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APRIL, 1844), AND ITS CONNECTION WITH THE ORGAN-
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In telling the story of the American Association, it is generally said that it was a direct continuation of the old Association of American Geologists and Naturalists.² In a certain sense this is true. At its meeting in New York in 1847, the Association of Geologists and Naturalists voted to enlarge its scope, and to change its name to The American Association for the Promotion of Science, and elected an officer to preside at the meeting of the new society in the following year. In September, 1847, the new association held its first meeting, and Professor William B. Rogers, the chairman of the last meeting of the old association, presided during the proceedings, and, after the adoption of a constitution, introduced his successor, William C Redfield, president-elect. Thus was the American Association born on the 26th of September, 1848, in Philadelphia. Its subsequent history is accessible to all, and the thirty-nine stout volumes which contain the records of its annual proceedings are permanent monuments to the wisdom of the founders.

All the circumstances of its origin, the causes of its founding, and the influences which shaped its development have not as yet been exhaustively studied, and it is not impossible that valuable suggestions may be derived from a consideration of the other societies which were organized in the United States during the first half of the century.

Most powerful and important of all of these was the National Institution for the Promotion of Science, established in Washington only three weeks after the Association of Geologists held its first session in Philadelphia—the two societies having been essentially contemporaneous in

¹ A paper presented at the meeting of the American Association for the Advancement of Science, held in Washington on August 19-25, 1891, and reprinted from its Proceedings, volume 40, page 39.

² This was organized in 1830, under the name of the Association of American Geologists.

origin. Besides these two there were no others which at that time aspired to national influence. The American Philosophical Society and the American Academy of Arts and Sciences, in earlier days more far-reaching, were already limited by local bonds. The United States Military Philosophical Society, organized in 1803, the first in America to hold meetings from city to city, had disbanded soon after 1810. The American Geological Society, organized in New Haven in 1819, endured only until 1826. Others, like the Academy of Natural Sciences of Philadelphia and the New York Lyceum of Natural History, while not strictly local, were essentially professional societies, with interests already intentionally restricted.

The American Association was undoubtedly a direct outgrowth of the Association of Geologists and Naturalists, but it was not strictly a continuation. The older society was an assemblage of professional men. They were all geologists, for in those days every naturalist was to some extent a geologist, and the already extensive system of State geological surveys offered many opportunities for research. There was not an astronomer, mathematician, physician, anthropologist, or political economist among them. Their object was described in the constitution to be "the advancement of geology and the collateral branches of science," and geology remained always the paramount and controlling interest. The few papers on biological, chemical, and meteorological subjects which were presented were written with geological problems in mind, and in the discussions geological considerations always received the chief attention. This tendency was especially pronounced previous to 1844, when a change of policy began to take place. It is evident to whomsoever may study the records that the American Association of Geologists was the legitimate successor of the American Geological Society, more closely akin to it (though separated by a period of fourteen years of lifelessness) than to its administrative offspring, the American Association. The Geological Society of America, separated from it by a gap of over forty years, is also more closely akin to it than was its outgrowth, the American Association.

The Association of Geologists was only one of the parents of the American Association. For the other we must look to the National Institution; and since the achievements of this organization have hitherto received but slight consideration it seems appropriate on this occasion to call attention to the principal facts in its history.

This society was from its start extremely comprehensive in its scope—even more so, it may be, than the American Association for the Advancement of Science has been at any period in its existence. Although its meetings, like those of the already venerable sister societies of similar purpose, the American Philosophical Society and the American Academy of Arts and Sciences, were always held in one city, its scope was essen-



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tially national, and at the time of its greatest prosperity it had nearly 1,600 names upon its membership roll.

Its most peculiar feature was the circumstance that its active supporters were men of high official rank in the National Government, who attended its meetings, occupied the chair, and delivered addresses and communications. It is much to be regretted that this association of public men with scientific organizations has not been continued in the last half of the present century in the same way that it was in the first seventy-five years of our national existence. The agency of John Adams in founding The American Academy, the labors of Franklin, Jefferson, Washington, Gallatin, Madison, John Quincy Adams in connection with the American Philosophical Society are well known to all. In the closing years of the last century, when the national seat of Government was in Philadelphia, the meetings of the American Philosophical Society were attended and largely kept up by high officials of the Government.

When Washington became the National Capital attempts were made from time to time to supply the want of scientific organizations, and from 1808 when a meeting of the United States Military Philosophical Society—the first national scientific society with a peripatetic system of meetings—was held in Washington City there appears to have been always a place of assemblage for men of scientific tastes at the National Capital, where cultivators of the sciences met together for conference and discussion.

Somewhere between 1810 and 1815 an organization known as the Metropolitan Society was in existence in Washington. This in 1816 became the Columbian Institute for the Promotion of Arts and Sciences, of which John Quincy Adams, Samuel L. Southard, Daniel Webster, Henry Clay, John C. Calhoun, Edward Everett, and many other public men were supporters, and whose meetings were held in a room in the Capitol. The Columbian Institute, dormant after 1825, in 1840 passed into the National Institution for the Promotion of Science.

The National Institution in April, 1844, instituted in Washington the first national congress of scientific men—the first cosmopolitan assemblage of the kind which in any respect foreshadowed the great congresses of the American Association in later years. This gathering was upon the occasion of the first annual or general meeting of the institution, and to it were invited the members of the American Philosophical Society, as the oldest scientific institution in the country; the members of the American Association of Naturalists and Geologists, and the members of all other scientific and learned societies in the United States, and all others engaged and concerned in the increase and diffusion of knowledge among men.

It is not necessary to describe at length the proceedings upon this

occasion. They may be found in the Bulletin of the Institution which, though rare, is usually possessed by all the older libraries. The opening address was delivered by John Tyler, President of the United States, and the introductory discourse by the Hon. Robert J. Walker, United States Senator from Mississippi—a learned and judicious essay, which reviewed very carefully the achievements of American science, and is well worthy of a reading, even at the present time. Senator Woodbury of New Hampshire, Ex-President John Quincy Adams, Member of Congress from Massachusetts; the Hon. J. R. Ingersoll, of Pennsylvania, and the Hon. John C. Spencer, Secretary of War, occupied the chair from day to day, and forty-three papers were read. So important were these that it is a matter of regret that few of them appear to have been published. They were prepared by representative men, and related to every branch of scientific inquiry at that time enlisting attention.

They were distributed as follows:

GENERAL.

Prof. Alexander Dallas Bache, Superintendent of the United States Coast Survey. On the Condition of Science in the United States and Europe.

Peter Arrell Browne, LL. D., of Philadelphia. On an Improved Method of Teaching the Natural Sciences.

Hon. Richard Rush. On the Smithsonian Bequest.

Prof. Samuel Stehman Haldeman. On the Necessity of a National Institution for the Encouragement of Science.

MATHEMATICS AND GEODESY.

Prof. Charles Gill, of New York. On the Improvement of the Mathematical Sciences, and the Consequent Advancement of the Natural Sciences.

Capt. William Henry Swift, U.S.A. On the Measurement of Base Lines.

ASTRONOMY.

Prof. John William Draper, of the University of New York. On the Physical Constitution of the Rays of the Sun.

Prof. Elias Loomis, of Western Reserve College, Ohio. On the Great Comet of 1843.

Prof. Richard Sears McCulloh, of Baltimore. On the Attraction of a Planet upon a Material Point in Space.

Prof. William Augustus Norton, of Delaware College, Newark, Delaware. On the Nebular Hypothesis.

Rev. Prof. James Curley, of Georgetown College, Washington, D. C. Description of a Meridian Circle for the Observatory of Georgetown College, District of Columbia.

PHYSICS.

Prof. Benjamin Hallowell of Maryland. On the Liberation of Caloric in some Chemical Changes that are Attended with an Enlargement of Bulk.

Capt. Alfred Mordecai, U. S. A. Notice of a Ballistic Pendulum, constructed at Washington Arsenal for Experiments in Gunnery.

John Tyler, jr., of Washington. In Support of the Theory of our Electric Fluid.

METEOROLOGY.

Prof. Michael Jacobs of Pennsylvania. On the Indian Summer.

Prof. James Pollard Espy of Washington. On Meteorology.

Prof. James Hamilton of the University of Nashville. On certain Meteorological Facts Observed at Nashville.

Lieut. Matthew Fontaine Maury, U. S. N. On the Gulf Stream.

George Baker and Isaac Thurber of Providence. On the Tides of Providence River and Narragansett Bay.

Prof. Robert Hare of the University of Pennsylvania. A call for Observations of the Lake Storm.

Prof. Alexander Dallas Bache, LL. D. An abstract of Magnetical and Meteorological Observations made under the direction of the War Department, at the Observatory, Girard College, Philadelphia.

GEOLOGY.

Prof. William Williams Mather of Ohio University. On the Physical Geology of the United States.

Rev. Eliphalet Nott, D. D., LL. D., president of Union College. On the Origin, Duration and End of the World.

Prof. John Holmes Agnew of New York. On the Glacier System or Ice Period of Agassiz.

Prof. John Locke of the Medical College of Ohio, Cincinnati. On Lake Superior, embracing an account of Miscellaneous Observations on the Geology, Mineralogy, Topography, Scenery, Climate, Meteorology, etc., of the Lake.

PALEONTOLOGY.

William Ballantyne Hodgson, of Savannah, Georgia. On the Megatheroid Fossils of the Atlantic Coast of Georgia.

Aaron D. Chaloner, M. D., of Philadelphia. A Petrified Forest near Cairo, Egypt.

ZOOLOGY.

Rev. John Gottlieb Morris, D. D., of Baltimore. On the Past and Present State of Entomology in the United States.

Prof. Jacob Whitman Bailey, United States Military Academy. Notes on American Polythalamia.

PHYSIOLOGY, PHARMACOLOGY.

Dr. William Holme Van Buren, U. S. A. On the Effects of Large Doses of Sulphate of Quinine on the Human System as a Remedial Agent.

Prof. John Richard Woodcock Dunbar of Maryland. On the Importance of Physiology as a Branch of General Education.

ANTHROPOLOGY, PHILOLOGY.

James Chamberlain Pickett, United States chargé d'affaires to Peru. Remarkable Ruins in the Province of Chachapoyas, Peru.

George Edward Chase, U. S. A., Pensacola, Florida. A Method of Settling the Orthography and Orthoepy of the English Language.

ADMINISTRATIONS, INSTITUTIONS, STATISTICS, ETC.

Rev. Hector Humphreys, D. D., president of St. John's College, Annapolis, Maryland. On the Economy of Science as Relating to the Government.

Prof. Edward Foreman, of Baltimore. On Domestic Exchanges in Natural History and Geology.

Prof. Thomas Sewall, M. D., of Washington. On the Design of the Medical Department of the National Institute.

Prof. Robert Maskell Patterson of Philadelphia. On a method of determining the center of population of a country.

POLITICAL, ECONOMY, HISTORY, ETC.

Prof. George Tucker of the University of Virginia. On the Dangers most to be Guarded Against in the Future Progress of the United States.

Francis Joseph Grund of Philadelphia. On the Modern Historical Schools of France and Germany, and the Philosophy of History.

Prof. Walter Rogers Johnson of Philadelphia. On the Scientific Character and Researches of the late James Smithson.

Hon. Alexander Hill Everett of Massachusetts. On the Moral Tendency of the Science and Learning of the Past and Present Centuries.

Francis Lieber, LL. D., of South Carolina. Remarks on Public Institutions.

At the meeting of the Association of American Geologists, held in Washington in the following month, out of thirty-one formal papers read, while twenty-five were mostly geological or paleontological, four related to zoology and two to chemistry or physics.

It was doubtless intended that the first annual meeting or congress of the National Institution should be followed by a similar gathering each year. This was clearly indicated in Senator Walker's introductory address, in which the opinion is forcibly expressed that the National



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Institution, with its central location, could, better than any other society then in existence, bring together the varied State interests and form a body truly national in its influence.¹

This Institute is located at the home of the Federal Government, and its operations are designed to embrace the whole Union. Rising above local and sectional influences, it appeals to the friends of science throughout the nation, and asks the support of all, with a view to the general diffusion of knowledge, and advancement of American science. It is not designed to impede the progress or impair the usefulness of any present or future scientific institutions or societies in any of the States, but would desire to establish between them and this Institute the most cordial relations, together with reciprocal aid and encouragement. Experience has proved that no one institution, however distinguished, of any State, can bring to its aid the combined efforts and support of the whole Union. Each State will desire the advancement of its own institutions; and here only can all meet beyond the limits of all the States, and unite, as Americans, in erecting and maintaining an institution which shall be truly national, not only in its location, but in all its operations. Whilst the hopes of this Institute are most elevated for the future, its present pretensions are truly humble. It does not claim to have established the character or assumed the position of a scientific institution; it does not pretend to teach the men of science of the nation, but seeks instruction from them, and appeals to them, for light, and aid, and encouragement. It asks them to come forward in a patriotic spirit, and make this Institute worthy of the great nation at the seat of whose Government it is placed, and where only the now scattered lights of American science can converge at a common centre, and radiate thence throughout the circle of the whole Union.

Disaster soon befell The National Institution. Many of its founders and supporters disappeared from public life. The Smithsonian fund, which it aspired to control, was placed under other authority. The collections and manuscripts of the exploring expeditions were removed from its custody. The magnificent collections in natural history, ethnology, and geology, which had accumulated as a result of its wonderful activity and enthusiasm, soon became a burden and a source of danger, for Congress refused the financial aid which its projectors had counted upon as certain, and which they doubtless would have received but for political changes not foreseen at the start. Only one annual meeting was held, and the publication of the bulletin containing its proceedings was its last creditable effort. It lingered along, and in 1861 went out of existence by the termination of its charter, having existed for twenty-one years, the last sixteen of which, inglorious as they were, could not impair the brilliancy of its early history.

Not only did it accomplish a great work in preparing the way for enlightened legislation regarding scientific matters in general, but it achieved definite and tangible results in connection with the founding of the Smithsonian Institution, the National Observatory, the National Museum, the reorganization of the Coast Survey, and the publication of the reports of the exploring expeditions; and it had, as an attempt will

¹Third Bulletin of the National Institute, 1845, p. 439.

now be made to show, a direct influence upon the origin of The American Association for the Advancement of Science.

Several of the most influential members of the Association of Geologists and Naturalists took part in the general meeting of The National Institution in 1844—Browne, Locke, Maury, Johnson, Morris, Bailey, Mather, Haldeman, and Morton. Others, who joined the Association for the Advancement of Science in its earliest years, were also present, and saw for themselves the advantages and opportunities afforded by such gatherings.

The leaven began to work. In the meeting for 1844 there were four biological and two chemical papers. The Association of Geologists and Naturalists in 1845 announced that "a constant effort has been made to counteract the impression that the objects of the association are exclusively geological or directed to those cognate subjects only which have a direct bearing upon that subject," and to throw open its doors widely for all cultivators of science and the arts who choose to enter. In 1847, at the eighth meeting, the papers belonged to all branches of science. Thirty-seven were read, of which nine related to geology, seven to paleontology, seven to zoology, five to chemistry and physics, three to anthropology, two to meteorology, one to institutions.¹

The new society was born, and it is significant that the name first adopted was as nearly as possible a combination of the names of the two parent organizations. The one contributed the first half of the name—"The American Association;" the other the second half—"for the promotion of science." The word "advancement" in place of "promotion" was substituted afterwards, probably by the first committee on rules. Even if it were possible it would be scarcely worth while to determine the proportionate extent of the participation of either of the two societies in the early history of The American Association. The influence of The National Institution should, however, have due recognition, and the fact should not be forgotten that under its auspices, and in the city of Washington forty-seven years ago, took place the first national congress of American men of science.

It seems appropriate that the remaining seven years of the first half century of The American Association should be devoted by those concerned in the organization of American science to a unification and concentration of the forces which now, not purposely but actually, are in part centrifugal. The midsummer meeting of the association this year has brought around it a cluster of other meetings of kindred bodies. It is worth the effort to endeavor to induce the other societies of professional men of science to meet in conjunction with our great association. To bring this about it might be necessary to hold two meetings in the year—one in midsummer at some city of hotels, as the seashore or in the

¹American Journal of Science, 2d ser., IV, 1847, p. 428.

mountains; another in the winter holidays in some large city, where the associations would be brought into relationship with local institutions at the time of greatest activity. A winter meeting would render it possible for all of the kindred societies of specialists and professional workers to meet in connection with the association occasionally, or it may be each year. It would be a glorious occasion if, when the American Association in 1898 enters upon the second half of its first century, it should have actually assumed its natural functions as the central agency for all American scientific effort.



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