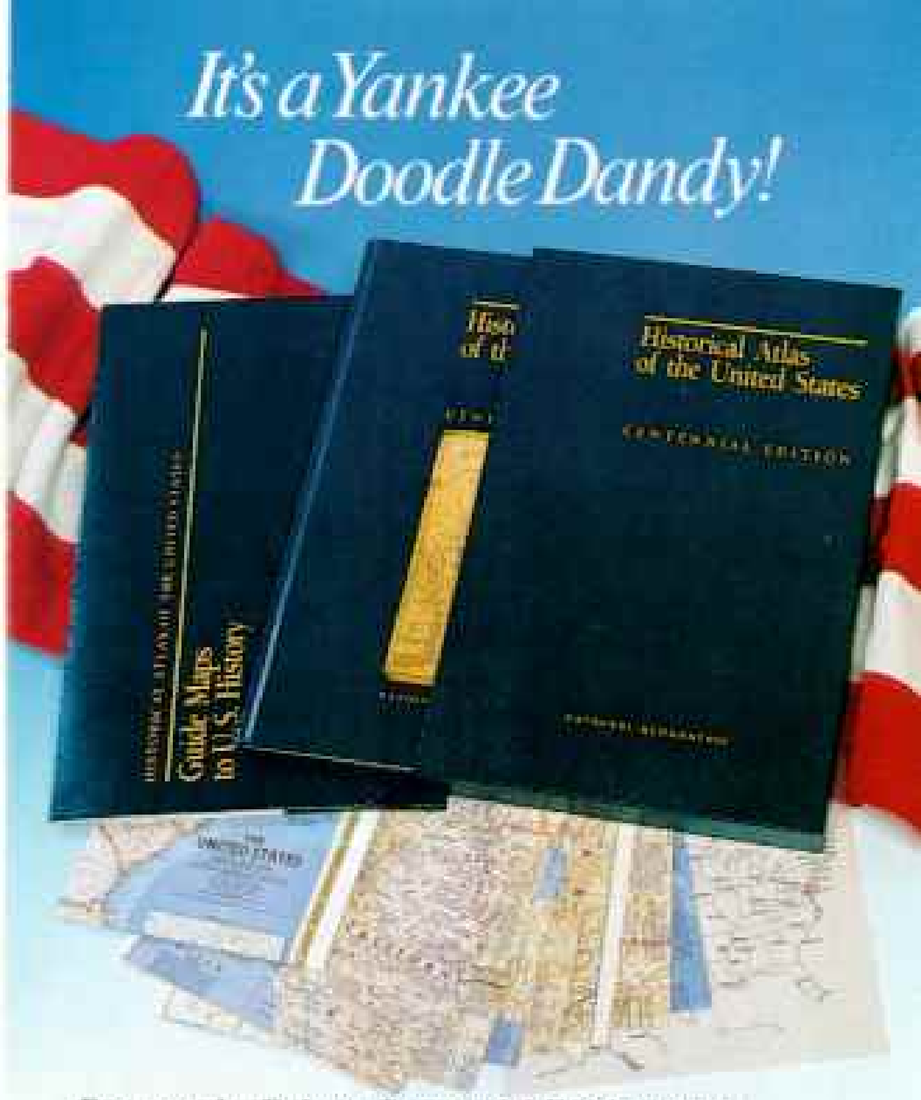

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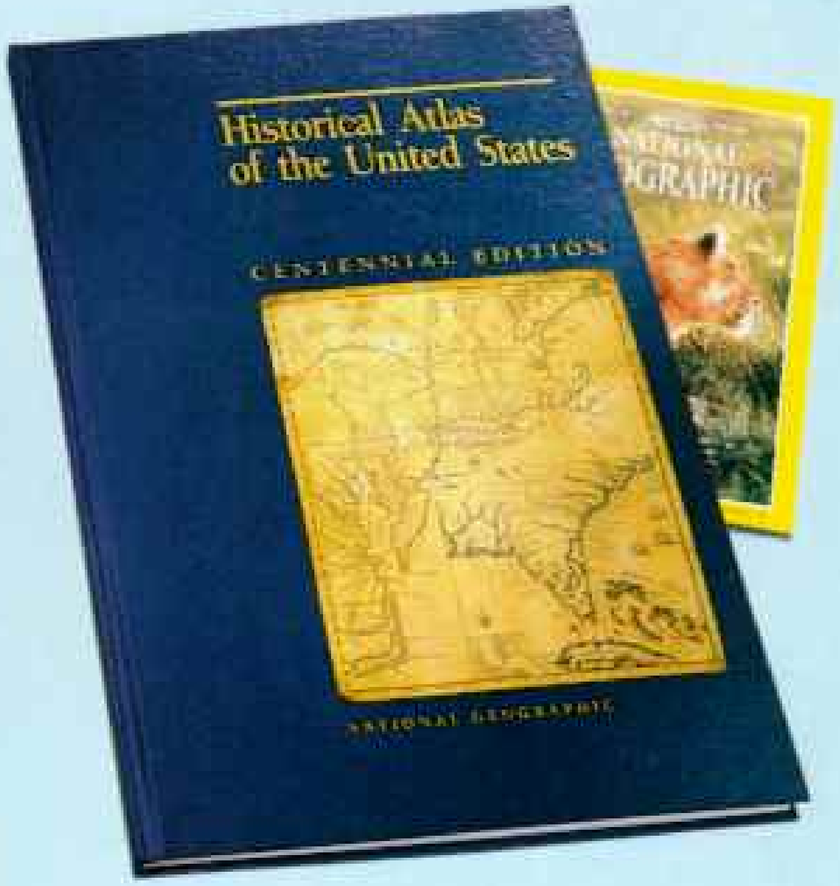

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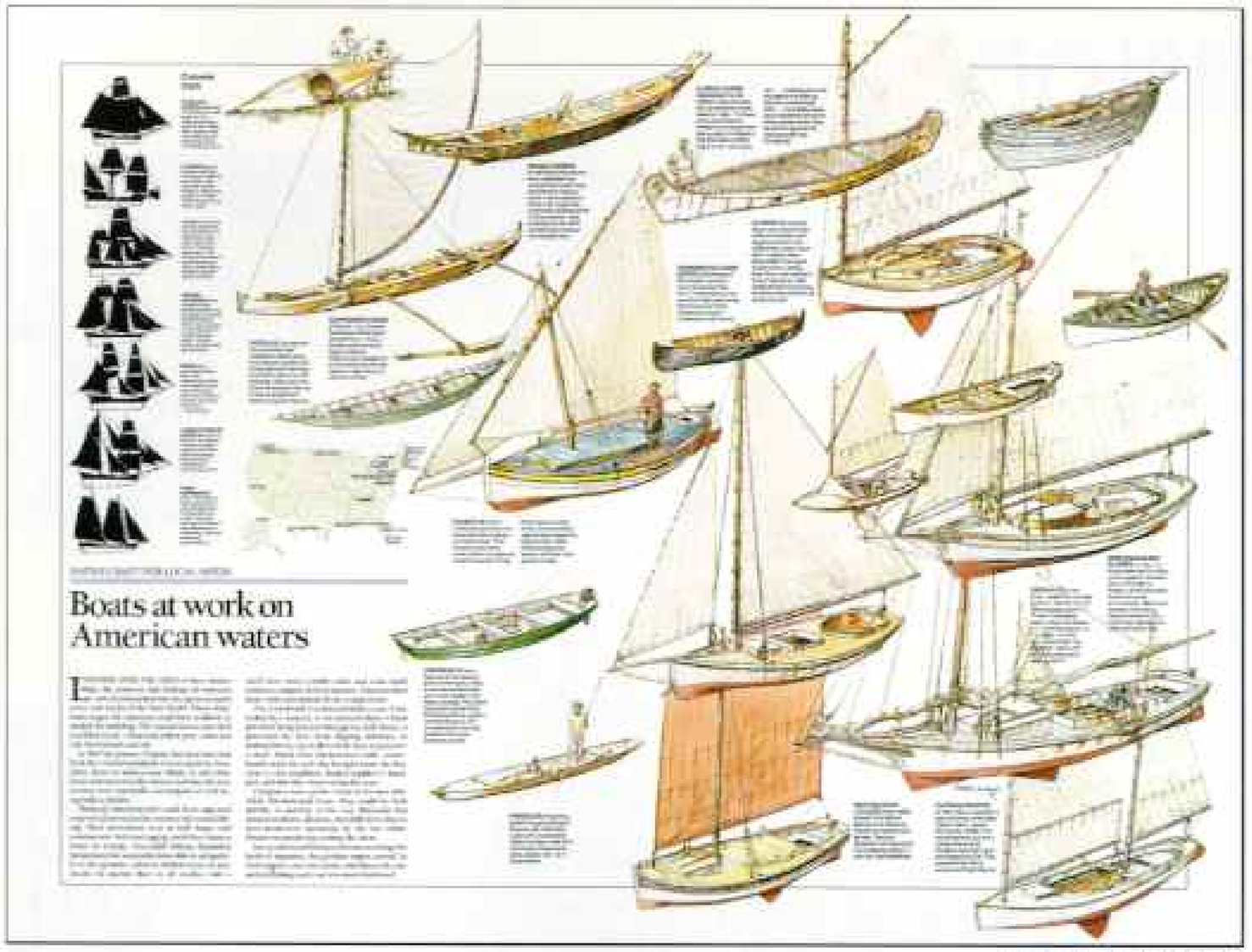

PAINTING BY RICHARD SCHLECHT

NATIVE INGENUITY of ordinary Americans is documented here in the designs of workboats and throughout the Historical Atlas *in other detailed views of such subjects as barns, early industry, and colonial farming.*

600 antique maps, period maps, specialized maps, and new maps, many made from data never before mapped. Their range is enormous, from 17th-century maps (one shows the Pacific Ocean to be "ten dayes march" from Chesapeake Bay), to a spy's map detailing disposition of the Continental Army at Valley Forge, to a map in a section on American language that locates places in which people call heavy rainstorms "toad-stranglers."

Charts, graphs, and hundreds of photographs and other illustrations illuminate the cartographic story. Many are rare period pieces, while others were specially commissioned. For instance, a highly detailed painting captures the Ford assembly line, which changed the very nature of manufacturing. Another records—by name and trade—a street of merchants' shops in colonial Annapolis, Maryland.

The atlas explores the founding and growth of the United States by following major themes: land, people, boundaries, economy, networks, and communities. Five chapters called chronologies offer illustrated and mapped summaries of trends, events, and celebrated people sometimes in unfamiliar roles. For instance, we encounter Martin Van Buren not as a forgettable President but as a hard-nosed, favor-swapping, political boss active in promoting the presidential campaign of Old Hickory, Gen. Andrew Jackson.

The atlas is designed for use at many levels of instruction and enjoyment. The casual reader may browse, while the more curious can dig into the details. Students, especially, will find the comprehensive index to be a guide to finding the many connections between topics and chapters. A detailed bibliography is also included.

With this atlas we enter new territory. We invite you to come along on an adventure in history that would have appealed to that explorer, chronicler, cartographer, promoter, and "President of Virginia and Admirall of New England": John Smith. ☐

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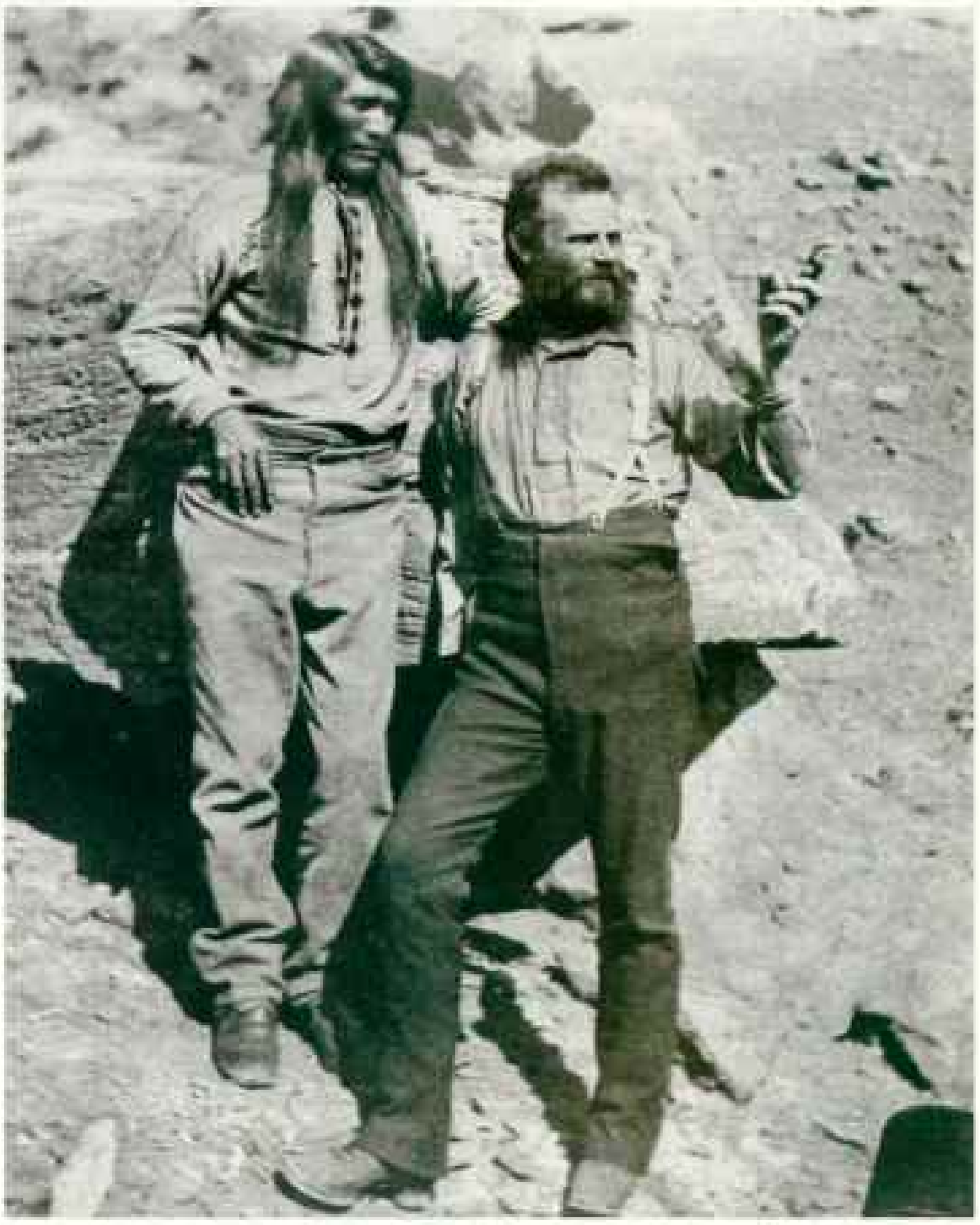
Exploring the world then and now

FOR A MOMENT during the 1890 expedition to Alaska's Mount St. Elias—the first ever sponsored by the Society—Israel C. Russell was startled by the vision of "a vast city, with battlements, towers, minarets, and domes of fantastic architecture, rising where we knew that only the berg-covered waters extended." This phantom city, he later wrote, was as eerie a mirage as any ever witnessed in faraway deserts.

In this month's issue we revisit an era when the world seemed full of such marvels. The edge of the unknown was as close as Alaska, and mysterious cultures beckoned from distant lands. To search out these mysteries, to stretch the imagination—these were the goals of the Society's early explorers, as they remain our goals today.

This search has carried us a long way during the past hundred years. Yet I find it reassuring to discover in the many things we do today threads that lead back to where we began.



MAJ. JOHN WESLEY POWELL TALKS WITH TAU-GU, A PAIUTE, DURING POWELL'S 1871 EXPEDITION DOWN THE COLORADO RIVER. PHOTOGRAPH BY JOHN K. HILLERS, COURTESY SMITHSONIAN INSTITUTION.

Our lecture program, for example, was launched on February 17, 1888—eight months before the debut of the magazine. The first lecture was given by Maj. John Wesley Powell, a Society founder who'd made his name as a daring explorer of the Colorado River. Since then we've hosted some 2,300 lectures, each captivating audiences with tales of exploration, adventure, and travel.

These lectures, by the way, eventually inspired our award-winning Television Specials. As early as 1913 speakers at these events were showing motion pictures, among the first of which was "The Valley of Ten Thousand Smokes," a documentary about an expedition to Alaska's volcanic Katmai region. The success of the lecture film *Bones of the Bounty*, which was broadcast on television in 1958, convinced my father, Melville Bell Grosvenor, that we should produce our own TV shows. Today our Specials still head the list of the most popular programs ever shown on public television.

RUINS OF THE LOST INCA CITY OF MACHU PICCHU IN PERU WERE INVESTIGATED BY HIRAM BINGHAM, RECIPIENT OF THE SOCIETY'S FIRST ARCHAEOLOGY GRANT IN 1912. PHOTOGRAPH BY HIRAM BINGHAM.

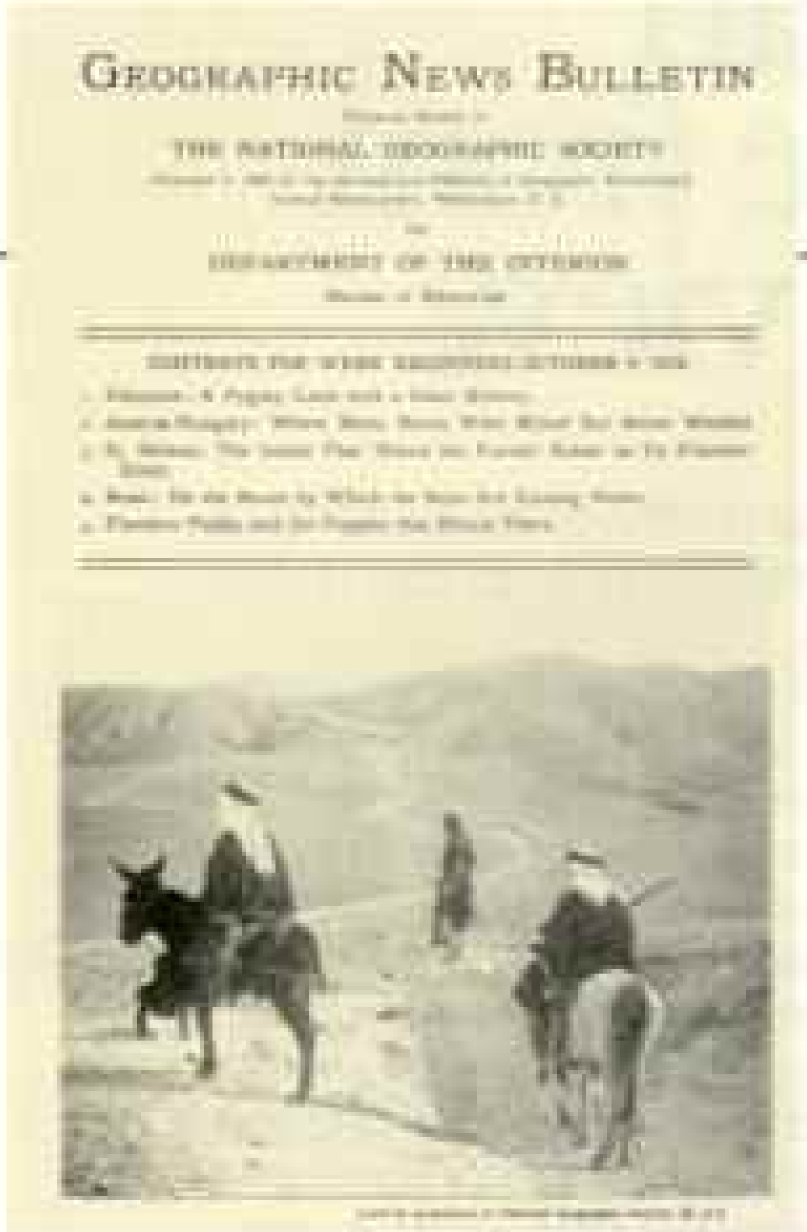
EXPLORERS MAKE THEIR WAY THROUGH GLACIERS OF SOUTHERN ALASKA DURING AN EXPEDITION DESCRIBED BY RALPH S. TARR AND LAWRENCE MARTIN IN THE SOCIETY'S FIRST BOOK, IN 1914. THIS FOUR-PICTURE PANORAMA (BELOW) SWEEPS ACROSS THE LOWER COPPER RIVER VALLEY. BOTH BY LAWRENCE MARTIN.

Another project reaching back to our beginnings is the Society's campaign to improve geography education. In January, as you know, we pledged 40 million dollars to establish the National Geographic Society Education Foundation. During the past few years our Geography Education Program has helped create a nationwide network of teacher alliances to improve teaching and curricula.

This campaign really started a hundred years ago. Our founders were just as concerned as we about our nation's lack of geographic awareness. An 1893 magazine article entitled "The Improvement of Geographical Teaching" was followed in 1895 by a special series of ten monographs on geographic topics. These were published, as we explained, "to render accessible to every public school in the United States, at a nominal price, accurate and properly correlated information upon the geography of our country, and expressed in simple, untechnical language."

Beginning in 1919, we reached even more directly into the classroom through our weekly school bulletins. These timely reports continued until 1975, when they were replaced by our popular WORLD magazine. Today our Educational Media Division offers not only filmstrips but also computer software for the classroom. We are even experimenting with interactive videodiscs to put vast stores of information at a teacher's and student's fingertips.

We've long been committed to offering lively reading to members of all ages, from our pop-up books for children to TRAVELER magazine and NATIONAL GEOGRAPHIC RESEARCH. Our first



GEOGRAPHIC NEWS BULLETIN

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OUR FIRST SCHOOL BULLETIN, IN 1919, REPORTED ON PALESTINE.

A PHOTOGRAPHER RECORDS A FUMAROLE IN ALASKA'S VALLEY OF TEN THOUSAND SMOKES, THE SUBJECT OF THIS 1920 FILM. PHOTOGRAPH BY JASPER D. SAYRE.

book is considered a classic. Published in 1914, *Alaskan Glacier Studies*, by Ralph S. Tarr and Lawrence Martin, still provides glaciologists with the best early descriptions of Alaska's southern ice fields.

In the first issue of NATIONAL GEOGRAPHIC we announced the new magazine "in the hope that it may become a channel of intercommunication, stimulate geographic investigation and prove an acceptable medium for the publication of results."

Since then, we've expanded our scope considerably and evolved into other media. But we've never lost sight of what our members want. And we've never let the medium—whether print, film, video, or software—distort our fundamental message: The world is still a place filled with marvels for each of us to discover.

Gilbert M. Grosvenor

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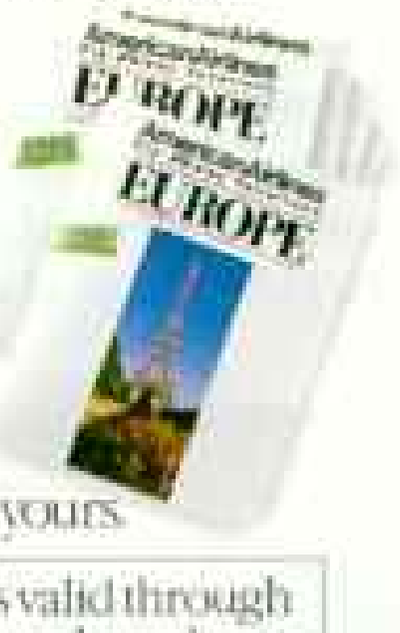

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Members Forum

Wool

My compliments on "Wool—Fabric of History" (May 1988), a story that spanned the gap between education and entertainment, giving readers a rare insight into this unique natural fiber. More than 100,000 individuals contribute to lamb and wool production in the United States, where consumers' growing enthusiasm helped boost the industry into economic vitality in 1988.

James G. Butler
Denver, Colorado

Nina Hyde's article reads like propaganda from the wool industry. Not a word about the widespread destruction of vegetation (and consequent soil erosion) by domesticated sheep or the continuing massacre of competing herbivores and predators in sheep-ranching areas.

Jean SmilingCoyote
Chicago, Illinois

As a sheepherder, I thank you for your excellent article on wool. It is a precious fiber, and much U. S. land would lie nonproductive if it were not for sheep. It is nature's true renewable resource.

Lorin L. Moench, Jr.
Salt Lake City, Utah

What a surprise to find not one line about the exceptional Icelandic wool. I have seen plenty of Icelandic fishermen wearing those beautifully warm Ice-wool sweaters.

Lana Kaja
Wadsworth, Illinois

You suggest that intricate patterns were knitted into Aran Isle sweaters for the purpose of identifying the bodies of drowned fishermen. According to the Reverend Richard Rutt, Bishop of Leicester and author of *A History of Hand Knitting*, "This morbid idea seems to stem from J. M. Synge's one-act play, *Riders to the Sea*. In it a drowned man is identified by the mistakes his sister remembered making in knitting his stockings. Misremembered, this incident developed into an elaborate and impossible theory about the meaning of patterns on (sweaters)."

Nancy Saunders
Severna Park, Maryland

Having raised sheep during my teens, I remember two men, 70 years old, who sheared the sheep in our area. Though their faces showed the effects of hot dry outdoor work, their hands did not. The skin was smooth, pliable, and wrinkle free. Their palms were callus free even though they labored on their farms daily. Lanolin in the wool they worked with was the reason, nature's answer to dry skin.

Judy Olson
Dublin, California

The article contained no reference to qiviut, the underwool of the domesticated musk-ox. Qiviut rivals cashmere and other specialty fibers in diameter and other qualities.

Sigrun C. Robertson
Anchorage, Alaska

Nina Hyde should have talked to Nicole Duplaix (Fleas) and discovered that the emergence of the wool industry in Britain during the Middle Ages was related to plague and fleas. The plague epidemic in the 1340s nearly halved the population of the British Isles. The need for food crops also halved, and arable land was turned into pasture to produce wool for the remaining population, which had become wealthier and exchanged their poor clothing for better woolen garments.

T. W. Schillhorn-van-Veen
Michigan State University
Haslett, Michigan

Kerala

As an immigrant from Kerala, India, I can vouch that the anecdotes about the Kerala people (May 1988) reflect our charismatic and colorful psyche. It has been stated (jokingly, of course) that Edmund Hillary and Tenzing Norgay on their expedition to Mount Everest were offered cups of hot beverage by an enterprising Kerala coffee shop owner at the summit.

Tom Mathews
Parsippany, New Jersey

Having just returned from a trip of technical assistance in Kerala, I recall an underemployed, democratic, well-educated, hardworking, godly, peaceful society. It is a natural region for the introduction of labor-intensive industries. Yet American interest in India seems nonexistent.

Bela G. Liptak
Stamford, Connecticut

Supernova

One of the most important aspects of Supernova 1987A received only a single sentence in your otherwise fine article (May 1988). The supernova that we see in the sky actually occurred 170,000 years ago. This event, as well as other astronomical events, gives us the opportunity to look directly into the past history of the entire universe.

Joe R. Hatfield
Conifer, Colorado

I have a speculation for author Robert P. Kirshner about the mystery spot: Could it be a brown dwarf companion to Sanduleak -69°202 (almost a star but not quite massive enough to kindle itself), for which the shock wave of SN 1987A provided the extra compression to momentarily ignite it but which quickly faded, unable to sustain its own fires? Such an object so close to Sanduleak -69°202 and SN 1987A would be extremely difficult to detect when in an "unexcited" state.

ROBERT W. BULAGA
Florissant, Missouri

It is doubtful, according to Kirshner. There would not have been enough energy from the supernova to have ignited such an object.

You state that sensors were placed 2,000 feet beneath Lake Erie. In the *World Almanac* Lake Erie is listed with a depth of 210 feet.

MAX MORPHEW
Spokane, Washington

The sensors are in a salt mine 2,000 feet beneath the lake bed.

Persian Gulf

The GEOGRAPHIC's coverage of the diverse political and demographic factors in the Persian Gulf (May 1988) was timely. Despite the already high stakes of the geopolitics there, events are "upping the ante." At the end of 1987 OPEC announced that their proven reserves of oil had

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risen by 160 billion barrels (an increase that by itself is seven to eight times U. S. reserves). This means that the Persian Gulf area holds more than 58 percent of the world's proven oil reserves. This fact, combined with skyrocketing oil imports during the last three years, has placed U. S. national security in grave jeopardy. Americans will need to learn much more about the nations of the Persian Gulf as our future economic destiny will increasingly depend upon them.

CHARLES K. EBINGER
Washington, D. C.

So many times Americans are ignorant of the history and culture of the Arab world. The conflict in the gulf can only be analyzed if we study the people and their history. Perhaps then we can hope to resolve this war and bring peace to the gulf states.

LISA BROWN
Athens, Georgia

I believe that our policy in the Persian Gulf is a failed policy, and we should try to change it. If the CIA had not overthrown Mohammed Mossadegh [the premier of Iran 1951-53] and supported the shah and his SAVAK [secret police], our relationship with Iran and probably much of the Middle East would be very different.

DAVID B. KRUGER
Lebanon, Pennsylvania

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Fleas

I was appalled to read in the May issue that "Spraying for fleas with DDT, Burma, Vietnam, India, and southern African nations have scored major victories against plague." DDT is one of the most persistent and environmentally damaging chemicals ever produced.

JOAN M. CROWE
Thunder Bay, Ontario

Many years ago, in the late twenties, my father took me on a trip to New York to see "the sights." The most curious of all was a flea circus down on the Bowery. For years I have vividly described, first to our children and later to our grandchildren, that amazing show of tiny fleas on a miniature carousel, pulling a golden chariot, playing on a seesaw, and kicking a tiny ball over a goal. The children often asked me to "tell them again about the flea circus." But the trouble was—not *one* of them believed it was true. Page 693 of your May issue has vindicated me at last—and, oh, how sweet it is!

FRANCES SHAFFER
Honolulu, Hawaii

Your statement that fleas jumping 150 times their own length is "equivalent to a man jumping nearly a thousand feet" perpetuates the error of scaling a flea's jump to its size. One could as logically say, a flea has six legs. In proportion to size, a man would have 500. Power and weight balance out, and "the height to which an animal can jump is more nearly independent of its size than proportional to it." The quote is from "On Being the Right Size," by J.B.S. Haldane.

DAVID E. BOSLEY
Grifton, North Carolina

If we are to believe that the AIDS virus can be passed with an exchange of needles or of tainted blood in transfusions, why not an exchange of blood via the flea or mosquito?

ARTHUR H. SANDERS
Deansboro, New York

Scientists have found no evidence that insects transmit the AIDS virus.

The article on fleas was well-done, but please no more. I have been itching and scratching for three days.

FRANK WHITESIDE
Rancho Santa Fe, California

Letters should be addressed to **Members Forum,** *National Geographic Magazine, Box 37448, Washington, D. C. 20013, and should include sender's address and telephone number. Not all letters can be used. Those that are will often be edited and excerpted.*

National Geographic, September 1988

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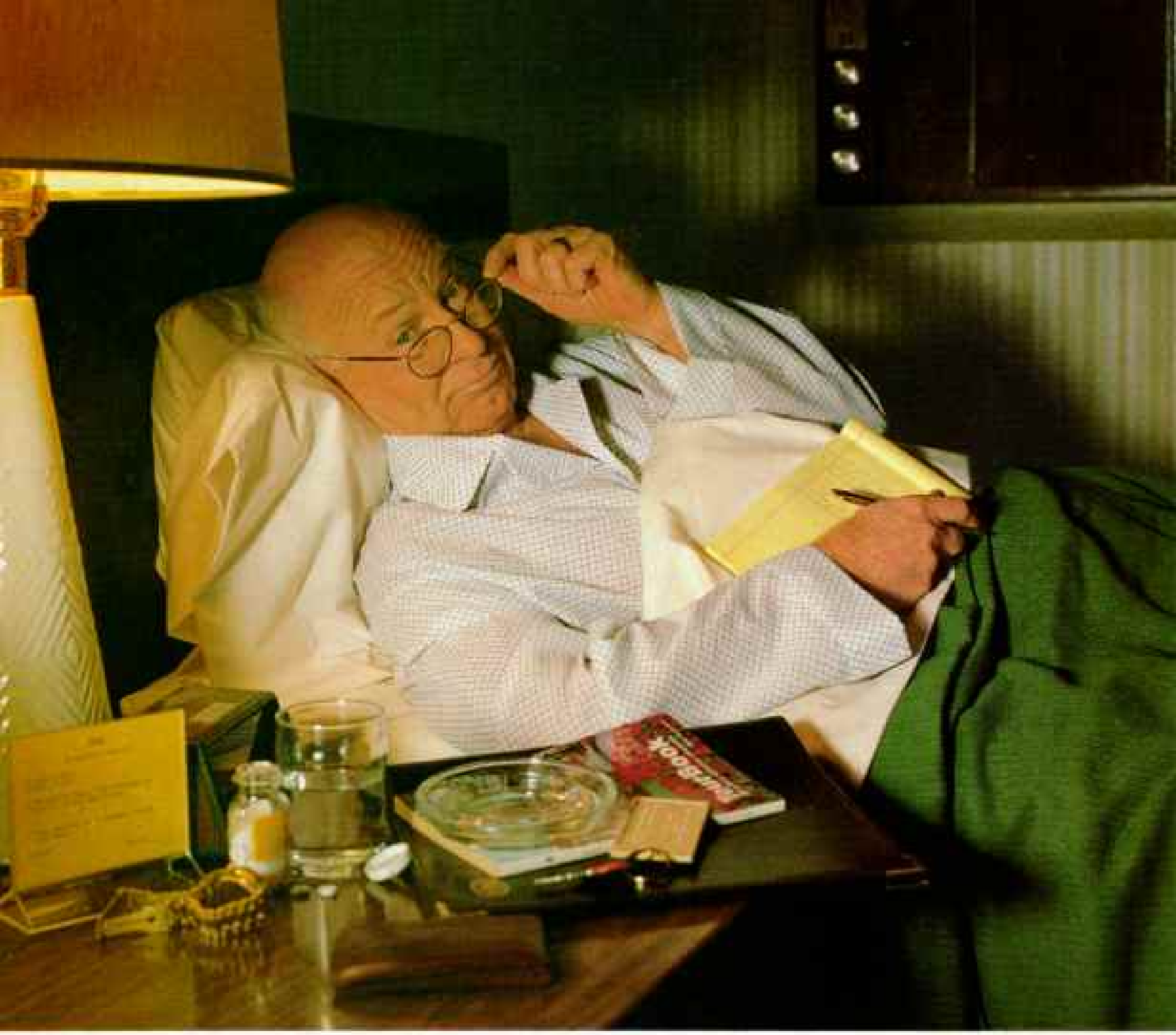

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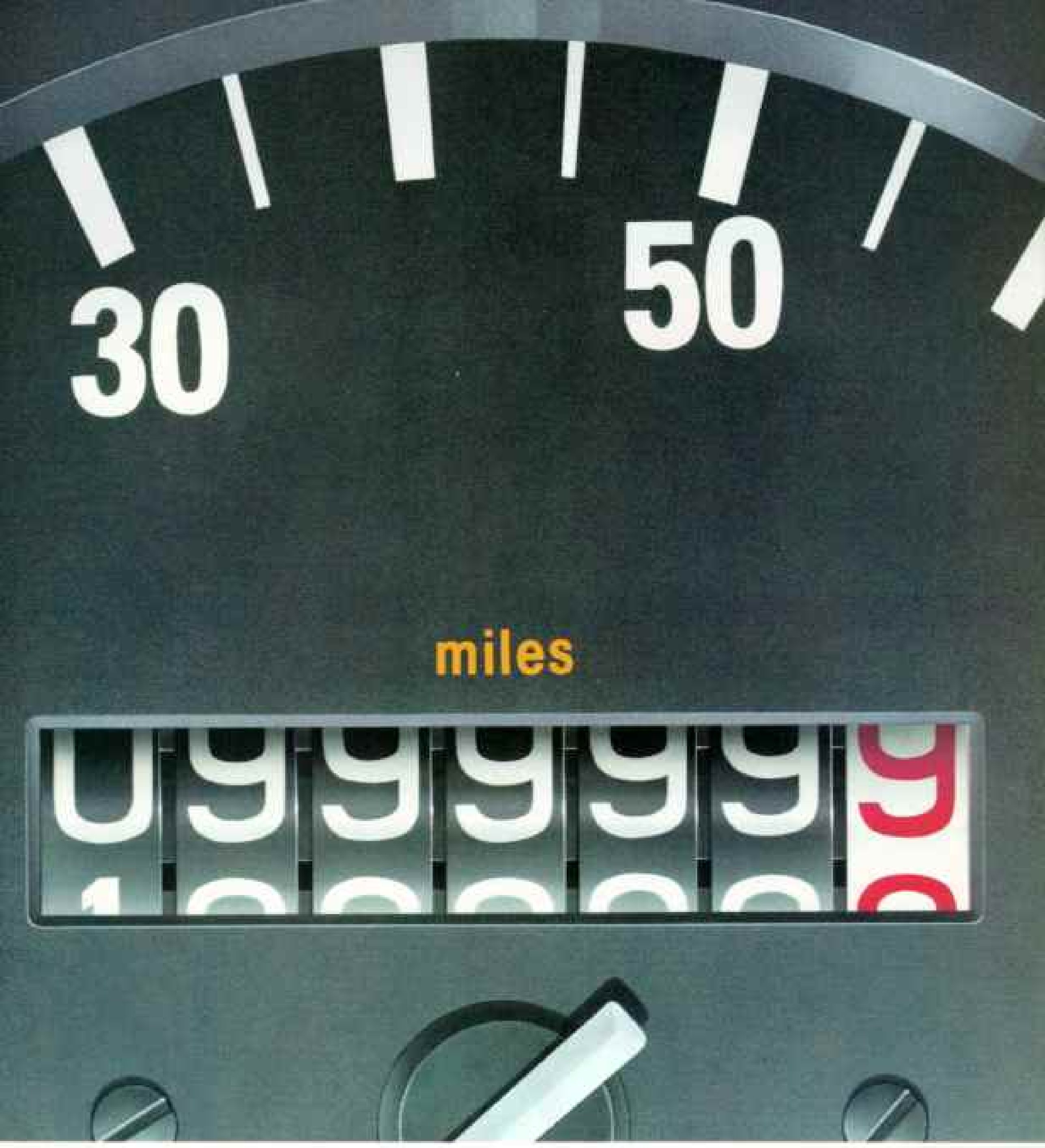

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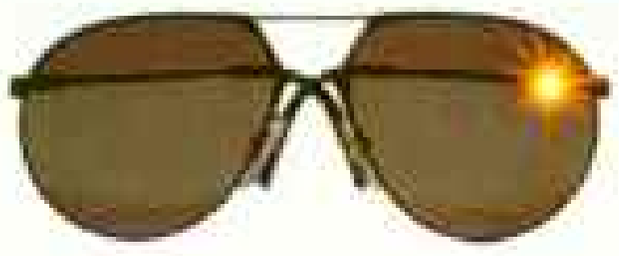

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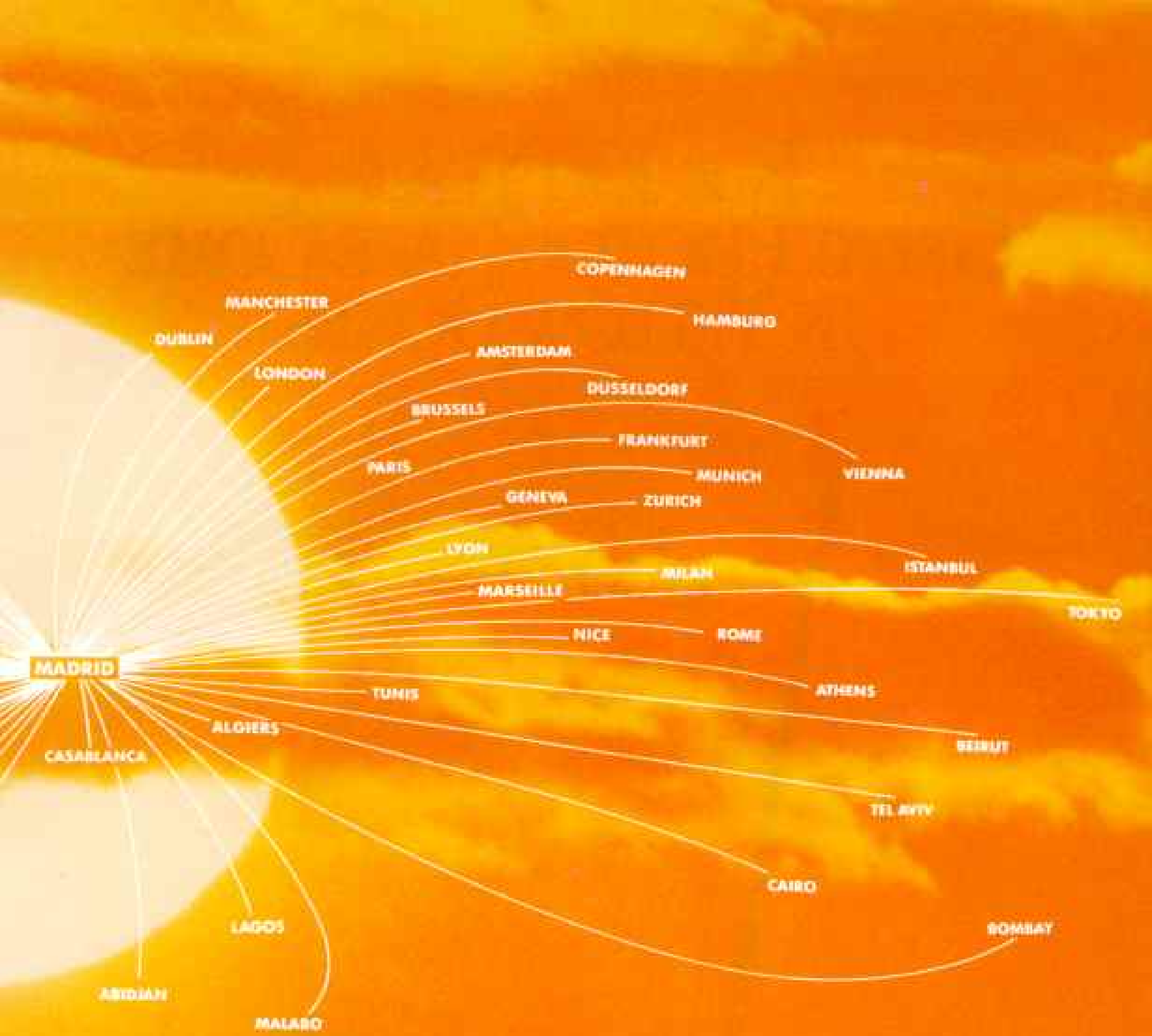

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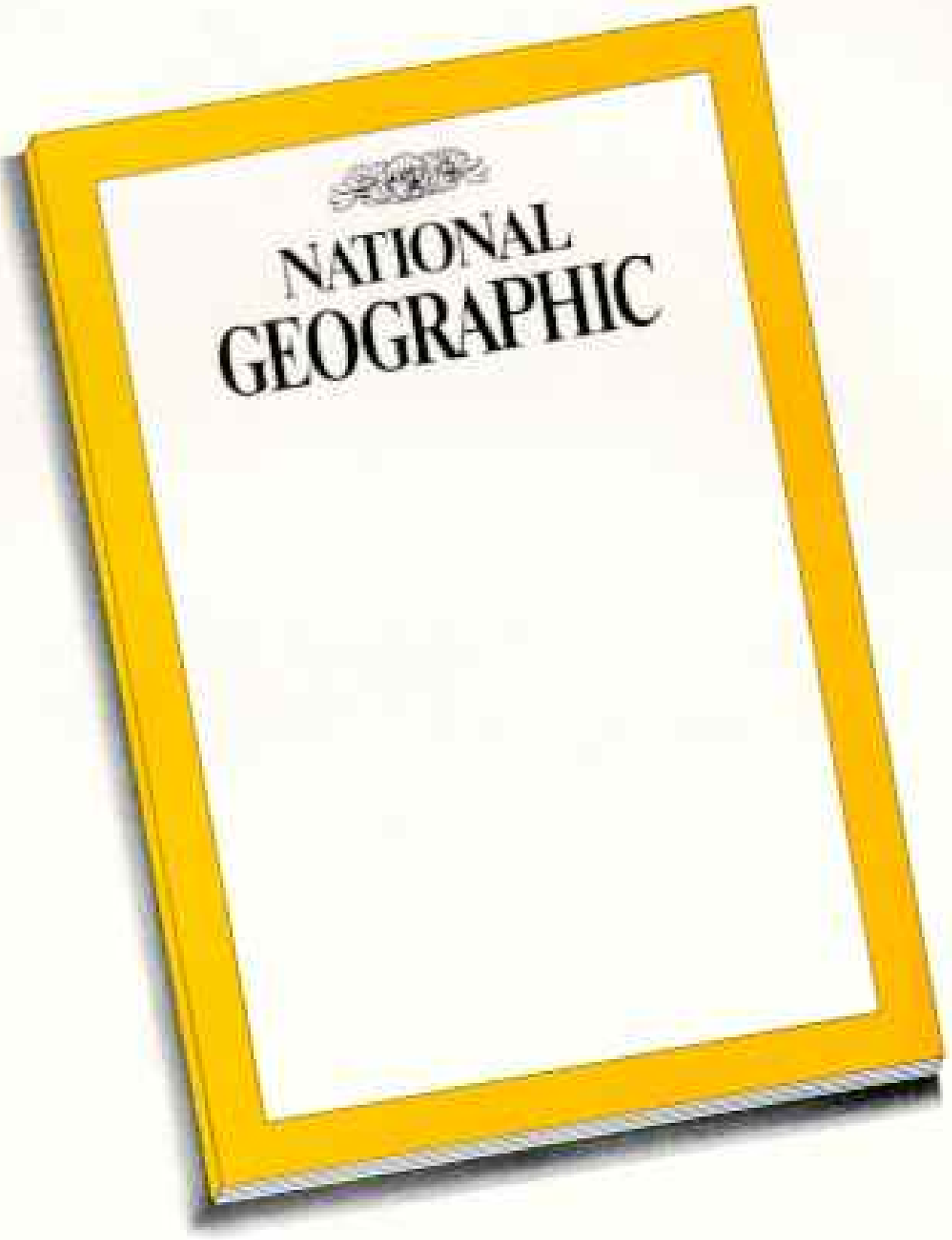

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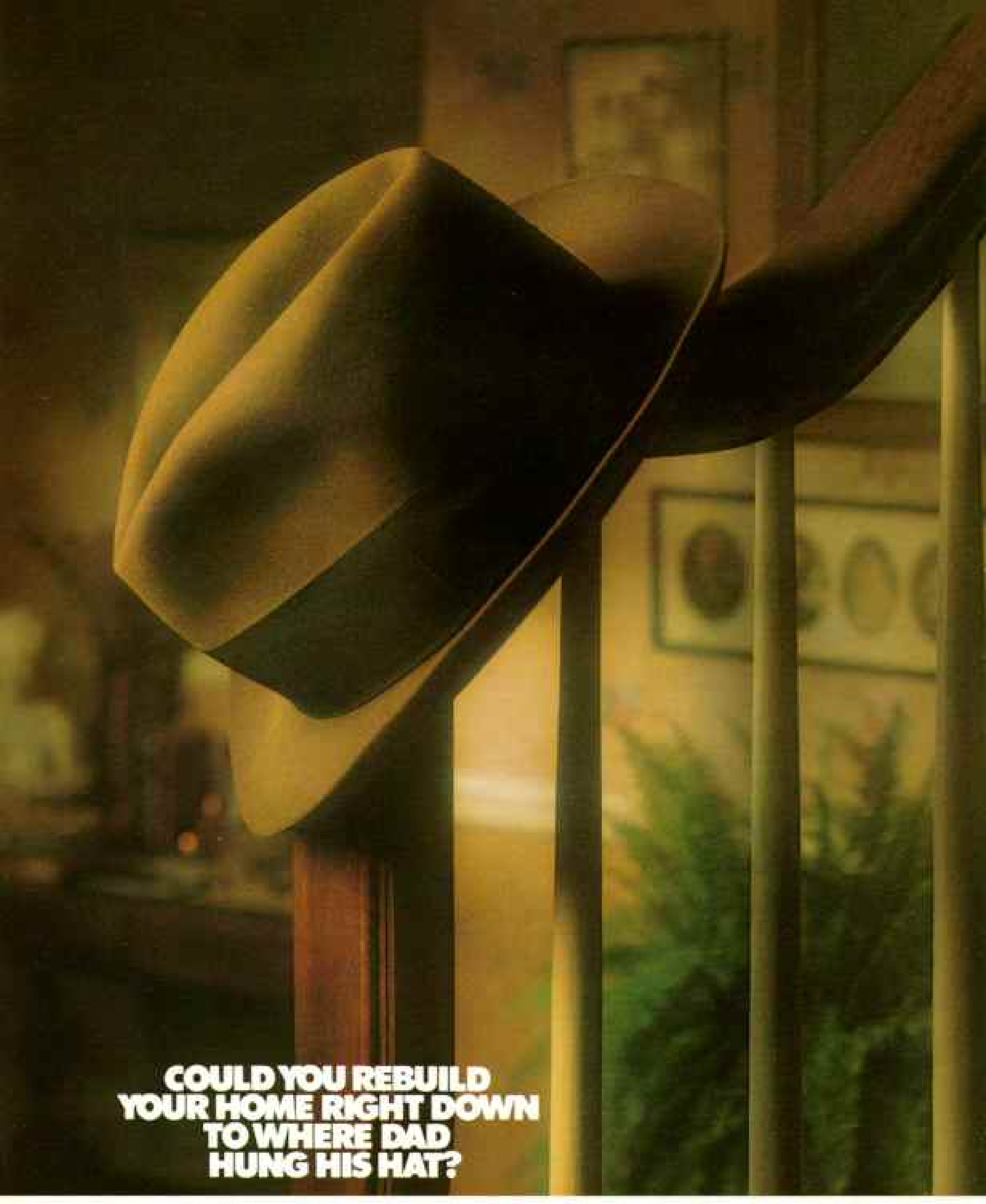

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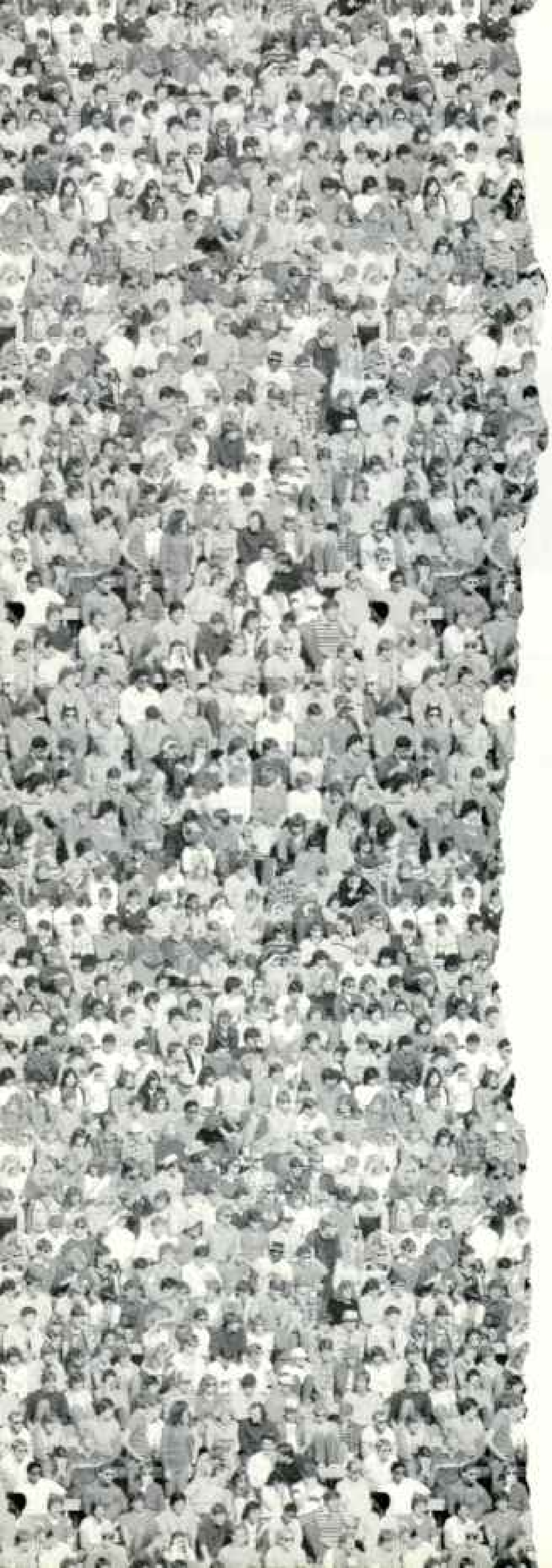

A GOVERNMENT OF HALF THE PEOPLE, BY HALF THE PEOPLE, AND FOR HALF THE PEOPLE.

The quote isn't accurate. But the numbers are.

In the last Presidential election, only 53% of those eligible actually voted.

The problem is worst among the youngest voters, the 18-to-24-year-old group. Less than half of them even register. Only 17% actually voted in 1986.

This shocking statistic prompted us to make a commitment to the Vote America Project.

Together, we are providing teaching materials to 25,000 high schools. And personal registration and voting booklets to over a half-million voting-age students. Our goal: to register every one of them. And to urge them all to become informed voters.

We're running a national TV campaign to encourage older voters, too.

Because when a government is *of* half the people and *by* half the people, sooner or later the worst thing happens. It becomes *for* half the people.

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The truth is, either approach would yield interesting results.

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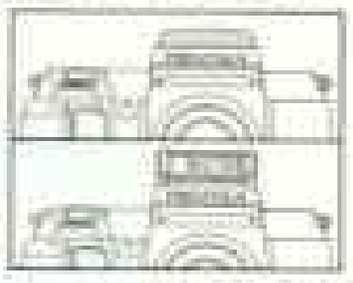
Shooting without would preserve the subtleties of skin tone and mood.

Fortunately, one Program Autofocus SLR with a built-in flash leaves the choice of exposure up to you. The Pentax SF1.

THE FASTEST AUTOFOCUS. THE FIRST RETRACTABLE TTL FLASH.

Choose your shot, and a built-in AF spotbeam and unique "SAFOX" optical system focus and calculate exposure in 0.3 of a second. You then decide to shoot with the self-adjusting TTL flash, or to flip the flash down and shoot without—and the SF1 will automatically compensate for F-stop and shutter speed.



The retractable TTL flash and AF spotbeam let you shoot day or night.

THE CHOICE IS YOURS.

When it comes to program modes, you choose from nine.

When it comes to lenses, your choices can range from ultra wide angle to super telephoto to making many regular K-mount lenses autofocus with an adapter.

With all these choices, no wonder the SF1 was chosen the top rated autofocus SLR of 1988.

Did we shoot with the SF1's flash or did we shoot without it? Ask your Pentax dealer.

For best results use Kodacolor Gold.

PENTAX SF1

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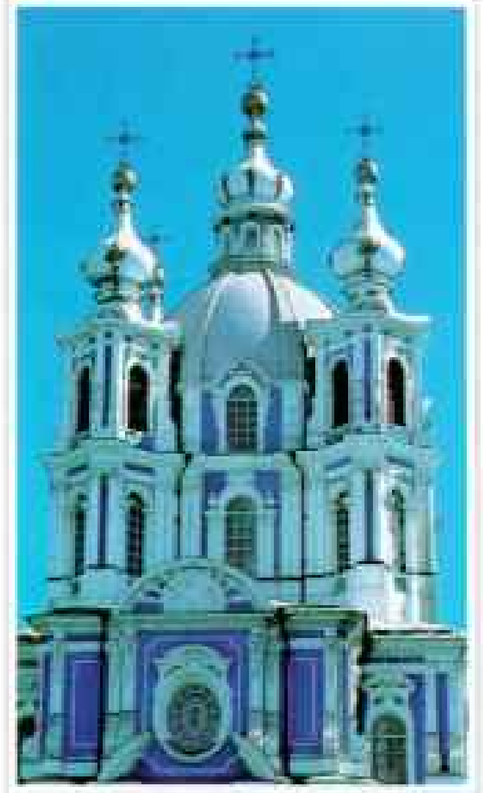

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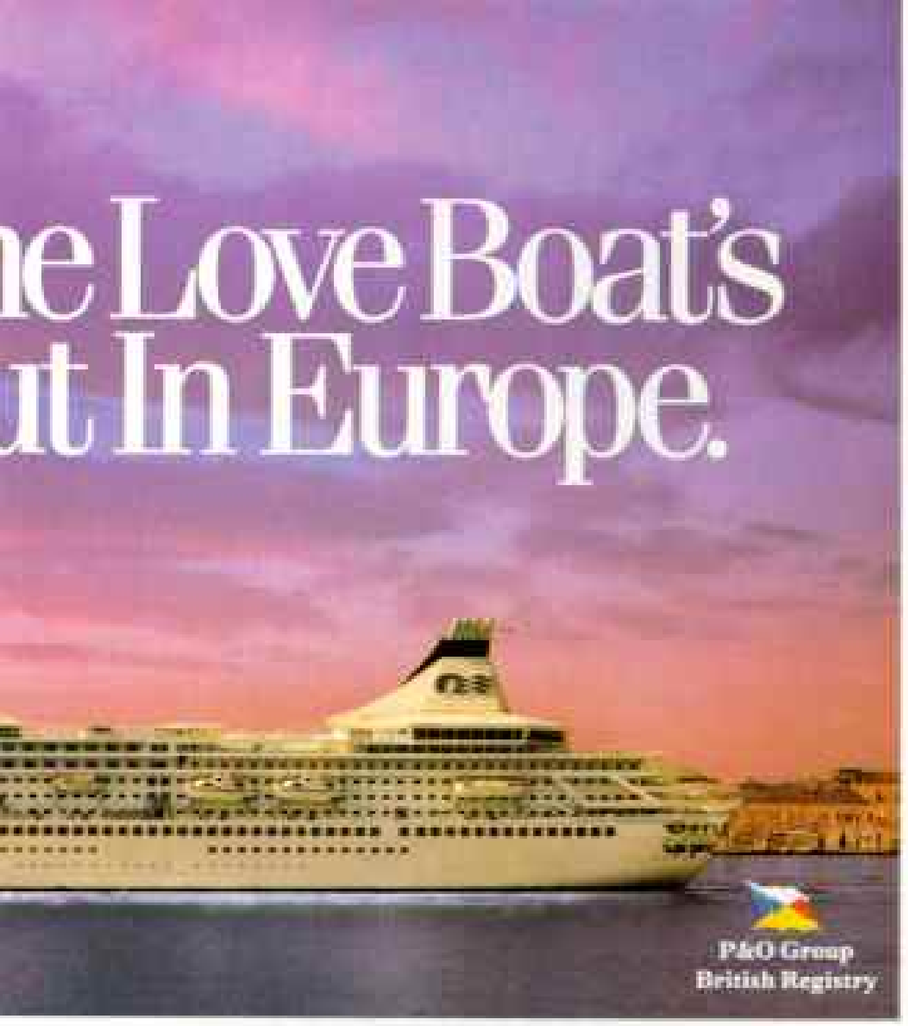

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On Assignment

FACING A SOLID WALL of photographs, practiced eyes sorted out the best of nine decades of National Geographic images for the Corcoran Gallery of Art's exhibition commemorating the Society's centennial. It was the last big cut after months of research and preliminary sifting. Author of our article JANE LIVINGSTON, second from left, exhibition coordinator DENA ANDRE, left, and curator of photography FRANCES FRALIN, right—all of the Corcoran—tackled black-and-white and early color prints in our archives. KATHY MORAN, second from right, picture editor for our communications division, searched through 35-mm slides in our files.

Photographer DECLAN HAUN, foreground, reviewed the unpublished work of our photographers. Recording this session, Haun turned it into a collage to illustrate how the selection process turned individual elements into a whole. "Almost every color photograph in the room is in the show," he says.

CELEBRATING the fun side of our centennial, *Chicago Tribune* cartoonist and creator of the comic strip "Shoe," Jeff MacNelly spoofs a century's worth of fieldwork. "I've seen about every issue of the GEOGRAPHIC. When I was little, it's actually what I wanted to do for a living—go to strange, faraway places and take photographs of weird birds," he says. "Then I found it was easier to make them up. Saves on film, too."

DECLAN HAUN WITH DAVID ALAN HARVEY (TOP)