

owe the honor of my election as President of the National Geographic Society simply to the fact that I am one of those who desire to further the prosecution of geographic research. I possess only the same general interest in the subject of geography that should be felt by every educated man."

A few months later, early in 1889, appeared a slim little scientific brochure—Volume I, No. 1, of the *National Geographic Magazine*. Between its paper covers of a terra cotta shade were such articles as these: "Geographic Methods in Geologic Investigation"; "The Classification of Geographic Forms by Genesis." It was earnest, serious, studious, thorough, but it bore little relation to the brilliantly illustrated periodical that it would some day be. After several years of irregular publication, the Board decided to issue the *Magazine* every month, beginning January 1, 1896, and to make efforts to increase the circulation by placing it on the newsstands.

In December, 1897, Gardiner Greene Hubbard died, and his distinguished son-in-law, Alexander Graham Bell, inventor of the telephone, accepted the presidency in January, 1898. Meanwhile, the plan to popularize the *Magazine* and increase the subscriptions had failed. By the end of the year the Society was badly in debt, and the Board much discouraged. But President Bell was not disheartened. He maintained that geography was a most interesting subject and that the public would support a geographic magazine, provided the matter was presented entertainingly. The first step, he asserted, was to engage and pay a person to devote his entire time to the editorial work and to promote the membership. To his friend, Dr. Edwin A. Grosvenor,<sup>1</sup> professor of European history at Amherst College, author of two magnificently illustrated volumes on Constantinople, and later President of the United Chapters of Phi Beta Kappa,

<sup>1</sup> Professor Grosvenor was elected a member of the American Antiquarian Society, 1896, on the nomination of Senator George Frisbie Hoar.

Dr. Bell wrote on February 19, 1899, to inquire whether one of his sons would be interested to become Assistant Secretary and Managing Editor of the magazine, adding that "some bright college graduate just beginning life would probably find in this position a stepping stone to something better."

Dr. Bell's proposition appealed to me more than to my brother and I accepted it. I was teaching at Englewood Academy for Boys in New Jersey. I had been engaged originally to give instruction in French, German and Latin. The principal later assigned me classes in College Algebra, Chemistry, Public Speaking, and Debating. Compared to this program, a job as Editor seemed very easy. I was born in Constantinople (Istanbul) and had spent my pre-college days there. My father had been professor of history in Robert College for twenty years before being called to Amherst College. My life abroad and my close association with my scholarly father had given me unusual geographic interest. I well remember my first visit, on April 1, 1899, to the Society's headquarters, which was half of a small rented room on the fifth floor of the Corcoran Building in Washington. Dr. Alexander Graham Bell took me to the office on the morning of my arrival in Washington.

The little space of which I, age 23, was to assume charge was littered with old magazines, newspapers, and a few books of records, which constituted the only visible property of the Society. The treasury was empty, and had incurred a debt of nearly \$2,000 by expenditure of life-membership fees to keep alive. But the Society was not so poor as it seemed, for Dr. Bell had a revolutionary idea: Why not popularize the science of geography and take it into the homes of the people? Why not transform the Society's *Magazine* from one of cold geographic fact, expressed in hieroglyphic terms which the layman could not understand, into a vehicle for carrying the living, breathing, human-interest truth about this great world of ours to the people?

Would not that, said Dr. Bell, be the greatest agency of all for the diffusion of geographic knowledge? To evolve a magazine that would not lower the dignity of the Society but that would win popular support was the task that was entrusted to me. Dr. Bell personally for five years contributed my salary as Assistant Editor and Editor, making a total gift of \$6,900 to the Society for this purpose. The Society was so poor that it could employ no clerical assistance, and for a time I was even obliged to address the *Magazine* envelopes myself. The names of the members were then printed on long slips, and it was the practice to cut these slips up with a pair of scissors and then paste them on the envelopes. After addressing one edition of 900 copies in this way, my first investment in office furniture was the purchase of an addressing machine for \$20.

Magazine men said it was impossible to develop a circulation for a geographic magazine, because the subject of geography was too technical. Dr. Bell offered to donate thousands of dollars to help. But I begged him not to give a single dollar beyond the \$100 donated monthly to the Society for my salary. My theory was that if the Society's *Magazine* was to succeed, we must find out what kind of geographic magazine the public would buy, and that we could not ascertain this if we were to lean on a generous benefactor to pay deficits. Dr. Bell assented with a smile, and later told me that several years previously he and Mr. Hubbard had expended \$80,000 in a futile effort to establish a popular scientific weekly periodical. After two years of printing, they discontinued it and sold the name "Science," which they had bought for \$5,000, to Dr. J. McKeen Cattell for \$25. I have the receipt for the \$5,000 payment; Dr. Bell gave it to me as a souvenir.

Those early years were times of uphill struggle, hard work, and vexing problems. Every dollar was carefully husbanded and stretched like a stratosphere balloon. We had one in-

flexible rule; there must be no deficit at the end of the year, and no borrowing. Now the *Magazine* pays handsome honorariums for all material used, but in those days articles were solicited gratis.

We had some amusing experiences. In the expectation of interesting the schools, we accepted with great enthusiasm the offer of the professor of geography in one of our oldest universities to write and donate to the *Magazine* a series of articles for teachers. The first paper soon arrived. I found it exceedingly hard to digest, and took it to Dr. Bell. He confessed that much of it was beyond him, too, but as it was sponsored by America's most widely acclaimed geography teacher, he recommended publication. Soon letters of protest from educators deluged us, among them a letter from G. Stanley Hall, President of Clark University, one of the most ardent supporters of our project, who swore that if that article was to be the kind of geography we published, we had better discontinue our efforts. From that day, no sentence has found space in the *Magazine* that could not be readily understood.

After Alexander Graham Bell had sailed for Europe in June, 1900, several members of the Board who had little confidence in Mr. Bell's plans began negotiations with a New York publisher with a view to turning the *Magazine* over to them. To discourage the negotiations and to explain Dr. Bell's plans, I wrote to Miss Ida M. Tarbell, a good friend, the following letter on July 25, 1900, which I quote in part, as it answers the question frequently put to us—why the National Geographic Society seeks members of the Society rather than subscribers to its *Magazine*:

DEAR MISS TARBELL:

As you are aware, during the past 16 months Mr. Bell and others have been pushing the *Magazine* and planning to make it cover a field in which there is no competitor, to make it the *Geographic Magazine* of the country, reliable and *widely read*. But the *Magazine* is to be the means to another end which Mr. Bell has heretofore and does now, I believe,

consider the most important. By it we are to build up a great national society with thousands of members. What we want is not subscribers to a magazine but members of a society. . . .

A combination of membership and magazine will be a stronger attraction than a mere subscription to a magazine. Where many persons would not subscribe for the magazine alone, they will become members because they get two things, the distinction of membership in a well-known society and also a good monthly journal. Vice versa, they would not become members except for the additional privilege of a magazine. . . . Neither the *Magazine* nor the Society can stand alone, for each helps the other.

In the fall the Hubbard and Bell families are going to put up a memorial building to Mr. Hubbard. It is to be offered to the Society exclusively for its headquarters. It is another step in this same direction—to make the Society national and not a Washington scientific body. It has to become more popular, and hence the *Magazine* also must become less technical, and appeal to teachers, scholars, thinking men, and not to specialists alone. . . . The *Magazine* exists not for itself, like your *Popular Science Monthly*, but is the means, the tool by which we plan to build a society having thousands and thousands of members, and as few subscribers as possible, or, if we do get subscribers, to make them members as soon as possible. I hope my idea is clear: a great society and a great magazine is what we want and not a great magazine and a small society. . . .

The more I think about it, the more convinced I am that if the plans offered you, as far as I can gather them from Mr. X, are pursued, the results will be a technical and local society and a good magazine, but not a great society and a great magazine. The barring from the *Magazine* of all reference to the Society, which is contemplated, is destructive. The *Magazine* is the journal of the Society and publishes its proceedings, not often, to be sure, but it allows 15 to 20 pages a year for the purpose. If the *Magazine* does not have any reference to The Society, members will drop off, and there you are again, getting subscribers and not members. This is just what Mr. Bell and the majority do not want; though certain members with whom you have been thus far corresponding want it, and are working for it. They are in the minority, however, or will be. It happens that they are in the field now. I write frankly, you see, for I want you to know the object of all. A great national society first and all the time. The *Magazine* is to bring this about and not thwart it. For the present, please consider this letter confidential.

Very truly yours

Gilbert H. Grosvenor

It should be observed parenthetically that magazine men generally advised against any mention of the National Geographic Society in the *Magazine*, as they thought the public would not be interested in the Society, that mention of the

Society would frighten away readers and subscribers. The original conception of the Society and the *Magazine* prevailed, however, and by 1912 Dr. Bell was able to address the Society in these words:

There has never been in the history of the world a scientific society that has increased in influence and power as the National Geographic Society. In the year 1888, the Society was organized under a national charter "to promote the increase and diffusion of geographic knowledge." Just think what that means! *To promote the study of the world upon which we live.* A truly great object for a little, feeble organization to undertake. At that time we had only about 200 members. The Society had no endowment, nothing coming to it but the membership fees. No millionaire has since come forward to help us out, and yet today the Society has a great endowment raised by its own efforts—a surplus to be devoted to the promotion of geographic science. We never had to take off our hats to any multi-millionaire for having endowed The Society with a million dollars; we have done it ourselves.

When I look back upon our early days, what a different condition of things prevailed! We had only about a thousand members, and the Society was living from hand to mouth. Like many other scientific societies, we constituted a strictly technical organization. We supported the *National Geographic Magazine*, at that time a valuable technical journal that every one put upon his library shelf and few people read. It was valuable, it was important, but it did not contribute anything to the financial support of the Society.

We had no permanent home. Half an office room constituted our headquarters, and in shifting from one building to another, as happened more than once, a feeling of unpermanency ensued, and valuable material was in danger of loss. Then the use of the Hubbard Memorial Building was offered to us in memory of our first president—Gardiner Greene Hubbard—and for the first time we possessed a permanent habitation that in its beauty spoke of the position to which we aspired. But it threatened to be a white elephant, for we did not even have the means to provide for its lighting or to take proper care of it. It became a matter of vital necessity for the Society to increase its membership. Necessity spurred the Board of Managers into activity, and they adopted a new policy, unique, so far as I know, in the history of science. I do not know of any other scientific society that has ever adopted it, and I do not know of any other society that has succeeded as the National Geographic Society has done. Now, how was this accomplished?

First of all, instead of limiting our membership to strict geographers, we threw open the doors of membership to all who desired to promote the increase and diffusion of geographic knowledge. We had a membership of one thousand in the District of Columbia; we had ninety millions of people outside the District of Columbia to whom we could appeal for an increase in our membership, but all we had to reach these outside mem-

bers was our *Magazine*. Our Washington members enjoyed the course of lectures, but the outside members would have nothing but a magazine to hold them to the Society. The question was, How could we hope to interest thousands and thousands of people in a strictly technical geographic magazine? It was obviously necessary to change the character of the *Magazine* and to adapt it to interest a larger circle of nontechnical members. We adopted this policy with an aim to making the *Magazine* support the Society. We did not mean to lower the scientific standard of the *Magazine* and make it simply popular, but we wanted to add certain features that would be of interest to everybody. But in starting out to make a magazine that would support the Society, instead of the Society being burdened with the *Magazine*, a man was of the first necessity; if we did not get the right man the whole plan would be a failure, and I can well remember how our Board of Managers discussed this proposed plan, and the difficulty of getting a man, and how the idea was laughed at that we should ever reach a membership of 10,000. Why, it was ridiculous. Geography, the driest subject of all in our schools! How could you expect a membership of 10,000 in the United States alone?

As I said, in the beginning we found it necessary to get the proper man, but fortunately we found him. A young man who had made a very brilliant record at Amherst College was engaged as Assistant Editor of the *Magazine* to stir up these new ideas, and to put new life into the scientific journal. But the Society did not have the money to pay his salary; that had to be raised by voluntary contributions from interested members. And so Mr. Gilbert H. Grosvenor commenced his work in 1899. He speedily captured the Society—and incidentally, he captured one of my daughters.<sup>2</sup> Mr. Grosvenor in 1900 became Editor and in 1903 Director of the work of the Society.<sup>3</sup> We have been very fortunate in securing his services, and with the intelligent action of an unusually fine Board of Managers, and the cordial support of the members of the Society, the success of the Society has been secured. We have increased to 107,000 members and we are still on the upgrade. There is no reason to suppose that we are going to stop growing.

<sup>2</sup> Fortunately for me and for the National Geographic Society, Elsie May Bell married me, October 23, 1900, a day of happy augury for it was also the wedding day of my father and mother. Elsie Bell had studied in France and Italy and had travelled in England, Norway, and Japan (1898) with her distinguished father and talented mother. Unwavering in her faith in our educational project, with the kind heart, keen intellect, and wide interest of her parents, she has furnished me with many constructive suggestions and wise counsel. She designed the National Geographic Society flag, has read many hundred manuscripts, and examined thousands of pages of proof and tens of thousands of photographs. She has accompanied me on many travels, including a pioneering flight from San Francisco to Hongkong, May 8-14, 1937. After this journey Mr. Juan Trippe, President, Pan American Airways, sent us a certificate that we were "not only the first couple to fly across the Pacific but also the first to fly on a commercial basis across a major ocean."

<sup>3</sup> Since January, 1920, I have been President of the Society as well as Editor. The By-laws of the Society prescribe that the Editor is the chief executive and the director of all operations of the Society. The President presides at meetings of the Society and of the Board of Trustees and Executive Committee.

Our *Magazine* has become the greatest educational journal of the world. It goes to thousands of schools. . . . There is no reason why the circulation should not increase, and there is no reason why the National Geographic Society should not be placed in possession of an endowment fund for geographic research, of its own making, many times that which it now possesses.

It might be well to repeat here some of the principles which I have followed in the development of the *Magazine*:

The first principle is accuracy. Nothing is printed which is not strictly according to fact.

Abundance of beautiful and instructive illustrations.

Every article printed in the *Magazine* has permanent value. Each *Magazine* is designed to be as interesting one year or ten years after publication as it is on the day of publication. The result of this policy is that hundreds of thousands of back numbers of the *Magazine* are continually used in schoolrooms, homes, and libraries.<sup>4</sup>

Personalities and partisan and controversial matters are avoided.

Only what is of a kindly nature is printed about any country or people, everything unpleasant or unduly critical being avoided.

The content of each number is planned with a view of being timely.

In the early *Geographics* there stand out clearly the genius and the vision of Alexander Graham Bell. He opened all doors for me in Washington. In the June, 1903, issue, featuring numerous photographs of his experimental kites, he wrote:

I have been continuously at work upon experiments relating to kites. Why, I do not know, excepting perhaps because of the intimate connection of the subject with the flying machine problem. We are all of us interested in aerial locomotion; and I am sure that no one who has observed with attention the flight of birds can doubt for one moment the possibility of aerial flight by bodies specifically heavier than the air. In the words of an old writer, "We cannot consider as impossible that which has already been accomplished."

A few years later, in 1914, we find him not only predicting that man would fly from America to Europe, but asserting that by flying high and taking advantage of eastward winds it might be done between an early breakfast and a late dinner. In this the eyes of genius seem to have foreseen the

<sup>4</sup> By today's mail I have a letter from an Iowa member who reports that every spring for twenty-six years she has carried afield her copy of the *National Geographic Magazine* for April, 1917, containing an article on Warblers of North America illustrated with paintings of them, the only color pictures of these interesting creatures printed.



stirring realities of our own present day. "Calculation shows that our best machines should be able to cross the Atlantic in 13 hours," said Dr. Bell. "I hardly dare to say it aloud for publication. It is sufficiently startling to know that it is not only possible, but probable, that the passage may be made in a single day. But if, as I imagine, it can be done in 13 hours, you may take an early breakfast in Newfoundland and a late dinner in Ireland the same night."

In September, 1903, the Society moved from rented quarters into a handsome new structure, Hubbard Memorial Hall, presented to it by the Hubbard and Bell families.

Believing that the Society was now surely set on the path to success, Dr. Bell asked in October, 1903, to be relieved of the presidency, But he continued an active and most inspiring member of the Board of Trustees and a constant contributor of articles and suggestions to the *Magazine* until his death in August, 1922.

In 1905 two happy events took place. First, I was able to offer the following resolution to the Board of Trustees, to which I had been elected in January:

*Resolved*, That the National Geographic Society, through its Board of Managers, thank Dr. Bell for his generous subscription to the work of the Society from 1899 to 1904, and inform Dr. Bell that the Society is now on such a substantial basis that it can relieve him of his subscription for 1905.

Thus Dr. Bell was relieved of his generous donation of \$100 per month which he had made for my salary from April 1, 1899.

Second, in my search for an associate to help me carry forward the promising future, I was fortunate in discovering John Oliver La Gorce, since 1920 the Vice-president of the Society. I recommended his appointment to the Board as Assistant Secretary. On September 19, 1905, he was engaged at \$60 per month, and he commenced work on September 22, which was his 25th birthday. When Dr. La Gorce joined the staff of the National Geographic Society,

it was a small organization of only 10,000. But his responsive nature and keen intellect recognized the possibilities ahead for the Society, and his generous heart was stirred to identify his life with a work that promised to promote effectively the welfare of mankind. With everything the Society has done since, he has been identified. Many of our useful and interesting projects he originated. He has labored with love and ceaseless energy to help develop the organization and bring it to the dignified position it now holds in the life of our country.

William Howard Taft, on his return from service as Governor General of the Philippine Islands, wrote for it several historic articles on the altruistic program of the United States to aid the peoples of the Philippines, by inaugurating public schools and modern sanitation. These articles today are extremely enlightening. They explain the cornerstone on which the firm friendship of Filipinos for the United States has been built. He addressed the Society twice while President of the United States and wrote many more articles for the *Magazine*, accepted membership on the Society's Board of Trustees in 1918, and continued an active and constant attendant at its meetings until his death in 1930. And after his passing dear Mrs. Taft never missed a National Geographic Society lecture until illness confined her to the house in 1941.

In December, 1907, another young man, George W. Hutchison, age 21, joined the staff. Indefatigable, unselfish, and intelligent, he gained promotion to Associate Secretary, Acting Secretary, Secretary, and member of the Board of Trustees. Ever vigilant and alert for any mechanical or human improvement that will advance the Society's interests, always watchful for any trespass on the Society's rights, tenacious, straightforward, prudent, George W. Hutchison continues always cheerful, genial, and cordial, the sympathetic and wise friend, whose counsel every one of his fellow workers seeks when perplexed.

One of the highlights of 1909 was the publication of "The Panama Canal," by Lieut. Colonel George W. Goethals, builder of the mighty ditch which altered geography, "dividing the land uniting the world."

Important indeed in the history of the *National Geographic* was November, 1910, for in that number appeared the *Magazine's* first series of illustrations in color, incidentally the largest collection of photographs in color which had ever been published in a single issue of any magazine. "Scenes in Korea and China" the 24-page series was called. Reproducing them cost several times as much as an ordinary issue, but had been made possible by expending membership and advertising receipts.

Varied and highly interesting had become the contents of the *Geographic* now. The housefly and charging rhinos, fishes that carry lanterns, Labrador and Liberia, Mexican volcanoes and Holland cheese—all these and many more subjects found a place between its yellow covers in this eventful year. "Taming the Wild Blueberry" and "The Wild Blueberry Tamed," by Frederic V. Coville, gave the first popular accounts of lifelong researches by the author that have created a new industry.

June, 1913, was a notable number. In it were published in full color the portraits of fifty common birds from paintings by Louis Agassiz Fuertes. The series was the forerunner of many bird paintings by Mr. Fuertes and Major Allan Brooks, with articles by Alexander Wetmore and Gilbert Pearson, to be published in the *Geographic*. Some of these articles have been assembled in the Society's *Book of Birds*, 2 volumes, the first and only work presenting in full color all the major species of the United States and Canada.

In 1913 the Society was able to erect a new building adjoining Hubbard Hall to house its expanding activities. Events now were moving toward the fateful year of 1914, and in the August *Magazine*, the very month in which the

conflict began, the *Geographic* issued as a supplement a large Map of Europe in colors. In explanation I should state that the previous summer, 1913, I was caught in a war scare in Europe and for several days was unable to get money from the French bank. Every one on the Continent was so certain of an impending war that on my return to Washington I arranged to have a European map prepared, engraved, printed, and stored in the Society's cellar until the outbreak of hostilities. For eight months we held 300,000 copies of this map, awaiting the inevitable conflict.

A useful agency of the National Geographic Society for diffusing geographic knowledge, the Society's New Bulletin Service, was started early in World War I (1914) to assist harassed American editors to get geographic data about obscure places made suddenly prominent by military operations. Historic, geographic and economic information about peoples, their cities, towns, rivers, mountains and valleys mentioned in the cabled news dispatches were furnished the newspapers at their request. This free service of the Society antedated by some years similar bulletins on general Science now issued by Science Service and the Associated Press. This National Geographic educational service is now so esteemed that more than 550 newspapers and press associations and many radio commentators and columnists and editorial writers use the free daily releases prepared by the Society on places suddenly made prominent by world events. With pardonable pride I reprint with permission a *New York Times* editorial expressing appreciation of this informative cooperation:

#### FOOTNOTE TO GEOGRAPHY

For years Americans have been learning geography by the most pleasant method imaginable. They have learned about their own country at first hand and from automobile road maps. They have learned about the far corners of the world from newspaper accounts of famous fights and from the National Geographic Society, which itself seemed

always to be sending out a new expedition to find and report on some unknown corner of the planet.

Since the war began we have been learning still more geography, less pleasantly. Laconic military communiques have told, often in veiled language, what was happening on remote battle fronts. Correspondents have gone with the armies to places remote even in the encyclopedias. And the newspapers have striven mightily to keep up with them for the daily readers.

Inevitably, the newspapers have had to lean on many sources to make intelligible the brief and sometimes cryptic dispatches and communiques. And chief among those sources is the old reliable National Geographic Society. Not only has it given generously of its information and opened its magnificent geography library; it has published splendid war maps and it issues daily bulletins to assist the newspapers and news services.

It is highly reassuring, when such place names as Staryi Oskol and Zivotin crop up in the communiques, to be able to ask somebody what and where they are—and get the right answers. The N.G.S. hasn't failed us—yet.<sup>5</sup>

Among other contributions to education has been the National Geographic's School Bulletin, furnished gratis for 25 years to 30,000 public school teachers each week, one for each school day throughout the school year. These Bulletins for teachers and pupils are valuable supplements to geography books, which all too soon become outdated by swiftly moving world changes. The Bulletins were originally initiated by request of the United States Commissioner of Education. They are illustrated by maps and pictures. Hundreds of the superintendents of schools of the country have enthusiastically approved this activity of the Society in geographic education.

In a pre-war year staff men of the National Geographic Society traveled 250,000 miles to bring to members first-hand stories on peoples and places. In addition to the editorial and photographic surveys constantly being made for its *Magazine*, the Society has sent out more than one hundred research expeditions, some of which required years of field work to achieve their objectives. Such famed institutions of learning as Harvard, Yale, Cornell and Georgetown Universities, the University of Virginia, Smithsonian Institu-

<sup>5</sup>*New York Times*, July 26, 1942.

tion, National Bureau of Standards, American Museum of Natural History, Lingnan University, Canton, China, and the U.S. Army and Navy have been co-sponsors in many of these expeditions.

The Society's flag was with Peary at the North Pole, with Byrd at the North and the South Pole. It soared to the highest altitude reached by man, 13,711 miles into the stratosphere, in 1935 during the National Geographic Society-U.S. Army Air Corps Stratosphere Expedition; and reached the lowest depths of the sea, 3,028 feet, with Dr. William Beebe. The first Geographic expedition to the region of Mt. St. Elias, Alaska, in 1890, discovered Mt. Logan, the second highest peak in North America.

To encourage exploration the Society awards gold medals for exceptional achievement. Presidents Theodore Roosevelt, William Howard Taft, Woodrow Wilson, Calvin Coolidge, and Herbert Hoover, and Vice-president of the United States Fairbanks and General Pershing have honored the Society by presenting its medals at meetings of the Society, and President William McKinley attended the reception of the Society in honor of Captain Charles D. Sigsbee, U.S.N., geographer and commander of the *Maine*. President Franklin D. Roosevelt presented the Society's medal to Lincoln Ellsworth at a special ceremony in the White House.

Theodore Roosevelt on his return from his explorations in Africa (1910) and again from South America (1914) gave to the Society his first public lecture announcing his discoveries. Admiral Peary, Roald Amundsen, Sir Ernest Shackleton, Sir Douglas Mawson, Vilhjalmur Stefansson, Admiral Byrd, Lincoln Ellsworth, Auguste Piccard and many another explorer has similarly honored the Society. Calvin Coolidge twice addressed the Society while President of the United States. As Vice-president he had also twice addressed it and contributed to the *Magazine*. Mrs. Herbert

Hoover joined the Society April 18, 1902. The Society's *Magazine* and maps followed her on all her travels with Mr. Hoover to India, China, Siberia, Australia, Europe, South Africa, the White House, and California.

Among the Society's many significant contributions to science and popular research, I mention a few:

*Archeological Expeditions.* On January 16, 1939, Matthew W. Stirling, leader of a joint expedition of the National Geographic Society and the Smithsonian Institution, discovered in Mexico the oldest dated work of man yet found in the New World, a stone slab bearing a Maya date interpreted (Spinden correlation) as November 4, 291 B.C.

Later excavations (1940-1943) revealed that the site was a religious center of great antiquity, well established when Mohammed's religion was still new and Canterbury was just emerging as England's religious capital. The Mexican "Mecca" is a plain dominated by a man-made mound more than a hundred feet high. A short distance off were the workshops of the artists and artisans whose skilled fingers carved with equal fidelity giant basalt heads weighing twenty tons and jewels from beautiful translucent emerald green jade—as precious as emerald—smaller than a fingernail and perforated with holes not much larger than the diameter of a coarse hair. With respect to stone work this may be considered the highest art level achieved in ancient America.

The Society's notable expeditions to New Mexico, led by Neil M. Judd and Andrew E. Douglass, by developing a tree ring calendar which can be applied to all early ruins in which datable timbers exist, have pushed back the historic horizons of the southwestern United States to a period nearly eight centuries before Columbus crossed the Atlantic, solving secrets that have puzzled historians for three hundred years. The Society's expeditions to Peru have given the world much of its knowledge of the Incas.

*Botanical and Biological Expeditions.* Important new fruits and flowers to enrich American farms and forests, and large collections of birds, including many new species, and herbarium specimens for the U.S. National Museum, and hundreds of rare animals, birds, reptiles, and fishes for the National Zoological Park, have been made in China, Brazil, Venezuela and Netherlands Indies by Society explorers Joseph F. Rock, Ernest G. Holt, William M. Mann, and George W. Groff. Rock gathered great quantities of blight-resistant chestnuts in China. These the U.S. Department of Agriculture has widely distributed in the expectation that they will restore to American forests one of our most valuable trees. He also brought back for the Department of Agriculture from China four hundred and ninety-three species of rhododendron or more than had been previously known in America, and seeds of spruces, firs, hemlocks, pines, and junipers. In my Maryland garden, on October 18, 1942, I gathered half a bushel of fat red chestnuts from blight-resistant trees from Rock's seeds.

*Eclipse Expeditions.* To observe, study, and photograph eclipses of the sun, the Society has sent expeditions to many distant places, including Africa, Siberia and Brazil. Notable among these undertakings was the joint National Geographic Society-United States Navy expedition of 1937 to tiny Canton Island in mid-Pacific. Besides making a thorough study of the longest solar eclipse visible from the earth in 1,200 years and recording the phenomenon in color photographs and oil paintings, the expedition explored Canton and its neighboring islet, Enderbury, finding Canton to be especially adapted to use as an air-base site. The islands were later placed under joint American-British control, and Canton became an important way station on the U.S.-New Zealand route of American Air Clippers.

*Solar Radiation.* To further the study of long-range weather forecasting, the Society appropriated funds to



enable the Smithsonian Institution to maintain a solar radiation station in Africa for six years.

*The Valley of Ten Thousand Smokes.* After the eruption of the world's largest crater, Mount Katmai, the Society sent five expeditions to this Alaskan volcanic area. An eighth wonder of the world was discovered—the Valley of Ten Thousand Smokes—which has since been created a National Monument.

*Saving the Giant Sequoia Trees.* The Society and individual members purchased and presented to the Government 2,239 acres of the finest sequoia and other trees in the Giant Forest of Sequoia National Park, California.

*Carlsbad Cavern.* The Society's expeditions explored and revealed to the world this largest and most beautiful known cavern, in New Mexico. As a result it is now a National Park.

*Exploration of the Stratosphere.* The Society and the U.S. Army Air Corps jointly sponsored explorations of the stratosphere which have resulted in the gathering of scientific data at the world record altitude of 72,395 feet above sea level. After Professor Auguste Piccard's novel and record ascents to 51,775 feet and 53,152 feet above sea level in a sealed gondola lifted by a balloon, 1931-1932, the Society invited the Swiss Belgian scientist to America to describe his new method for ascensions to the members and offered an honorarium to make the crossing possible. Officers of the U.S. Army Air Corps meeting Professor Piccard were so impressed by his description of the many fascinating problems concealed in the thin clear air far above the earth that they asked the National Geographic Society to finance and sponsor balloon ascensions by Army aviators. The War Department had no funds for such investigations and was reluctant to ask for appropriations. The Society agreed to provide the funds and the scientific

personnel with Dr. Lyman J. Briggs, Chairman, to prepare and direct the program for the aerial researches. The Army Air Corps designated Captains Albert W. Stevens and Orvil A. Anderson of the U.S. Army as Commander and pilot. On their final flight, November 11, 1935, they ascended in the gondola of the *Explorer II*, the world's largest balloon, with a capacity of 3,700,000 cubic feet, to an officially recognized altitude of 13.71 miles. The balloon which rose from the Stratobowl near Rapid City, South Dakota, carried a ton of scientific instruments arranged by Dr. Briggs and brought back to earth an unparalleled collection of data. From the flights the Army gained useful information on balloon design and balloon fabric, on the new dow-metal, on cosmic rays, on the functioning of liquid air and radio equipment at extraordinary elevations, etc. Scientists were especially interested in the following new facts added to our store of knowledge:

Cosmic rays measurable by their ionization effects, coming in from the vertical direction, increase in number from sea level to a certain altitude (57,000 feet during the flight of *Explorer II*), then decrease in number as the measuring instrument rises;

At 72,395 feet such measurable cosmic rays coming from the horizontal are as numerous as those from the vertical;

The first records were obtained of "bursts of energy" from atom disruption by cosmic rays up to 72,395 feet;

The flight resulted in obtaining the first track ever made directly in the emulsion of a photographic plate by a cosmic ray of the alpha-particle type having the enormous energy of 100,000,000 electron volts;

The first values were obtained by means of laboratory-size spectographs, of sun spectra and sky spectra up to 72,395 feet;

A photograph made from the stratosphere was the first to

show the curved top of the troposphere (marked by the dust which extends up to that altitude) and it also showed the curvature of the earth;

The first values were obtained for electrical conductivity of the air between 30,000 feet and 72,395 feet above sea level;

The first large samples of air were secured from an altitude above 70,000 feet, showing practically no change in the ratio of nitrogen to oxygen;

The first knowledge was obtained that living spores float in the atmosphere above 36,000 feet;

The first demonstration was made that spores will withstand physical conditions in the stratosphere up to 72,395 feet, for at least four hours;

The first natural color photographs were taken of the sky at high altitudes in the stratosphere;

The first records were obtained showing brightness of the sky at 72,395 feet (one-tenth that when viewed from the earth);

The first record was made of the brightness of the sun at 72,395 feet (20 per cent greater than when viewed from the earth);

Vertical photographs of the earth were made from a higher altitude than ever before (72,395 feet above sea level);

The first radio signals were sent to earth stations from a station as high as 13.71 miles above the earth.

*Polar Research.* The Society granted funds and scientific aid amounting to \$75,000 to Admiral Byrd for his first exploration of the South Polar regions, and also cooperated with the second Byrd Antarctic Expedition. Admiral Byrd first gained experience in Arctic flying on the MacMillan Arctic Expedition sponsored by the Society and the U.S. Navy. The Society subscribed a substantial sum to the historic expedition of Admiral Peary, who discovered the North Pole, April 6, 1909.

*Trans-Asiatic Expedition.* In 1932 the Citroen-Haardt Trans-Asiatic Expedition, with the Society cooperating, crossed Central Asia from the Mediterranean to the Yellow Sea—the first motor caravan to cross “the roof of the World,” the Himalaya Karakoram ranges. Long-hidden phases of life along 7,370 miles of historic caravan routes were studied and recorded for posterity.

*Aerial Discoveries in Alaska.* On a flight circling Mount Logan and Mount St. Elias, Bradford Washburn, leader of the National Geographic Society—Harvard University Expedition of 1938, discovered one of the largest icefields and glacial groups outside the polar regions. He made aerial photographs which prove that the great Bering and Malaspina Glaciers are merely two overflows from a vast highland icefield 235 miles in extent. He also discovered and named Mounts King George and Queen Mary.

For the benefit of specialists, the Society has published monographs giving the technical results of the expeditions. These supplement the popular narratives in the *Magazine*.

The Society arranged to move from an unmarked grave in Washington to Arlington National Cemetery the remains of Admiral Charles Wilkes, U.S. Navy, the great American explorer of the Pacific Ocean and the discoverer of the Antarctic Continent, and to place a dignified monument for him. It also erected the Memorial at Admiral Peary's resting place in Arlington, the ceremony of dedication (1922) being attended by the President of the United States Warren G. Harding, Chief Justice William Howard Taft, Secretary of State Charles Evans Hughes, Secretary of Navy Edwin Denby and Assistant Secretary of Navy Theodore Roosevelt, Jr. For the Society, Captain Donald Macmillan placed a tablet on a granite boulder at Cape Sabine, Ellesmere Island “to the memory of the dead who under Lieutenant A. W. Greely here gave their lives to

ensure the final and complete success of the first scientific cooperation of the United States with other nations 1881-1884. Erected by the National Geographic Society. 1923”

The friendship of many explorers for the Society was expressed very kindly by Admiral Byrd in an address to the members on his return from his 1933-1935 Antarctic expedition: “The help the National Geographic Society has given to explorers has been very great. I happen to be one of those explorers, and I am glad to acknowledge that without the help of the Society I have had in connection with all of my expeditions there would have been a very different and less successful story to tell. The Society’s encouragement has sustained me many times when we were having a tough time in the field of operations.”

The large circulation of the *National Geographic Magazine* has given much value to the advertising pages, but the number of pages assigned to advertising has been limited to about twenty per cent of the *Magazine*, and these pages have always been separated from the text to facilitate binding the numbers. Furthermore, because of the wide use of the *National Geographic Magazine* in schools, our editorial policy has banned advertising of liquor, cigarettes, and patent medicines. Of this policy *Reader’s Digest* quotes Ishbel Ross from *Scribner’s Magazine*: “Dr. Grosvenor once said that he would take his readers around the world and that he would take them first class. He has done it and, most remarkable of all, he has done it without letting his fireside travelers have a drink, a smoke or a bicarbonate of soda.”<sup>6</sup>

Notwithstanding these restrictions, advertising has yielded the Society a good revenue. Because of it, the Society has been able to put into the *Magazine* much more than the small membership fee,<sup>7</sup> to support numerous expedi-

<sup>6</sup> *Reader’s Digest*, July, 1938, p. 67.

<sup>7</sup> This has been \$2.00 (1900-1920), \$3.50 (1921), \$3.00 (1920-1942), \$3.50 (1943).

tions for exploration, to buy land and construct new buildings when needed in 1920 and 1931, and to accumulate a considerable endowment fund for the Society.

The National Geographic Society is incorporated under the laws of the District of Columbia. It is the only geographical society in the world which has sought continuously to popularize geographic knowledge since American interest in world affairs was aroused by the Spanish-American War in 1898.

One million, two hundred thousand persons are enrolled as members for two purposes: to learn the geography of this interesting world in which we live; and to assist in adding to the sum of human knowledge by supporting the explorations and researches of the Society. The members take a very real interest in the Society and in its work. The strength of the Society rests on that foundation of member-interest and faith in its purposes.

A retired Major-General of the United States Army writes from Honolulu:

I became a member of the Society shortly after I graduated from the Military Academy and became an officer in the Army. The magazine has been my life-long companion and my children have been constant readers, and now my grandchildren read it every month. This will show you what a great influence the magazine has had in one family and, as you may claim thousands of families, the total influence it has upon the lives of the country can never be fully estimated.

A member in Puerto Rico enquired why termites that successfully riddle all his books and other magazines on the Island invariably died when they attempted to chew the *National Geographic Magazine*! An irate mother complained that just when she had gotten Willie well started in his geography at school, she found him neglecting his work to read the *National Geographic Magazine*. A distinguished Ambassador to Washington when presenting an honor from his government congratulated me for my services in "vulgarizing the science of geography."

When Alexander Graham Bell asked me to take charge of the *National Geographic Magazine*, April 1, 1899, the Society's membership was so small that I could carry the entire edition of one month on my back. Today a single issue would form a pile more than five miles high, rivaling Mount Everest, or fifty piles each as tall as the Washington Monument. The ink alone used in printing each issue weighs five and a quarter tons—as much as seventy men could carry.

In the early days it was customary to print in the *Magazine* the names and addresses of the members. I stopped this expense as I wanted to put the dollars thus saved into illustrations for the *Magazine*. Dr. Bell argued that a Society that did not publish a list of members was not a real society. But when the number of members had increased to such a figure that to print a membership list would have cost more than the member's annual fee, he acknowledged the wisdom of my action. To print a list today in small type allowing fifty names to a page would require 20,000 pages, filling solidly more than twelve years of *Geographics*, without another word or a single picture. The *Magazine*, with its appeal to all members of the family, is estimated to have reached during the last twenty years an average of 5,000,000 readers each month.

The many millions of dollars required to publish the *Geographic*—250,000,000 copies in twenty years—have been supplied year after year by the dues of the members of the National Geographic Society. Thus the Society is a co-operative scientific research undertaking. Only by spreading first cost over a large edition could the many expensive and worthwhile features have been provided.

In every community of fifty white persons in the United States, there is at least one member. Especially significant of the world-wide usefulness of the Society is the fact that in the last prewar year (1939) the National Geographic Society

had a total membership abroad exceeding 120,000 distributed in every foreign country and on almost every inhabited island. No other educational institution in the world received such universal support.<sup>8</sup>

This extraordinarily large membership in a society whose objects are entirely scientific and educational, in which the bond is intellectual, not religious or fraternal or social, shows that the spirit of adventure and the desire to learn and help

<sup>8</sup> The foreign membership in the last prewar year (1939) included:

<b>AMERICA</b>	Mauritius . . . . .	50	<b>AUSTRALASIA AND</b>
Canada . . . . .	Morocco . . . . .	28	<b>EAST INDIES</b>
Central America . . . . .	Mozambique . . . . .	281	Australia . . . . .
Cuba . . . . .	Natal . . . . .	650	Belitoeng (Billiton) . . . . .
South America . . . . .	Nigeria . . . . .	141	Borneo (British) . . . . .
(of whom 2,696 lived in	Orange Free State . . . . .	189	Borneo (Netherlands) . . . . .
Argentina; 2,704 in Bra-	Southern Rhodesia . . . . .	290	Celebes . . . . .
zil; 1,178 in Chile; 647	Tanganyika . . . . .	94	Java . . . . .
in Peru)	Transvaal . . . . .	1,509	N.E. New Guinea &
Mexico . . . . .			Papua (Aust.) . . . . .
			New Guinea
	<b>EUROPE</b>		(Netherlands) . . . . .
<b>ASIA</b>	Belgium . . . . .	1,301	New Zealand . . . . .
Afghanistan . . . . .	Denmark . . . . .	727	Sumatra . . . . .
Arabia . . . . .	Eire . . . . .	1,872	Timor . . . . .
Bahrein Islands . . . . .	France . . . . .	1,477	Miscellaneous . . . . .
China . . . . .	Great Britain . . . . .	40,024	
French Indo-China . . . . .	Italy . . . . .	1,315	<b>ISLANDS, MISCELLANEOUS</b>
Hong Kong . . . . .	Netherlands . . . . .	2,064	Ascension . . . . .
India . . . . .	Norway . . . . .	968	Azores . . . . .
Iran . . . . .	Portugal . . . . .	613	Canary . . . . .
Iraq . . . . .	Soviet Union . . . . .	46	Cook . . . . .
Japan . . . . .	Spain . . . . .	210	Cyprus . . . . .
Levant States . . . . .	Sweden . . . . .	1,208	Falkland . . . . .
Manchukuo . . . . .	Switzerland . . . . .	1,730	Fiji . . . . .
Palestine . . . . .	Yugoslavia . . . . .	212	Greenland . . . . .
Straits Settlements . . . . .			Iceland . . . . .
Thailand . . . . .	<b>WEST INDIES</b>		Madeira . . . . .
Trans-Jordan . . . . .	Aruba . . . . .	87	Malta . . . . .
Turkey . . . . .	Bahamas . . . . .	57	New Caledonia . . . . .
	Barbados . . . . .	88	Newfoundland . . . . .
<b>AFRICA</b>	Bermuda . . . . .	192	New Hebrides . . . . .
Algeria . . . . .	Curacao . . . . .	93	Norfolk . . . . .
Angola . . . . .	Dominican Republic . . . . .	170	Samoa (British) . . . . .
Belgian Congo . . . . .	Haiti . . . . .	76	Society . . . . .
Cape of Good Hope . . . . .	Jamaica . . . . .	222	Solomon . . . . .
Egypt . . . . .	Leeward Islands . . . . .	49	Tonga or Friendly . . . . .
Gold Coast . . . . .	Trinidad . . . . .	243	Miscellaneous . . . . .
Kenya . . . . .	Windward Islands . . . . .	45	
Madagascar . . . . .	Miscellaneous . . . . .	14	



research are fairly universal. The Society's membership rolls include not only hundreds of thousands of the most cultured and substantial people, but also hundreds of thousands of citizens possessing only modest educational and material advantages. The lonely forest ranger, the clerk at his desk, the plumber, the teacher, the eight-year-old boy, and the octogenarian, cannot, like a Carnegie or a Rockefeller, send out their own expeditions, but they enjoy having a part in supporting explorations conducted by their own Society and reading the first-hand accounts in their own *Magazine*. One member's copy travels by dog team beyond the Arctic Circle; another's first by train, then by mighty ocean liner, by upriver sampan, by coolie courier, and finally by camel caravan to interior China. Other prosaic stencil record cards are magic keys to a monarch's gold-bedecked palace in India, a South African ostrich farm, a tea plantation in Ceylon, a jungle settlement among wild rubber trees of tropical Amazonia, an island home in the tempestuous Strait of Magellan.

A copy of the *Geographic* rarely outlives its interest. Few indeed ever find their way back to the paper mills. The quality of the paper is so excellent that numbers printed more than a quarter of a century ago are still as sound and legible as when they were issued. More volumes of the *Geographic* are bound than of any other magazine, and the binding of *Geographics* has become a big business. The bound copies are constantly consulted by students, teachers, travelers, artists, scientists, motion picture directors—persons in a hundred walks of life. Most large public libraries, schools, and numerous individuals have complete or nearly complete files.

The subject matter covers almost the entire range of Nature, from the ant to the elephant, from the humming bird to the trumpeter swan, from tiny tropical fish to the

gigantic whale, from the microscopic spores of mold to the mighty sequoia and eucalyptus trees. It deals with nearly every part of the earth, from the teeming pavements of New York and London to equatorial jungle and polar wastes.<sup>9</sup> In its pages are recorded in word and picture the personal narratives of explorers and trail blazers by land, sea, and air, from Peary and Amundsen to General William Mitchell and Admiral Byrd. Here too are the travel observations of statesmen—Taft, Theodore Roosevelt, Bryce, Coolidge, Curzon, Jusserand, Grew, Castle, Lord Halifax; of men of letters—Joseph Conrad, Donn Byrne, Scott O'Connor, DuBose Heyward, A. J. Villiers, Owen Lattimore; and of famed scientists—Alexander Graham Bell, S. P. Langley, Ditmars, Beebe, Chapman, David Fairchild, Coville, Morley, Nelson, Griggs, Jaggar, Rock, Andrews, Abbot, Greely, Allen, Mann, Wetmore, Alfred M. Bailey, Charles R. Knight, Roy Waldo Miner, Austin Clark, Donald Menzel.

Noteworthy contributions to the understanding of our Nation both by its citizens and by members abroad are the articles in the *Geographic's* important series on the States and chief cities of the United States. Beginning with John Oliver La Gorce's article on Pennsylvania, the series of State stories now has covered 42 of the 48 Commonwealths, and represents the most extensive task of its kind ever undertaken. Required reading and reference in many college classes, business schools, and economic courses are the *Geographic's* comprehensive articles which dramatize and illustrate America's major industries. Some titles which give a clue to the scope of these readable and informative

<sup>9</sup> Consult *The Geographic Index, 1899-1942*: 17,010 references to topical headings, Nature subjects, places, maps, authors, and titles appear in this Cumulative Index to the *National Geographic Magazine*, 1899 to 1940, and the accompanying Supplement covering 1941 and 1942. This Index gives instant location of material in 528 numbers of the *Geographic*. 599 pages, including an illustrated foreword on the history of The Society and its Magazine by Gilbert Grosvenor. Mulberry cloth binding; 7 x 10 inches. \$1.75 in U.S. and Possessions. Elsewhere, \$2.00.

presentations are: "How the World Is Fed," "Miracle of Talking by Telephone," "Trains of Today—and Tomorrow," "Chemists Make a New World," "Aviation in Commerce and Defense," "Our Most Versatile Vegetable Product [Rubber]," "Tin, the Cinderella Metal," "Cotton, Foremost Fiber of the World," and "Glass 'Goes to Town'."

There are many articles on islands, some remote and seldom visited. Among them are Falcon Island, a "hide and seek" spot of land in Polynesia which literally has its ups and downs; Bogoslof, another volcanic jack-in-the-box; lonely Easter Island, with its mystifying statues reared by a vanished people; Juan Fernandez, the Robinson Crusoe island, Yap and the other Pacific islands under Japanese mandate. There are also articles on the Channel Islands, Malta, the Orkneys, Cyprus, the feudal isle of Sark, Guale, Crete, the Hawaiians, Samoa, Guam, Solomons, New Guinea, Madagascar, etc.

The records of interesting and adventurous voyages in small craft have been preserved in "Dream Ship," by Ralph Stock; "'Pilgrim' Sails the Seven Seas," by Harold Peters; "Adventures through 157,000 Miles of Storm and Calm," by J. P. Ault; "Southward Ho! in the *Alice*" by Henry Howard; and "At Home on the Oceans," by Edith Strout.

With progress in archeological exploration the *Magazine* has kept step, year by year. From Nebuchadnezzar's Palace at Babylon, where the Hand wrote on the Wall, to the tomb of King Tutankhamen, to the ancient Harem of Xerxes at Persepolis, to Maya temples in Mexico, Inca ruins in Peru, and pueblos in our own Southwest dated by the tree rings in their charred and weathered beams, the story of modern science's steady uncovering of mysterious lost civilizations is recorded. Everyday life of ancient Egyptians, Mayas, Incas, and Aztecs has been recreated in the eloquent paintings of H. M. Herget and in articles by

outstanding authorities—William C. Hayes, Sylvanus Griswold Morley, Philip Ainsworth Means, and Frank H. H. Roberts, Jr.

The *Geographics'* first Flag Number, in October, 1917, received the praise of President Woodrow Wilson, and the second Flag Number, in September, 1934, with its reproduction of 808 of the world's flags and emblems, was an even greater publication achievement, forming the most comprehensive picture gallery of flags ever published in full color.

Recent features of special interest to the future historian are: a complete color reproduction of all approved insignia of the U.S. Armed Forces as of April 15, 1943, 991 in all, with full notes on the designs and symbols; and a complete color reproduction of all decorations, medals (obverse and reverse), service ribbons, marksmanship and gunnery badges, etc., awarded by the U.S. Army, Navy, Marine Corps and Merchant Marine, with explanations of the purpose and history of these awards.

An article on "Our State Flowers," with paintings by Mary E. Eaton, was printed in 1917, with the result that nearly a score of States have since adopted State flowers by legislative action. Recent notable articles picturing in natural color many hundred "Wild Flowers of the West" (May, 1927) and "Flowers of Prairie, Plain, and Woodland" (August, 1939) were contributed by Frederic E. and Edith S. Clements. North American Indian tribes are now being presented in highly popular and informative color-illustrated articles by the distinguished anthropologist Matthew W. Stirling, Chief of the Bureau of American Ethnology, Smithsonian Institution. The paintings are by W. Langdon Kihn. In the January, 1940, issue a series of action paintings by Else Bostelmann showed all the better-known whales, dolphins, and porpoises—the first and only such presentation ever published in color. Other memorable articles enriched with color have intro-

duced the deer of the world, the monkey tribe and great apes, reef-building coral polyps, the wonderfully organized world of the ant, the bee, the various species of dogs and cats, horses, cattle, fresh water and deep sea fishes, jellyfish, cuttlefish, giant squid, octopus, mushrooms, hundreds of exquisite butterflies and moths, tigers and leopards, and North American mammals.

Beginning with Alexander Graham Bell's historic papers on man-lifting kites (1903) and aerial locomotion (1907), the *Geographic* has published a continuous series of original narratives by pioneering aviator explorers. These records are unique sources for the student. General William Mitchell contributed his historic article, "The Future of Airplane and Airship as Factors in National Defense," to the March, 1921, Number. In fact, if one theme more than another has dominated the pages of *Geographic* history, that subject is flying, for the present decades are truly an Age of Aviation in which man has learned to use his wings and with them to widen his horizons in every direction. To this remarkable advance the titles of articles in the *Geographic* form an interesting key:

- Aerial Conquest of Everest, by Lieut. Col. L. V. S. Blacker; Air Adventures in Peru, by Robert Shippee; America from the Air, a unique series of photographs by Captain Albert W. Stevens
- The Arctic as an Air Route of the Future, by Vilhjalmur Stefansson
- Ballooning in the Stratosphere, by Auguste Piccard
- By Seaplane to Six Continents, by Commander Francesco de Pinedo
- Canada from the Air; First Flight to the North Pole; Conquest of Antarctica by Air; Our Transatlantic Flight, by Rear Admiral Richard Evelyn Byrd
- Exploring the Earth's Stratosphere; The First Non-stop Flight Across America, by Lieut. John A. Macready
- Exploring the Stratosphere; Flying the "Hump" of the Andes; Exploring the Valley of the Amazon in a Hydroplane; Photographing the Eclipse of 1932 from the Air, by Captain A. W. Stevens

- Fighting Insects with Airplanes; First Airship Flight Around the World, (Dr. Hugo Eckener tells the Society about it)
- Flights from Arctic to Equator, by Walter Mittelholzer
- Flying Around the North Atlantic, by Charles A. Lindbergh and Anne Morrow Lindbergh
- Flying Over Egypt, Sinai, and Palestine; Flying the World's Longest Air-Mail Route; First Flight from London to Australia by Aeroplane (1919), by Sir Ross Smith
- How Latin America Looks from the Air, by Major Herbert A. Dargue
- Into Primeval Papua by Seaplane, by E. W. Brandes
- On the Trail of the Air Mail; Looking Down on Europe, by Lieut. J. Parker Van Zandt
- Man's Amazing Progress in Conquering the Air, by J. R. Hildebrand
- Navigating the *Norge* from Rome to the North Pole and Beyond, by Gen. Umberto Nobile
- On the Wings of the Wind (in motorless planes), by Howard Siepen
- Our Conquest of the Pacific, by Kingsford-Smith and Ulm
- Seeing America from the *Shenandoah*, by Junius B. Wood
- President Coolidge Bestows Lindbergh Award; Seeing America with Lindbergh; To Bogota and Back by Air, by Charles A. Lindbergh
- Seeing the World from the Air, by Sir Alan J. Cobham
- Seeing 3,000 Years of History in Four Hours, by Maynard Owen Williams
- Skypaths Through Latin America, by Frederick Simpich
- Unexplored Philippines from the Air, by Colonel George W. Goddard, U.S.A.
- Flying the Pacific, by William Burke Miller
- My Flight Across Antarctica; My Four Antarctic Expeditions, by Lincoln Ellsworth
- Four Thousand Hours Over China, by Capt. Hans Koester
- Over the Roof of Our Continent, by Bradford Washburn
- Our Search for the Lost Aviators; An Arctic Area Larger than Montana First Explored in Hunt for Missing Russians, by Sir Hubert Wilkins
- Aerial Color Photography Becomes a War Weapon; Our Air Frontier in Alaska, by Major General Henry H. Arnold
- Aviation in Commerce and Defense, by F. Barrows Colton
- Unknown New Guinea: Circumnavigating the World in a Flying Boat, by Richard Archbold

The New Queen of the Seas—Aircraft Carrier, by Melville Bell Grosvenor; American Wings Soar Around the World, by D. H. Agnew and William A. Kinney

They Sustain the Wings, by Frederick Simpich

In these days, when thirty minutes after an important event anywhere in the world a photograph of it may appear in our local newspaper, it seems incredible that the modern arts of photography and photo-engraving were just beginning in 1899. The *Geographic* began to employ them on a hitherto unheard-of scale. Especially in the use of color photography and natural color engraving and printing, the *Geographic* has pioneered for many years. Its photographic technicians have studied in photographic research laboratories in England, France, Holland, and Germany to learn the latest methods. Even more important than their esthetic appeal is the educational, scientific, and historical value of the *Geographic's* pictures. For historians, ethnologists, and scientists of future generations, The Society's rich album of natural-color photographs—reproduced for us and posterity in the *Magazine* by four-color photo-engraving—will constitute a priceless, not-to-be-duplicated record, authentic in proportion and tint, of the dress, scenery, architecture, and daily life of the civilized nations and isolated tribal communities of the present age. Already thousands of costumes have been copied from these pages. In the Society's library is a complete index and cross index to every picture the *Magazine* has ever printed. It contains about 240,000 cards. In another part of the Society's headquarters its priceless collection of more than 350,000 unpublished photographs reposes in 350 asbestos-lined fireproof cases.

Among the Society's pioneering achievements in photography—in the laboratory and in the field—are these:

1. First to make and publish natural-color photographs of Arctic life; first magazine publication of aerial pictures of the North Pole and of aerial photographs of the South Pole.

2. George Shiras 3d, a Trustee of the Society, made the first flashlight pictures of wild animals in their natural habitats. Mr. Shiras' important contributions to the *National Geographic Magazine* (1906-1932) have been published in two volumes by the National Geographic Society under the title *Hunting Wild Life With Camera and Flashlight: A Record of Sixty-five Years' Visits to the Woods and Waters of North America*.

3. Captain Albert W. Stevens (now Lieutenant Colonel), conducting scientific observations for the Society, took the first photograph from high in the stratosphere showing the top of the troposphere, or "dust sphere," with its curved surface, which corresponds to the curved surface of the earth. He thus showed photographically the lateral curvature of the earth. This photograph includes the largest area ever covered by one photograph taken through a single lens, more than that of the state of Indiana, and shows a horizon further from the lens than was ever before caught on a camera plate, 330 miles. On the National Geographic Society-U.S. Army Air Corps Stratosphere Flight of 1935, he made the first comprehensive series of vertical photographs of the surface of the earth from the ground to an altitude of 72,395 feet above sea level, the greatest height ever attained by man in a balloon. On this flight he also made the first and only natural-color photograph to be taken in the stratosphere. This picture shows how dark the sky becomes at that great elevation. Captain Stevens in 1932 made important aerial photographs of the advancing shadow of the moon on the earth's surface during an eclipse of the sun.

4. First successful natural-color photographs undersea, by Charles Martin, Chief of the Society's Photographic Laboratory; the first extensive series of successful natural-color photographs of aquarium fishes in action, by Edwin L. Wisherd, of the photographic staff.

5. First natural-color photographs from the air, by Melville Bell Grosvenor, an Assistant Editor of the *Magazine*

6. First natural-color photographs made underground, by Jacob Gayer, in Carlsbad Cavern, New Mexico.

7. First to take and publish natural-color photographs of the Valley of Ten Thousand Smokes and the Mount Katmai volcanic region in Alaska, by Robert F. Griggs, leader of six National Geographic Society Alaska expeditions.

8. First to take and publish an extensive series of natural-color photographs of the United States, by Clifton Adams, Franklin Price



Knott, Jacob Gayer, B. Anthony Stewart, Richard Stewart, and Edwin L. Wisherd, all of the Society's staff.

9. W. Robert Moore, of the Society's staff, made the only natural-color photographs of the coronation of the Emperor of Ethiopia, took the first natural-color photographs of hill tribes of Burma and Siam, and the first extensive series of natural-color photographs of South America ever published.

10. The first natural-color photographs in regions of the Tibetan borderlands, by Joseph F. Rock, leader of Society expeditions.

11. The first progressive series of photographs from the Mediterranean to the Yellow Sea, by Maynard Owen Williams, Chief of the Foreign Editorial Staff.

12. The first comprehensive color photographs of European countries, by Gervais Courtellemont, Hans Hildenbrand, Luigi Pellerano, and Wilhelm Tobien.

13. Dr. Irvine C. Gardner, for the National Geographic Society and the National Bureau of Standards, obtained in Russia, in June, 1936, during a total eclipse of the sun, the first series of color photographs made of the corona of the sun.

14. The first kodachromes of familiar birds by Professor A. A. Allen, of Cornell University.

Mr. Franklin L. Fisher has been the resourceful Chief of the Society's illustrations division and laboratories since 1915.

The foresight of more than one million members in supporting the National Geographic Society through many years has provided our Nation in its hour of peril with maps, photographs, and data unobtainable from any other source, and that are proving of great value in military operations. When the United States troops were ordered out into global warfare, our Government found that this institution possessed the foremost photographic album of Mother Earth in existence and one of America's biggest stockpiles of cartographic information. Long before Pearl Harbor, Army and Navy officers were given access to the Society's more than 350,000 photographs of the entire family of nations. These pictures had been taken for peaceful educational purposes;

yet overnight they became a veritable gold mine of factual values to the intelligence sections of our armed services. Some were guideposts to enemy industrial or water-front targets; other sets, besides reconnaissance photographs, were capable of unmasking camouflage. Thirty-five thousand prints from photographs selected by Government experts from the National Geographic Society collections have been made in its photographic laboratory and presented to the Government.

In the study of our Commander-in-Chief, on the wall directly behind his chair in the White House, for the past eighteen months has been fastened a rack containing every National Geographic Map of the continents and oceans.

The 22 maps are mounted on rollers so conveniently arranged that President Roosevelt can pull down the map of any area of the world that he wishes to study.

By request of the Chief of Staff of the United States Army, General Marshall, a similar rack of National Geographic maps and indexes has been installed in General Marshall's new office in the Pentagon Building; and by request of Admiral King, Commander in Chief of the United States Fleet, one rack has been placed in his office and a second rack in the adjoining room where the strategic planning is made. Other national leaders who use working sets of the Society's 10-color wall maps are General H. H. Arnold, Lieut. General George H. Brett, and Co-Ordinator of Inter-American Affairs Nelson A. Rockefeller, to name only a few. Constantly consulted are the series of National Geographic Society charts hanging in the office of Speaker Rayburn at the United States Capitol, and in the lobbies of the Senate and House of Representatives.

Hundreds of thousands of National Geographic maps have been requisitioned for use by our officers and men, on land, on sea, and in the air. Millions of them are studied

daily by persons following in their thoughts the movements of their loved ones on the battle front. Enlarged to ceiling height, they stand in the Navy operational centers to show the location of every unit in the Fleets and in the Naval War College classrooms at Newport. Six hundred maps were en route to the gallant U.S.S. *Lexington* when that carrier went down in the Coral Sea. Returning travelers tell of having seen the Society's maps pin-dotted on the walls of newspaper, radio, and diplomatic offices over all the Allied world. The British War Office requested and were given gratis permission to reproduce unlimited numbers of seven Geographic maps of the continents and oceans for its armed forces. A prized exhibit in the reception room of the National Geographic on Sixteenth Street is a well-penciled Caribbean map which General Arnold, U.S.A., commanding U.S. Army Air Forces, used for two round-trips to the Panama Canal and which he returned with the remark "It is pretty badly messed up and I thought I might trade it to you for a new one."

The National Geographic maps, concise, convenient in size, accurate, represent many years of research in computations, in compiling of data, and in devising new methods for delineating the world's surface so that the maximum of information can be given distinctly. They tap surveys, data, and exploration notes of decades, accumulated by the Society's expeditions, staff writers, and photographers and correspondents abroad; also reports garnered from foreign governments and geographic societies all over the world, and correspondence carefully collated and classified.

Maps are the shorthand of geography, and special processes make it possible to concentrate into those issued by the Society a maximum of material without crowding and with a clarity of lettering that has been the envy of cartographers in other parts of the world. By a specially devised

technique place names are photographed onto the map instead of being printed. Paper and inks are carefully selected to insure the perfection and durability of the finished product. First printings of each map run up to a million and a half copies.

The National Geographic modern series comprises 22 big ten-color maps with 120,000 place names. The maps and accompanying indexes constitute a handy atlas of the world and a gazetteer of geographic information unequalled for scope, accuracy, legibility, and timeliness. The *Saturday Review of Literature* lists them as "the best general layman's series of maps."

In *A Key to Maps*, Brigadier H. S. L. Winterbotham, C.B., C.M.G., D.S.O., sometime Director-General of the British Ordnance Survey, writes: "In this matter of the general map the members of the National Geographic Society of the United States are lucky, for they, and apparently only they, can get copies of the excellent series produced by that body."

This map program the National Geographic Society has carried on for many years as an important altruistic public service. The membership fees have paid for it as well as for the *National Geographic Magazine* and the many explorations and other researches of the Society.

From 1915 to 1940 this cartographic work was directed by Albert H. Bumstead, whose untimely death on January 9, 1940, was a sad loss to the Society and to science. It was Mr. Bumstead who invented the sun-compass which Admiral Byrd used on his polar flights. "Without it," Byrd said, "we could not have reached the Pole." His able assistant, Mr. James M. Darley, succeeded Mr. Bumstead as Chief Cartographer.

Men of great ability and national prominence have served on the Board of Trustees. They have given generously of time and valuable experience to help the Society. Especially

and gratefully remembered are: John Joy Edson, Treasurer, 1901-1934; Charles J. Bell, brother-in-law and first cousin of Alexander Graham Bell, Chairman of the Finance Committee, 1900-1929; Frederick V. Coville, Chairman of the Research Committee, 1920-1937; Robert V. Fleming, Treasurer, 1934-; Elisha Hanson, General Counsel, 1931-; Henry White; General John J. Pershing; Chief Justice Charles Evans Hughes; Calvin Coolidge; Admiral Robert E. Peary; Stephen T. Mather; Daniel C. Gilman; Charles G. Dawes; Theodore W. Noyes; Charles F. Kettering; David Fairchild; George Shiras, 3d; Grove Karl Gilbert (President 1904); Walter S. Gifford; my twin brother, Edwin P. Grosvenor, General Counsel, 1920-1930; Lyman J. Briggs and Alexander Wetmore, Chairman and Vice-chairman of the Research Committee, 1937-; O. P. Austin; Admiral William V. Pratt, U.S. Navy; Admiral L. O. Colbert; Leroy A. Lincoln; George Otis Smith; General John M. Wilson, U.S. Army; Admiral C. M. Chester, U.S. Navy; Admiral J. E. Pillsbury (President 1919); Rudolph Kauffman; George R. Putnam; Ernest E. Norris; Lloyd Wilson; Admiral Emory S. Land, U.S. Navy; Juan T. Trippe, and General H. H. Arnold.

Thirty-five colleges and universities are represented on the editorial, executive and research staff. Fifty-eight of the staff are now in the Army and Navy. Of the 650 employees, more than 100 have served the Society at least 20 years. Some are mentioned on preceding pages. Special credit is also due to the Society's gifted and industrious editors and staff writers, J. R. Hildebrand, Frederick Simpich, Melville Bell Grosvenor (the fourth generation of his family privileged to serve the Society), McFall Kerbey, Maynard Owen Williams, Robert Moore, Leonard C. Roy, Leo A. Borah, Gerard F. Hubbard, Inez B. Ryan, William Joseph Showalter and Ralph A. Graves. Their united enthusiasm, devotion and skill built the National Geographic Society.

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