

SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE
OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION
FOR THE ADVANCEMENT OF SCIENCE

FRIDAY, DECEMBER 27, 1907

THE CHICAGO MEETING

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THE meeting of the American Association for the Advancement of Science and its affiliated national scientific societies, to be held in Chicago during the convocation week that begins on Monday next, will be an event of consequence for the history of science in America. It will be by far larger and more important than any previous gathering of scientific men west of the Atlantic seaboard. Since the establishment of convocation week and the affiliation of the scientific societies, there have been three large meetings, those of Washington five years ago, of Philadelphia three years ago and of New York a year ago. At each of these meetings the attendance exceeded 1,500, and the proceedings represented a considerable part of the scientific work accomplished during the year. In the Christmas holidays of 1901—the year before the first of the convocation-week meetings—the American Society of Naturalists met at Chicago, and this meeting was the largest in its history. It was surprising as well as gratifying to note the large number of active scientific workers from Illinois and the neighboring states, as well as the number willing to make the trip from the Atlantic states and even from the Pacific seaboard.

It is now nearly forty years since the American Association last met in Chicago.

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At the meeting which opened on August 5, 1868, there were 259 members in attendance. The immediately preceding meetings at Burlington and Buffalo had, respectively, an attendance of only 73 and 79 members. At the time of the Chicago meeting the membership of the association increased from 415 to 686. The retiring president was Professor J. S. Newberry, the eminent geologist of Columbia University, and the president of the meeting was Professor B. A. Gould, the eminent astronomer of Harvard University.

The forty years that have elapsed since the Chicago meeting of the association have witnessed a growth of scientific and educational institutions and an increase in the number of scientific workers unparalleled elsewhere or hitherto. Cornell University was established in the year of the Chicago meeting; one year later the new administration of Harvard University under Dr. Eliot was inaugurated; the Johns Hopkins University opened its doors in 1876. Since then our universities have become great centers for research as well as for instruction. Parallel with them have been established museums and institutions devoted wholly to investigation; while the national government and the states have undertaken work in economic and pure science to an extent that none could have anticipated a few years ago.

The state of Illinois and the city of Chicago, beginning later, have witnessed a rapid development of their scientific institutions, scarcely rivaled by any other state or city. Nowhere else will there be found a state university and an incorporated university which have enjoyed a growth so

great as that of the University of Illinois and the University of Chicago. Twelve years ago there were 500 students in the University of Illinois; there are now 4,000 students and 500 teachers. The University of Chicago, which has received gifts amounting to \$27,000,000, was opened only sixteen years ago. Northwestern University and other institutions of the state have developed in nearly equal measure.

Our societies have aimed to adjust themselves to this scientific activity, ever increasing in range and complexity, and have on the whole succeeded. In 1875 the American Association was divided into two sections, one for the exact sciences and one for the physical sciences. In 1882 nine sections were established corresponding in general to the present organization, except that a section of physiology and experimental medicine was added five years ago, and a section of education will hold its first meeting next week at Chicago. The American Chemical Society was organized in 1876; the American Society of Naturalists in 1883, the Geological Society of America and the present American Mathematical Society in 1888, and there are now national societies for nearly every science. The interrelations of these societies offered many perplexing problems, and it can not be claimed that they are all solved. But it is undoubtedly true that progress has been made, and that the general spirit of cooperation among scientific men is better than ever before.

The natural group is those living in the same locality and having common interests. Such a group may unite with others in the same neighborhood to form an academy

and with others following the same science to form a national society. The members of the local academies and national societies, in so far as they have common interests, would unite in a national association for the advancement of science. Among the questions open are the size of the local group—whether it should be limited to a city or include a state or have some other basis—whether it should be limited to the natural and exact sciences or should include other groups, as the historical and linguistic sciences or medicine and engineering. In the case of the special societies there is a tacit agreement to make them national or rather continental, but there is a tendency to hold sectional meetings. Thus this year the zoologists are meeting both in Chicago and in New Haven, and the mathematicians are meeting both in Chicago and in New York. It seems certain that the national societies will be maintained for purposes of publication, and it seems probable that they will continue to hold general meetings.

The American Medical Association has an organization devised with great care. There are county societies, which unite in state societies and these form a national association. The national association conducts an admirable weekly journal and holds annual migrating meetings. There is a house of delegates for legislative purposes having strong standing committees. The teachers of the country, who, like the physicians, are subject to county regulations and state laws, are organized along similar lines, but less effectively. The chemists, who include those engaged in professional work as well as those devoted to pure science,

have an excellent monthly journal and regional sections with two annual migrating meetings, one of which is held in affiliation with the American Association. Each of the natural and exact sciences has now its organization, and in some cases the society has regional sections. Thus the American Mathematical Society holds meetings in the eastern, central and western states and the American Society of Zoologists in the eastern and central states. There are also local societies for special sciences, which are not as yet affiliated with the national organizations.

We surely need a general association to represent the united scientific interests of the country, but the relations that should subsist between it and the special national societies and the local and state academies are not entirely clear. The American Association may become an affiliation of scientific societies rather than of individuals, its work being done by a council or senate representing the separate societies. It may hold meetings that are national or sectional or both. It may include only the natural and exact sciences, being coordinate with the associations for philology, history, medicine, engineering, education, etc., or it may aim to represent all the scientific interests of the country.

Under existing conditions of our civilization cooperation and organization are required, and there are at least four reasons, which make them essential in science. The first of these is that science is by its nature cooperative; men of science must work together for a common end. The second is the vast importance of science for the stability and progress of society. The third

is that scientific work is not economically self-supporting. Scientific men are not paid directly for the research work they do, and means must be found by which scientific work shall be supported. The fourth is closely connected with this—the need to keep science in touch with the general public, whence it must obtain its recruits and its support.

We can not therefore doubt that a national association for the advancement of science will be maintained, and that it will grow in importance and influence. It is the part of each scientific man to support the existing organization, to exercise patience when the complexity of the immediate situation does not admit of easy solution, and to do his share toward improving the conditions. Not only all scientific men, but also all those who wish well to science, should appreciate the privilege of membership in the American Association and the desirability of attending the approaching meeting at Chicago.

*HISTORY OF THE FORMER STATE NATURAL HISTORY SOCIETIES OF ILLINOIS*¹

THE history of scientific organization is a part, merely, of the history of scientific progress, and that is a part of the history of the progress of civilization, and especially of education; and the subject which I am to present is no exception to this rule. It is difficult to omit from even a brief abstract of the history of the Illinois natural history societies all reference to the character and status of the general movements of which they were scarcely more than by-products, and still to leave in the account enough significance to make it

¹ An address given on the occasion of a meeting called to establish the Illinois Academy of Sciences.

worthy of presentation here. Under these circumstances I shall be governed by the reflection that we are to-day looking forward and not back—that we are preparing for the future and not studying the past—and that we are hence practically interested in what has come and gone only as it may help us to bring a new thing into being in a way to secure its permanent continuance and its normal growth. There have been two state natural history societies in Illinois, one founded in 1858 and the other in 1874. The first was the result of a proposal by an entomologist, Dr. Cyrus Thomas, afterwards state entomologist of Illinois, made at a meeting of the State Teachers' Association at Bloomington in 1857. The second sprang up as a sequel to the sessions of a summer school of natural science held at the State Normal School, at Normal, and had for its first president the state geologist, A. H. Worthen, and for its first secretary the present writer, then in charge of the museum of the old society in the State Normal building.

The first society was chartered by the state legislature in 1861; held its tenth and last annual meeting in 1868; published, in 1861, Volume I., series 1, of its *Transactions* (in Volume IV. of the *Transactions* of the State Agricultural Society, and again, in a second edition, in 1862, as a separate pamphlet, a rare copy of which I hold in my hand); formed a museum of natural history which was housed in the building of the State Normal School at Normal; and held two final business meetings in Bloomington, May 26 and June 22, 1871, for the transfer of its museum to the state in accordance with a provision of law passed by the general assembly of that year. This museum, held by the State Board of Education "for the use and benefit of the state," was gradually transformed, in due time, into the present State