

# SCIENCE

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THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

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IN a few weeks the American Association for the Advancement of Science will begin its annual session, in the city of Springfield, Massachusetts. It is now fifteen years since the Association met in New England, during which time its meetings have been held in various parts of the country, including points as widely separated as Minneapolis in the Northwest and Washington in the Southeast.

The meeting of 1880 was held in Boston and, up to the present time, is distinguished from all others, either earlier or later, by the large attendance, the great local interest manifested and the importance of the papers presented. The meeting at Philadelphia, in 1884, was, perhaps, the closest approximation to the Boston meeting as far as concerns these points, but the latter must still be regarded as the high-water mark in the history of the Association.

It is unnecessary, in these columns, to refer to the history of this Society, as it is, doubtless, very well known to most of our readers. The first meeting was held in the year 1848, in the city of Philadelphia; the organization then accomplished growing,

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however, out of another, namely, the Association of American Geologists and Naturalists, which had preceded it by a few years. From that year up to the present, with the exception of a period during the Civil War, regular annual sessions have been held, and, indeed, for a time two meetings a year were thought necessary to enable the Society to do its work.

At the meeting at Newport, in 1860, it was agreed that the next meeting, that of 1861, should be held at Nashville, Tenn. However, the course of events, not only as relating to this organization, but to all others, was subjected to extreme modification by the breaking out of the Civil War in the spring of 1861, resulting in the suspension of the meetings of the Association until 1866, when it again resumed its work, holding its first session of the new series in Buffalo, N. Y. The number of members has grown constantly from the beginning, until for several years it has considerably exceeded two thousand.

It is also unnecessary to refer at length to the great importance of the existence of this Association to the scientific interests of the country. Through it students of the various departments of science have been annually brought together, resulting not only in the increase and diffusion of knowledge, but in the cultivation of a fraternal spirit among men working along the same lines, that has had much to do with the great advances that have taken place during the past quarter of a century.

The Society has been from the beginning very largely popular in its character. It has not attempted to restrict its membership by the establishment of conditions

as to professional attainments or knowledge, but, on the contrary, has been fairly open to all who have any desire to be actively interested in the advancement of science. The wisdom of this course cannot be denied, and it has been followed, as is well known, in other countries with equally satisfactory results. It is true that the Society has been at times by some persons rather severely criticised for the liberality with which it welcomes all who desire to become members, and especially for the rather liberal way in which contributions in the way of papers have been received and treated by its controlling committees; but it is believed that a more careful examination of the actual results of this course will prove that, on the whole, it has been a wise one. Scientific men sometimes forget that it is necessary for them to have a constituency, without which it would be impossible for even the most accomplished to enjoy the opportunities and facilities which are necessary for the successful prosecution of their work. It is not even necessary that this constituency should in all cases understand the nature of the work on which the scientific man is engaged, but it is necessary that, in some way, it should be interested in that work and that it should be convinced that, although not understood, it is of value to the human race, either present or prospective. There are Societies in this country, as well as elsewhere, which are organized solely for the benefit of those who are engaged in scientific investigation and research. They have little in their transactions of interest to the general intelligent public, and it is entirely proper that they should exist for the purpose of encouraging and discriminating among those who

devote their lives in a greater or less degree to original investigation. But it cannot be denied that such a Society as the American Society for the Advancement of Science is, after all, of greater value than these, in that it furnishes the channel of communication between the purely abstract scientific work of the very limited number who by nature and occupation can engage in such work and the great intelligent public upon whom such men must, after all, depend for their support and final appreciation.

It has been noted with considerable regret, during the past ten or fifteen years, that a number of the more prominent men of science in the United States have not actively interested themselves in the affairs of the Association. There are several reasons that have been adduced for this, not the least of which is the inconvenience of attending its annual meetings occurring, as they do, during that part of the year which the majority of scientific men have set aside for purposes of recreation and rest. By a small number it has also been objected that the Association has not been and is not maintained in a way to satisfy their desires, in that it has not been sufficiently exclusive in the matter of membership and in the matter of papers which it has permitted to be read and discussed at its meetings. The last excuse for a lack of interest in this work has already been commented upon, and has its origin in a failure to understand the real objects of the Association, and also in a failure to understand the real relation that ought to and in a great degree must always exist between the scientific world and the general intelligent public. The difficulty of attending its

meetings is usually greater for many of those who are quite constant and regular in their attendance than for many others who are much less so. An examination of the list of those present at the various meetings during the past decade will show that New England has fallen very far short of furnishing her quota of membership. One might naturally expect, owing to the large number of institutions of learning, of a high grade, of scientific and technical institutions, and of scientific men independently engaged in original research found within the borders of New England, that her influence would be paramount in the direction and management of the American Association for the Advancement of Science, and so it might be if New England cared to have it so. Some of those who occasionally indulge in criticism upon the conduct of the Association have little excuse for so doing, because they rarely, if ever, attend its meetings, and, therefore, never attempt to direct or control their management. Indeed, it may justly be said that those who have criticised the methods of the Association most frequently and most severely might easily have made it whatever they wanted it to be if they had cared to take enough interest to attend its meetings and use their influence in directing its affairs. The meeting at Springfield will afford an opportunity rather rare for members of the Society both in the East and in the West. Western members will be glad to attend this meeting, because it will bring them within reaching distance of a large number of schools, scientific laboratories, institutions of learning and others which they occasionally like to visit and inspect

and which they can well see before or after the regular session of the Association. Those residents of New England who are members of the Association and those who ought to be members of it cannot, this year, have the excuse of inconvenience and difficulty in attending its meetings. The place of meeting is so convenient that in many cases only an hour or two at most will be required to reach it, and certainly this expenditure of time and energy, even in August, ought not to stand in the way of such attendance. Indeed, New England members should not forget that a very large number of their colleagues in this Association travel several hundreds, and a considerable number of them several thousands, of miles in order to attend its meetings, and it ought to be a matter of pride with them to furnish a respectable quota of membership when the distance is comparatively trifling. In short, it is greatly to be hoped that New England colleges and New England institutions of learning of all classes will furnish a large contribution to the membership of the Association at the meeting in Springfield. It is anticipated that a very large number of members will be present from the West and South, and as the meeting will be distinctively a New England meeting, it is sincerely hoped that New England may be largely and ably represented in the membership.

Very considerable preparations have been made locally for the reception and entertainment of the Association. A number of excursions have been planned, which will be of great interest to those who are interested in different departments of natural science, and, altogether, the preparations

for the meeting are quite as forward and promising as ever before in the history of the Association.

It is particularly desired that a large number of good papers shall be ready for the consideration of the committee before the opening of the meeting. The Vice-Presidents of several of the sections have already indicated their wish that papers might be prepared in advance and forwarded to the committee, that they might be considered and reported upon so as to be put upon the programme early, and they desire that those who are contemplating the presentation of papers at this meeting should act upon this suggestion and forward to their address, that is, the address of the Vice-Presidents shown in the circular of information, as early as possible, a list of titles and subjects for discussion, which will be submitted to the committees for recommendation. Special effort has been made, and a special desire has been expressed by the Vice-Presidents of the sections relating to mathematics, physics, chemistry and mechanics. There are doubtless many persons interested in these subjects who have material which would be of great interest to the Association and which they have contemplated presenting on the occasion of the meeting. From all such these officers hope to receive titles as early as possible, and from others who may possibly be prevented from attending the meeting they would be very glad to receive papers for presentation, which may be read by other members of the section after approval by the proper committee. It is especially to be remembered that membership in the Association is not a necessary preliminary to the presentation

and acceptance of papers. The privilege of reading before any of the sections will be undoubtedly secured to any author of an accepted paper, his election to membership being almost certain to follow the approval of a paper by the sectional committee.

It will be noted by those interested that the meeting of the Association has been put at a somewhat later date this year than usual, the object being to bring it as nearly as may be just before the opening of the fall terms in colleges and other institutions of learning. This change was made after much consideration of the inconvenience to which reference has been made above, arising out of the fact that the meeting of the Association broke into the annual vacation of many of its members. By putting the date a week later, it is believed that the meeting will be found to come more nearly at the end of the vacation for the great majority of its members and that they will, therefore, find it convenient to be present at its meetings after having enjoyed the rest and recreation for which they have arranged during the summer months, and will be able to proceed directly from the meeting of the Association to begin the work of the year.

The British Association for the Advancement of Science has long been the great scientific event of the year in England; its meetings are generally attended by not only the very ablest and the most distinguished men of science in England, but by all ranks of those engaged in scientific investigation, those engaged in teaching science and many hundreds, if not thousands, of those who have only a general interest in the advancement of science. By reason of this very

general and very united effort on the part of all of these various classes, the British Association for the Advancement of Science has long been a power in Great Britain, and to it may be attributed more than to any other organization the wide interest in and generous support of scientific research which is to be found there in a degree greater than in any other country in the world. The American Association for the Advancement of Science should sustain in this country the same relation to the progress of science as that of the British Association in England, and in a great degree it already does; but it must be admitted by all that it falls short of reaching the high degree of efficiency of which such an organization is capable, and it is to be hoped that this state of affairs may be remedied in the near future by the hearty and earnest coöperation, in the support of the Association, of all classes of men engaged in scientific pursuits or interested in the progress of science.

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#### A ROCK FISSURE.

In the autumn of 1891 the work of the U. S. Geological Survey led me across the Colorado plateau in northern Arizona. Canyon Diablo is a gorge about as broad and deep as the gorge of Niagara, 40 or 50 miles in length, running northward and ending at the Little Colorado River. One day I followed its east wall to the mouth, and then turning westward on the road toward Flagstaff, rode six or eight miles to the McMillan place, where a rude cabin constitutes the headquarters of a sheep ranch. Drinking water for the 'sheep herders' (occidental for shepherds) is obtained from a natural well close by, which