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ISAIAH BOWMAN

*1878—1950*

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*A Biographical Memoir by*

JOHN K. WRIGHT AND GEORGE F. CARTER

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*Biographical Memoir*

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# ISAIAH BOWMAN

*December 26, 1878–January 6, 1950*

BY JOHN K. WRIGHT AND GEORGE F. CARTER

*1878–1935, by John K. Wright*

ISAIAH BOWMAN was born at Waterloo, Ontario, on December 26, 1878, and died in Baltimore on January 6, 1950, at the age of seventy-one. He will be remembered for his achievements in the advancement of geography, the administration of institutions of higher learning, and the shaping of governmental policies. This memoir outlines the main events of his life and comments upon his scientific work and ideas, particularly in the field of geography. It touches but lightly upon his services as an adviser to the United States Government. His influence was important enough and his personality sufficiently vivid to make it seem beyond doubt that someone will eventually write a full-length biography of him. Meanwhile, for a discerning memoir the reader is referred to Dr. Wrigley's moving tribute.<sup>1</sup>

Of the total of Bowman's publications, about four fifths bear on geography and allied subjects. The remainder consists mainly of addresses delivered on ceremonial occasions and of reports on educational and other themes. Of the geographical four fifths nearly 95 percent had appeared before 1935, when Bowman became president of the Johns Hopkins University.

Bowman's creative intellectual powers stemmed from five personal endowments. First among them I should place an enthusiastic

<sup>1</sup> Gladys M. Wrigley: "Isaiah Bowman," *Geographical Review*, 41 (1951), 7-65.

imaginative curiosity. Few scholars have had a stronger feeling for poetry. Bowman saw things in sharply contrasting colors. To him there was drama no less in the clash of natural forces—in the physiographic processes of mountain building and erosion—than in the conflict of human interests and passions. At the Paris Peace Conference gods contended with Titans. The depression swept the land like a hurricane. Even in his scientific writings he made frequent use of metaphors, superlatives, and categorical assertions, assuming that no intelligent reader would take them too literally.

Bowman came of Puritan stock, and the second endowment was self-discipline, which he applied to mind no less than to body. His teachers, Mark Jefferson and William Morris Davis, helped him develop a critical habit that gave rationality to his thought and kept the torrents of his enthusiasm within useful bounds.

The third endowment was self-reliance. Open-minded enough to see that most questions have two sides, he was never inhibited from ardent advocacy of the side he preferred. Nor was he a stickler for invariable consistency in adhering to once-held ideas.

The fourth endowment, articulateness, had its roots in the three just mentioned and in his evangelical inheritance. Bowman was a fluent speaker and writer. Words came easily, sometimes too easily, to his aid, and they were full of force. Helped by a retentive memory, this "gift of gab" was ingrained, but his college teaching converted it into a gift of expression that could be eloquent. Unfortunately, some of his writings dating from his busiest years betray signs of haste, but even the least well-organized sparkle with quotable phrases and sentences.

These endowments of character and mind were made effective by a fifth: vitality. Bowman's physical constitution, if not remarkably robust, was good, and his ability to work long and hard was amazing. Though his face was often drawn with fatigue, the fires of his nature drove him on relentlessly.

The following account deals separately with four periods into

which Bowman's life may be divided: (1) twenty-six and a half years of preparation, to 1905; (2) ten years of teaching at Yale (1905-1915); (3) twenty as Director of the American Geographical Society of New York (1915-1935); and (4) fourteen and a half as President (1935-1948) and President Emeritus (1948-1950) of the Johns Hopkins University, Baltimore.

#### PREPARATION, 1878-1905

Isaiah's father was a farmer, but there were also teachers and preachers among his forebears and kinsmen. Early in 1879 the family moved to a farm in St. Clair County, Michigan, where at a tender age the boy developed a love for reading and, as he put it many years later, found Captain Cook's *Voyages* "thrilling and exciting." Bowman often spoke of being thrilled or excited by an experience, a book, an idea, and his excitement was infectious.

At eighteen he began four years of country school teaching, with attendance at summer sessions, and toward the end of this time decided "to study geography professionally"—a bold decision in an era when geography was almost universally regarded as little more than an elementary school subject. Bowman's professional preparation took five years (or nine, until he received his doctorate). The first year he spent at the excellent Ferris Institute at Big Rapids, Michigan, and the next four alternately at the State Normal College at Ypsilanti and at Harvard University. In 1905 Harvard awarded him the degree of B.Sc. and in 1909 Yale made him a Ph.D. His doctoral dissertation was on "The Physiography of the Central Andes."

Jefferson was the attraction at Ypsilanti, Davis at Harvard. Though well grounded in meteorology and physiography, Mark Jefferson was interested primarily in the geography of mankind, whereas William Morris Davis was concerned first and foremost with physical phenomena. Of Davis, Bowman wrote: "His incessantly inquiring mind, schooled in astronomy, geology, meteorology, and physi-

ography, eventually drove toward a single goal, the analysis of land forms," and since it was already taking this "set" when Bowman was at Harvard, the chief benefit that the younger man derived from Davis came in the form of rigorous training in logical thought and accurate expression. Jefferson did more to widen Bowman's horizons and encourage his spirit of far-roaming search.

Two currents that sometimes ran separately, but were more often interwoven, appear in Bowman's work. One was of concern with the physical, the other with the human, aspects of geography, and each was due in part to the influence of Davis and of Jefferson, respectively. Until about the beginning of the First World War the "physical" current was on the whole the stronger, and certain of Bowman's writings up to that time read almost as though Davis himself were the author. In the geographical study of man and in seeking to apply the findings of physiographic and climatological research directly to the solution of practical problems Bowman made more distinctive contributions. Also, in several respects he differed more from his two masters than they did from each other. Davis and Jefferson were teachers to the core. Neither would have given up teaching in mid-career, as Bowman did, and neither had the executive ambition and ability of Bowman, in whom the scholar and the man of action were combined in about equal measure. The scholar in Bowman gave intellectual weight to his action; the urge to action lent a realistic quality to his scholarship.

#### THE YALE PERIOD, 1905-1915

As instructor (1905-1909) and assistant professor (1909-1915) in the Division of Geology at Yale, Bowman was a stimulating teacher—among other subjects, of physical, political, and commercial geography, and of the regional geography of North and South America—and his courses were no "snaps." During his early years at Yale he put in several seasons of field work on water-supply problems for the United States and Indiana State geological surveys. One of his

earliest publications dealt with the pollution by oil wastes of the water supply of a small Indiana city, a problem for which he offered a solution in the light of a field study of the local drainage pattern. Other works on allied topics followed, including a comprehensive treatise on well-drilling methods in the United States. In 1907, 1911, and 1913 he participated in expeditions into the regions of South America that include southern Peru, northern Chile, northwestern Argentina, and the highlands and adjacent lowlands of Bolivia. Bowman himself organized and led the first and last of these, under the sponsorship, respectively, of Yale University and the American Geographical Society. On the second, the Yale Peruvian Expedition of 1911, he served under Hiram Bingham as geographer, geologist, and surveyor of the party. With a fire of energy and enthusiasm Bowman studied widely diverse phases of the geography of the areas visited and recorded the results in a spate of articles published while he was at Yale and subsequently in two books: *The Andes of Southern Peru* (1916) and *Desert Trails of Atacama* (1924). These travels took him both to relatively well-known places and into the wilds, where he had the explorer's full share of adventure and hardship.

Probably the clearest, simplest, least pretentious, and, therefore, most readable English that Bowman ever wrote describes what he saw and felt in South America. One example, from his account of the canyon of the Urubamba, must suffice:

"It is in such quiet stretches that one also finds the vast colonies of water skippers. They dance continuously in the sun with an incessant darting motion from right to left and back again. Occasionally one dances about in circles, then suddenly darts through the entire mass, though without colliding against his equally erratic neighbors. An up-and-down motion still further complicates the effect. It is positively bewildering to look intently at the whirling, darting multitude and try to follow their complicated motions. Every slight breath of wind brings a shock to the organization of the dance. For though they dance only in the sun, their favorite places

are the sunny spots in the shade near the bank as beneath an overhanging tree. When the wind shakes the foliage the mottled pattern of shade and sunlight is confused, the dance slows down, and the dancers become bewildered. In a storm they seek shelter in the jungle. The hot, quiet, sunlit days bring out literally millions of these tiny creatures."

"Physiographic interpretations," wrote Bowman in *The Andes*, "serve the double purpose of supplying a part of the geologic record while at the same time forming a basis for the scientific study of the surface distribution of living forms," and he used them to both ends in his South American work. When considering such strictly physiographic matters as the uplift of the Central Andes, the origin of Andean cirques, and the asymmetrical crest lines and valley profiles of the mountainous areas he hewed to the Davisian line, but departed widely from it in his perhaps more congenial investigations of the regional relationships of climate and physiography to the Andean peoples. He had already reached the conviction, as he was to put it many years later, that "the regional synthesis of life is the geographer's first concern" and "the heart of the subject is man in relation to the earth."

"The principles of geographic science," he noted in a paper on his expedition of 1913, "rest upon the theory that man is to an important degree the product of the earth," and in the preface to *The Andes* (1916) we read: "The strong climatic and topographic contrasts and the varied human life which the region contains are of geographic interest chiefly because they present so many and such clear cases of environmental control within short distances." Thus, at this period Bowman was not wholly immune to the doctrine of geographical determinism then prevalent in the minds of American geographers, although he took care to caution his readers against overemphasis upon and oversimplification of the direct influences of the geographical environment upon human affairs. Theodore Roosevelt, reviewing *The Andes*, commented approvingly on Bowman's refusal to follow some of his colleagues, who "proceed to ex-



plain all the immense complexus of the forces of social causation as simply due to geographical causes . . . ,” and after the First World War Bowman explicitly repudiated geographical determinism in no uncertain terms.

No less instrumental than his South American travels in adding to Bowman’s scholarly reputation during his ten years at Yale were the many hours of library research devoted to the preparation of his first magnum opus, a 759-page volume entitled *Forest Physiography: Physiography of the United States and Principles of Soils in Relation to Forestry*. It appeared in 1911, as an outgrowth of a course given in the Yale Forestry School, and was intended in the first instance for students of forestry. The title, however, is misleading, since nearly six sevenths of the text consist of a description, region by region, of the land forms of the United States—a description which has proved to be of enduring value both to foresters and to geographers and to many others, besides. Although several attempts had previously been made to divide the country into physiographic regions, not until after 1900 did enough information become available through detailed local geological and physiographic studies and through topographic mapping to make possible as systematic and comprehensive a work as Bowman’s.

The studies of Andean population groups in their regional settings and the regional chapters in *Forest Physiography* gave expression to the “regional concept,” in the modern development of which Bowman was a pioneer in this country. When answering a questionnaire addressed to American geographers in 1907, he alone specified “regional geography” as the branch of the subject that interested him the most.

In 1909 Bowman was married to Cora Goldthwait, whose poise, good judgment, and literary sensibility were to be of immeasurable help to him through the rest of his life. Also during the Yale period, as one of Professor Davis’s right-hand men in the leading of the American Geographical Society’s Transcontinental Excursion across the United States (1912), he made lifelong friends with many of the

American and European geographers who went on that memorable tour.

#### THE NEW YORK PERIOD, 1915-1935

On July 1, 1915, Bowman began work as the first director of the American Geographical Society of New York. Founded 1850-1852, this was the oldest geographical society in the country. Between 1904 and 1915 it had blossomed under the guidance and with the financial aid of Archer Milton Huntington (1870-1955), who recognized the potentialities latent in its library and map collection, its scholarly tradition, and the generally high quality of its Council; but there was one serious weakness, the lack of efficient organization and administration, and Mr. Huntington probably first suggested Dr. Bowman's appointment as a remedy.

While at Yale Bowman made his contributions to geography almost wholly through the books and papers that he wrote and the classes that he taught. While at the Society he was no less productive in his own research and writing, but the equivalent of time and energy devoted at Yale to teaching was now turned to the initiation and direction of programs that were actually carried out by the Society's staff and others.

His three major achievements here were: (1) to improve the scope and quality of the Society's periodical by replacing the old *Bulletin of the American Geographical Society* with a new and better journal, *The Geographical Review*; (2) to launch the publication of several series of monographic books and brochures; and (3) to initiate work on the so-called Millionth Map of Hispanic America. In order to defray the additional expenditures for the *Geographical Review* Bowman brought about an increase in the Society's income through ingenious and successful membership drives. Donations, most of which he secured from Mr. Huntington and another counselor of the Society, Mr. James B. Ford, made the other two programs possible, at a cost of nearly a million dollars. In the period 1916-1940

the Society published some sixty monographic works as a result of arrangements that Bowman made as Director. About half of these have more than 400 pages each, and all but three or four are original works first published by the Society.

The "Millionth Map" covers in 107 sheets the whole of the American continents south of the United States and also the West Indies and is, essentially if not officially, part of the "International Map of the World on the Scale of 1:1,000,000." Bowman conceived the idea for it when he called at the Society before his expedition of 1913 to look over the maps of the regions that he planned to visit, only to find them unsatisfactory. The work began in 1920 and for twenty-five years kept busy a group of seven or eight compilers and draftsmen. The sheets have served officials of governments and corporations in the planning and conduct of numerous enterprises, and diplomats in the settlement of boundary disputes. From them countless maps in magazines, scientific works, textbooks, and travel books have been copied or reproduced, but their most genuinely appreciative users have no doubt been the engineers, army officers, scientists, explorers, tourists, and others who have taken them into the field. Appropriate, therefore, was the award (1946) of the Society's David Livingstone Centenary Medal to Dr. Bowman "for outstanding contributions to the geography of the Southern Hemisphere."

Soon after the United States entered the First World War, Dr. Bowman placed the facilities of the American Geographical Society at the Government's disposal, and, as a consequence, the Society's building became the headquarters of the "Inquiry," a group of some 150 geographers, historians, economists, statisticians, and experts in government and international law which Colonel House assembled at President Wilson's request to gather and organize information for the coming peace conference. When Wilson and the American delegation sailed for France in December, 1918, they took with them the leading members of the "Inquiry" staff and many maps and books from the Society's collections. Bowman played an influential part in the work of the "Inquiry" and more especially in Paris dur-

ing the following two years, serving as adviser on geographical matters to the American Commission and in an executive capacity within the delegation. This experience brought him a wide circle of acquaintances among scholars, statesmen, and men of affairs, and gave him the inspiration and background for the writing, in a surprisingly short time, of a book that was to appear in several editions both in English and in translations. This was *The New World: Problems in Political Geography* (1921; new editions, 1924, 1928), a survey of the politico-geographical situation throughout the world at the time. The improvement of international relations through the education of politicians and other leaders thenceforth became one of Bowman's ardent interests—a cause to which he devoted many an article and address, to the service of which he came to consider the Society's Millionth Map a great contribution, and to which he gave himself unsparingly during and after the Second World War.

In the thirties another national emergency, the depression, again saw Bowman hard at work for the Government. During the last years of his New York period he spent about half his time in Washington, serving as chairman of the National Research Council and as vice chairman of the Science Advisory Board. He reorganized and invigorated the work of the Research Council and helped establish the Science Advisory Board, which President Roosevelt created in July, 1933, upon Bowman's suggestion to advise the various departments of the Government in questions of science. Bowman had first met F. D. R. at the Peace Conference and had become better acquainted with him while Roosevelt was a Councilor of the American Geographical Society (1921-1933).

That a goodly proportion of the Society's publications dating from Bowman's directorship bear on either Latin America, the polar regions, or pioneer settlement is largely due to Bowman's personal interest in those subjects. He himself wrote two of the thirteen books on Latin American topics, and the other eleven were regarded as a part of a Hispanic American Research Program for which the Millionth Map was to provide a foundation. Although Bowman never

visited the polar regions, he was on friendly terms with many of the world's leading polar explorers—notably Stefansson, Byrd, Wilkins, Ellsworth, Mawson, and Bartlett—and all these as well as lesser lights sought and benefited by his advice. For the guidance of polar exploration along scientific channels he brought about the publication by the Society of two useful and comprehensive books (1928).

Bowman made his most original contribution to science through the development and execution of a comprehensive program for the study of pioneer settlement. In 1925 he presented the plan to the National Research Council, which endorsed it. Supported by the donation of \$100,000 from the Social Science Research Council and certain councilors of the American Geographical Society, the program bore fruit in four volumes which the Society published and in a collaborative investigation of pioneer problems in Canada that yielded eight volumes.

During the period 1925-1937 Bowman wrote a dozen or more papers and addresses on pioneer problems, as well as *The Pioneer Fringe* (1931), the first of the Society's books on the subject. A number of passages in these works are revealing. "Strong and hopeful and confident, willing to buy their dreams with hard labor . . ."; such are the successful pioneers. "Explorers of more than material realms . . . capable of magnificent moments of decision," such are their leaders. Thus Bowman unconsciously characterized himself. Had he been a poet he would have made an allegory of pioneering. On the pioneer fringe men are engaged upon a mighty "creative experiment." So also, "there is always a fighting border to human experience," and "if the border appeals to a man it is because there is a border in his own mind." Indeed, "the greatest single fact about humanity—despite its fears and hesitations—is its willingness to advance beyond the borders of experience. . . . There have been pioneers in every generation to question and to venture," and Bowman visualized himself as one of them. "Science is like the pioneer

in making things happen instead of waiting for them to happen. . . . every scientific truth goes pioneering."

He advocated and outlined "a science of settlement," but it was a "science" only to the extent that any subject may be so regarded when studied scientifically. Though Bowman presented an unimpeachable case for the application of scientific knowledge and techniques to the study of pioneer problems, he developed no distinctive and systematic principles for the guidance of such study, as Darwin did for biology or Davis for geomorphology.

While director of the Society, Bowman twice broke away from his desk for a few weeks of field work of the kind that he had done so well in South America. His love of arid lands and pioneers took him westward in the summer of 1930 to Montana, Oregon, and the Great Plains of Kansas and Nebraska, and in 1932 to the pioneer fringe northwest of Edmonton. The first journey gave him the data for "Jordan Country," a classic case study of an American pioneer community (in Montana). He also made four trips to Europe to attend International Geographical Congresses. At the Paris Congress (1931) he was elected president of the International Geographical Union, under whose auspices the Congresses have been held since 1928, and in this capacity he presided at the Warsaw Congress in 1934. As president of the Association of American Geographers, he read an address on "Planning in Pioneer Settlement" at the annual meeting at Ypsilanti in 1931, where he also bestowed a gold medal of the American Geographical Society upon his old teacher, Mark Jefferson. He was closely associated with both the National Research Council and the Social Science Research Council, not only in connection with the pioneer-belts studies, as we have seen, but in the advancement of many other enterprises. Dr. Bowman was elected to the National Academy of Sciences in 1930.

In 1930 he set forth his views concerning the scope and nature of geography at a conference of the S.S.R.C. and later elaborated and illustrated them in a volume, *Geography in Relation to the Social Sciences* (1934), in which he developed the themes that the heart of

geography is the study of man in relation to the earth and that the regional synthesis of life is the geographer's first concern. He was one of the founders of the Council on Foreign Relations in New York, served long on its board of directors, and went to London in 1929 to represent it at a Conference for the Study of International Affairs. These were but a few of the "innumerable organizations" that "sought to avail themselves of his learning, his drive, his passion for exploring the frontiers of knowledge, his practical common sense, his ability to see the forest *and* the trees."

*1935-1950, by George F. Carter*

#### THE JOHNS HOPKINS PERIOD, 1935-1950

Bowman took over the presidency of the Johns Hopkins University in 1935. His predecessor in his final report had stressed the uniqueness of Hopkins educationally and its financial limitations. This was the time when the great depression was past its low point, but the upswing was hardly noticeable in private institutions such as Hopkins. Bowman's first presidential report stressed the need to improve the financial situation, the necessity that Hopkins should not try to do everything, but that the things that it did, it should do well. He had already grasped the Hopkins program and made it his. The University was to stress research *and* teaching. Research was not just an end in itself but was intended to keep bright the flame of scholarly enthusiasm. The most important thing in a university was the student-professor relationship. At Hopkins, with its moderate size, the relations should be close and productive of individual stimulation. Bowman looked beyond the student-faculty relations, to assess the relation of the University and its product to the community. He had a strong feeling of social responsibility. This was to appear in his writing and speaking many times in some form or another, a favorite term being "the social contract." These themes were to continue to appear throughout his presidency.

The following year his presidential report stressed the place of

the graduate school at Hopkins and the result of his thinking on this problem later appeared as *The Graduate School in American Democracy*. Subsequent annual reports show that one of his major tasks was the reorganization of departments made desirable by changes in time and men. There was a tendency to consolidate subjects that had split unduly. Zoology, botany, and plant physiology were consolidated into a unified department of biology. Expansions were made in other areas. For example, departments of geography, oceanography, and aeronautics were established. Bowman noted that his advice concerning the establishing or founding of departments of geography had been sought by at least one hundred colleges and universities.

The war imposed a load on the University, stopping some work and deflecting energies into other channels. Bowman led the University into war service, and threw himself into governmental advisory work also. Of the University's contribution he was justly proud, but he was also aware that much of this work was not the University's real business. He commented wryly at one point that he was proud of the record only in terms of survival value, and that he looked forward to a more balanced educational effort again in the future. But he expressed again the thought that knowledge does not exist in a social vacuum, that science has social implications, and that the scientist must face this. He was even-handed. He also noted that the humanist should be active and creative, and not just a critic of the works of the past.

He was expressing here his strong feeling that knowledge was in and of and for society. "A university is a social agent as well as a creator and conservator of knowledge deemed to be fundamental. It operates in a given time with the social expectation that the knowledge and training of a university will have useful applications. It is not operating in a millenium: it must be demonstrably useful to the society of today as well as to the hoped for society of tomorrow." For Hopkins he continued to stress that it was involved in a creative effort, that the relationship between quality and numbers was such



that it was desirable to remain small, and that knowledge is for social use.

Bowman's administration was marked by great energy and close contact with his faculty. He was always available. He was a member of every major board and committee and with extraordinary regularity appeared as chairman of these committees.

This is the more remarkable when his other activities and the complexity of Hopkins is considered. The University structure is unusual. There is a minimum of administrative officers. The president carries many of the burdens that elsewhere are the duty of deans. Furthermore Bowman was active as an adviser to the Government in a number of capacities. For the Department of State he served as vice chairman of the Advisory Council on Post-War Foreign Policy, adviser in the Department of State, special adviser to the Secretary on postwar problems and plans, member of the United States group at the Dumbarton Oaks Conversations on International Organization, and adviser to the United States Delegation to the United Nations Conference on International Organization at San Francisco.

Bowman was a dynamic leader. He took over a University weakened by the financial crisis. In a time when the outlook was so bleak that even the subscriptions to many learned journals had been cut by the library, Bowman shouldered the tasks of leadership, of fund raising, of infusing new spirit. Bowman was a man of courage and spirit and character. He believed in the things of the spirit and he wanted the University not only to impart knowledge but to form character, and by this he meant moral character. He steered the University through the post-depression years, through the war years, and the postwar floods of GIs. In the year between his retirement and his death, he devoted much time to the Economic Cooperation Administration and began the assembling of material for a series of studies.

Unfortunately these had not reached publishable form before his life closed. Besides these finished and unfinished works, he left locked files with instructions that they were not to be opened until

twenty-five years after his death. Just what this legacy contains is unknown. It may be rich in the detailed insights that we so often wish to have when we try to reconstruct history and understand the causes of actions. It was Bowman's custom to record important conversations immediately. He once told with gusto of a conference with Churchill in which Churchill diagramed some of his ideas. Though the meat of the conference was not divulged, Bowman made it clear that he had saved the diagram and filed it "for history." Bowman early felt that he was a man of destiny. He early began saving all of his publications. These he had bound in volumes. Those otherwise fugitive papers of a great man are therefore all preserved and are available at the Johns Hopkins Library.

## KEY TO ABBREVIATIONS

- Amer. Assoc. Adv. Sci. Bull.=American Association for the Advancement of Science Bulletin  
 Amer. Journ. Sci.=American Journal of Science  
 Ann. Assoc. Amer. Geogr.=Annals of the Association of American Geographers  
 Assoc. Amer. Coll. Bull.=Association of American Colleges Bulletin  
 Bull. Amer. Geogr. Soc.=Bulletin of the American Geographical Society  
 Bull. Geogr. Soc. Phila.=Bulletin of the Geographical Society of Philadelphia  
 Geogr. Journ.=Geographical Journal  
 Geogr. Rev.=Geographical Review  
 Journ. Geogr.=Journal of Geography  
 Journ. Geol.=Journal of Geology  
 Proc. Acad. Pol. Sci.=Proceedings of the Academy of Political Science  
 Proc. Amer. Philos. Soc.=Proceedings of the American Philosophical Society  
 Proc. Nat. Acad. Sci.=Proceedings of the National Academy of Sciences  
 Sci. Mo.=Scientific Monthly

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