SCIENCE

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MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

THE FIFTIETH ANNIVERSARY OF THE AMERICAN ASSOCIATION.

THE American Association for the Advancement of Science celebrated the fiftieth anniversary of its foundation at Boston from the 20th to the 27th of August. The meeting, as all knew would be the case, was eminently successful, both in regard to the scientific work accomplished and in the occasions for social intercourse and enjoyment so liberally provided. As stated in the report of the new Permanent Secretary, Dr. L. O. Howard, at the closing session, the meeting was in many respects the most successful in the history of the organization. In point of numbers the attendance made it the fourth meeting in the history of the Association. Two of the meetings which have exceeded it in attendance have been held in conjunction with the British Association for the Advancement of Science, and the third was held in Boston; so that Boston has been excelled only by Boston. The scientific and other advantages of Boston, and the fact that the meeting celebrated the fiftieth anniversary of the founding of the Association, attracted members in large numbers. The total registration was 903, and almost every State in the Union was represented. The State which had the largest representation was naturally Massachusetts, with a total of 231; New York came second, with 158, and the District of Columbia third, with 96.

The other States were represented as follows: Pennsylvania by 55; Ohio by 53; Connecticut, 29; New Hampshire, 23; Michigan, 23; New Jersey, 20; Maryland, 19; Wisconsin, 18; Missouri, 17; Illinois, 15; Rhode Island, 14; Indiana, 12; Maine, 10; Virginia, 10; Iowa, 10; Vermont, 7; Minnesota, 7; North Carolina, 6; Florida, 6; Kansas, 5; Mississippi, 5; Kentucky, 5; West Virginia, 4; Georgia, 4; Louisiana, 3; Tennessee, 3; Texas, 3; Colorado, 3; South Carolina, 2; Nebraska, 2; and Montana, North Dakota and California, 1 each.

The term American has always been held by the Association to include not only citizens of the United States, but of other American countries, and members from Canada have always been present at the meetings. At this session there were present 16 members from British North America. There were representatives from other countries in attendance. The Republic of France sent an official representative, who, with his wife, appears upon the registration list of the meeting. Moreover, three persons have registered from Great Britain; one from New South Wales; one from Brazil, and one from Japan.

Not alone in point of the numbers in attendance was the meeting remarkably successful. More papers than usual were read before the different sections, and it is unnecessary to make the statement that the character of these papers as a whole was of the highest order. Considering that during the week an entire day was spent at Salem at which no papers were read, and that another day was spent at Cambridge during which but few papers were read, and that the first day, Monday, was entirely occupied by the general session and the delivery of the addresses of the Vice-Presidents, it is remarkable that the Association should have completed the reading and discussion of so many different papers. In all 443 papers were considered during the week. Of these 39 were presented to Section A; 51 to Section B; 90 to Section C; 20 to Section D; 54 to Section E; 35 to Section F; 56 to Section G; 10 to the Botanists' Club; 55 to Section H; 33 to Section I.

The success of the Boston meeting was further very marked in the attendance of so many of the older and more prominent men of the United States. No less than nine past Presidents of the Association took part in the discussions of the week, and in this fact, no less than in the greatly increased attendance over that of the last meeting, is to be seen most encouraging signs of the future of the Association.

The first general session of the Association was called to order by the retiring President, Professor Wolcott Gibbs, at 10 o'clock on the morning of August 22d. Addresses of welcome were made by His Excellency, Roger Wolcott, Governor of Massachusetts; His Honor, Josiah Quincy, Mayor of Boston; and President James M. Crafts, of the Massachusetts Institute of Technology, to which a reply was made by President Putnam.

The address of Governor Wolcott, as reported in the *Transcript*, was in part as follows: It is with far more than ordinary pleasure that, on behalf of the Commonwealth, I extend a most cordial greeting to those who are present here to-day. The American Association for the Advancement of Science on this, its fiftieth anniversary, has done well to return to the soil of the Commonwealth which was the place of its birth and which gave to it its charter. I welcome you all—those who come from the many cities of our country and those who come from foreign lands. The Commonwealth is honored by your presence. As seekers after truth, you have devoted your lives to following the footsteps of science, whether her majestic way is across conti-

nents, following the pathway of stars, or whether she delights to follow the minutest particles revealed by microscopic research.

Governor Wolcott then described at length in an eloquent and scholarly manner the many benefits coming to the world by the researches of men of science, and, continuing, compared them to the men who have erected lighthouses on the coast, guiding and directing the course of those who will come after them. He spoke of the infinite possibilities of science, and said that, in spite of the great advances that have been made, little is known to-day of the mysteries of nature, so elusive is its touch.

It is for you, he said, little by little, as the years and centuries go on, with faithful and painstaking search, to learn a little more of that great ocean of truth and to launch your barks a little farther on the sea of science, and to know more about the stars, the plants, the pebbles and the shells. The truth is that science is still sweeping beyond you and is beckoning you to follow her. Science would be less worthy of our regard if its benefits should be limited to any class, but it is open to all.

It is as men of science that the Commonwealth welcomes you to-day. May you bear away from this meeting pleasant memories of the State, rich in the valor and achievements of her sons. And may you leave behind you that inspiration which is fostered and cherished by men who are brought together to compare notes and clasp hands and carry back memories of this meeting. The Commonwealth greets you and expresses to you her recognition, and bids you welcome to the old Bay State.

Mayor Quincy, being introduced, spoke as follows: We are grateful to you for giving us an opportunity of seeing you here, that we may listen to your deliberations and exercises, and for having the privilege of entertaining you in some measure. I may say in truth that there is no other city in this country which would appreciate more highly the privilege of having this anniversary meeting held within its borders than the city of Boston. I think I may claim with truth that in no city is science held in higher esteem, in no city is the great work of science and the widespread beneficence of its results more recognized than in the city of Boston. There is no organization to which we would more gladly open our doors than to your American Association for the Advancement of Science. Your work has a very direct relation to the work in which the people of the city of Boston are engaged, in their corporate capacity, and the work which their municipal government is trying to prepare for them. As I regard it, the work of good municipal government is the task of securing the practical application of the principles of science to the great fund of knowledge which has been won for us by science. I am continually impressed in my practical relation to the work of this great city with the vital relation which science bears to that work. More efficient government is to be sought along the lines of affairs which fall within the scope of our municipal government, and this is to be won for us by the investigators who have increased their knowledge of science within the last fifty years.

I trust and believe that this interesting occasion may do something for us as well as something for the American Association for the Advancement of Science, and I hope that among other benefits it may give to our citizens as a whole a greater appreciation of what science is and of what science does; and not only of what science does in the abstract or in the way of theoretical investigation, but demonstrate the value of science as the handmaid of civilization which enlarges the views of mankind and lifts society up to the highest plane of thought. If the first result is economy in

its relation to humanity; if its first effect is to enlarge our minds and give us a wider power of interpretation of nature, to harness more effectually the forces of the great mother, and to save labor, it has no less surely its social and its intellectual side. First is to be considered the economical possibilities, which mean easier living with infinite improvements in the art of living, and after it comes the advancement of all humanity and the more complete progress which must accompany social uplifting. We are endeavoring in a partial and incomplete way to apply some of the principles of science to the practical benefits of the one-half million people within the limits of this municipality. I am proud to say that we give a high place in everyday work to men of science who are giving technical application to the principles which have come to light through the investigations of abstract science. Work in the future will demand a fuller employment of men of science. I am proud to say that we are commanding the interest and the services and the hearty cooperation, without price and without regard, of men who are endeavoring to give in some measure a practical social science, and, while this may be a far less exact science that many others, I firmly believe that there is a social science and a political science, and that the domains which come within its knowledge are constantly widening, both as regards the body social and its evolution and the body politic and how to secure its best application. I heartily congratulate the American Association and welcome it back, after fifty years, to the scene of its birth, and extend thanks and welcome, on behalf of the city of Boston, to each and every one of its members, in view of this meeting here and the work which the Association is yet to do in the first half of the century to come.

President Crafts, of the Massachusetts Institute of Technology, followed Mayor Quincy, and made a most interesting address, which is printed in full below.

President Putnam, on being introduced by the retiring President was heartily cheered, all recognizing that his services as Permanent Secretary for twenty-five years had been the chief factor in the great growth and success of the Association, while his own contributions to science had given him a double claim to the highest office in the gift of the Association at this anniversary meeting. President Putnam made an address which it is hoped may be subsequently published in this JOURNAL.

M. Charnay, the official delegate from the French government, was introduced and spoke briefly in French. A message was also read from the Russian Geological Committee of St. Petersburg sending congratulations and good wishes. After listening to announcements of the Local Committee the session adjourned.

In the afternoon the Vice-Presidents gave their addresses before the different Sections as follows:

Section A. Mathematics and Astronomy: Development of Astronomical Photography; Vice-President Barnard.

Section B. Physics: On the Perception of Light and Color; Vice-President Whitman.

Section C. Chemistry: The Electric Current in Organic Chemistry; Vice-President Smith.

Section E. Geology and Geography: Glacial Geology in America; Vice-President Fairchild.

Section F. Zoology: A Half-century of Evolution, with Special Reference to the Effects of Geological Changes on Animal Life; Vice-President Packard.

Section G. Botany: The Conception of Species as Affected by Recent Investigations on Fungi; Vice-President Farlow.

Section H. Anthropology: The Advance of Psychology; Vice-President Cattell.

Section I. Economic Science and Statistics: The Historic Method in Economics; Vice-President Blue.

Vice-President Cooley, of Section D, Mechanical Science and Engineering, having been detailed to active service in the navy

was unable to be present, but the Section was addressed by Professor R. H. Richards, his subject being 'Ore-Dressing.' The addresses of the Vice-Presidents will be published in full in SCIENCE.

In the evening the retiring President gave the highly important though somewhat technical address 'On Some Points in Theoretical Chemistry,' printed in the last number of this JOURNAL.

The work of the Sections was chiefly confined to the morning, afternoon and evening of Tuesday and Thursday, though some of the Sections held sessions on Friday and Saturday. The scientific papers presented will be adequately reported in subsequent issues.

Wednesday was devoted to an excursion to Salem and neighboring places of scientific and historic interest. By invitation of the President and Fellows of Harvard College, the members of the Association were guests of Harvard University on Friday. The scientific museums and laboratories were visited under the guidance of the heads of the departments, and in the evening President Eliot made a most admirable address, a report of which is given below. Among the other entertainments provided for members were receptions by the trustees of the Museum of Fine Arts, and the officers of the public library, by Governor Wolcott, Mrs. W. B. Rogers and Mrs. J. C. Phillips. Mayor Quincy entertained the principal officers of the Association and several foreign guests at dinner on Tuesday evening. There were also private dinners and receptions given to various members. Many interesting excursions were arranged by the Appalachian Mountain Club, including an extended trip to the White Mountains, following the meeting.

During the meeting the Council held frequent sessions. Several alterations in the Constitution, which will be acted on at the next meeting, were recommended. A number of fellows were elected, including several leading men of science. Grants of $50 each were made to the Committee on Standards of Measurement for work being carried on by Professor H. S. Carhart, and to the Committee on the Ethnology of the White Race in America, for instruments to be constructed by Professor J. McK. Cattell. Other applications for grants were laid on the table on the ground that they did not fill the conditions of a resolution passed by the Council which was as follows:

Resolved, That grants be awarded under the following conditions:

(1) That a formal request be received for such grant.

(2) That a grant be awarded for a specific investigation only.

(3) That a report be submitted to the Association describing the results of such investigation.

The Council authorized Section H (Anthropology) to hold a winter meeting in December, 1898. This will be held at Columbia University, New York, in connection with the meeting of the American Society of Naturalists and affiliated societies, and at the same time a meeting of the Council of the Association will be held.

The concluding general session on Saturday morning was chiefly devoted to the customary addresses of thanks, which this year were presented with unusual cordiality. Dr. McGee offered the resolutions, and short addresses were made by M. Charnay, Dr. Brinton, Dr. Hovey, Professor Sedgwick, Professor Tyler, the Rev. Dr. E. E. Hale and President Putnam. A report was made to the Association of the work of the Council, including the announcement that Columbus, Ohio, had been chosen as the next place of meeting, and that the following officers had been elected for the ensuing year:

President: Edward Orton, President of Ohio State University.

General Secretary: F. Bedell.

Secretary of the Council: Charles Baskerville.

Treasurer: R. S. Woodward.
Vice-Presidents:
Section A. Alexander MacFarlane.
Section B. Elihu Thomson.
Section C. F. P. Venable.
Section D. Storm Bull.
Section E. J. F. Whiteaves.
Section F. Simon H. Gage.
Section G. Charles R. Barnes.
Section H. Thomas Wilson.
Section I. Marcus Benjamin.
Secretaries of Sections:
Section A. John F. Hayford.
Section B. William Hallock.
Section C. H. A. Weber.
Section D. James M. Porter.
Section E. Arthur Hollick.
Section F. Frederick W. True.
Section G. W. A. Hellerman.
Section H. George A. Dorsey.
Section I. Calvin M. Woodward.

James McMahon,
General Secretary.

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*A GREETING TO THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.**

To the greetings which have been so cordially offered to you in behalf of the State and of the City it is my privilege to add a few words of welcome from the Institute, which is honored by your visit to-day.

You have not often favored us with your company, for you waited until the 29th year of the foundation of the Association before you held your first Boston meeting. Now twenty-one more years have elapsed before you visit us again, and we are pleased that it should be for the purpose of holding your semi centennial anniversary in this city.

If your visits, like those of angels, are rare they are all the more highly prized, and many of us feel that we must make the most of this one, because we may not, in the course of nature, hope to live to see you with us again, if your orbit is fixed by the intervals of your past appearances. While saying that you waited twenty-nine years before making your first call upon us, it should be added that long ago, in 1849, the second meeting of the Association was held in Cambridge, and that the Bostonians had the advantage of participating in that meeting in the same way that now our good neighbors of Cambridge and of other near places join in welcoming you to this one.

At the date of the Cambridge meeting Harvard College was 213 years old, and the institutions of Boston and of the neighborhood which now have the honor of greeting you were unborn and unthought of. Since that time Tufts College, Boston College, the Massachusetts Institute of Technology, Boston University and Wellesley, naming them in the order of their foundation, have grown up like young plants, and, notwithstanding the rapid increase of Harvard University, they surpass it at present in the number of their students. The total adds up to nearly 8,000 students and more than 800 teachers, about the same number as at the University of Paris.

It would be a poor greeting to deluge you with statistics, but I trust you will pardon these few, which are meant to show that since you have visited us we have been diligently occupied in preparing a fitting audience to meet your second, or rather your third coming, for the teachers and students in these colleges have come in larger part from New England, and particularly from this neighborhood, and, their education finished, they have remained in their New England homes, and whatever has clung to them of their college life is potent in shaping the modes of thought of their community. This center of education, then, is one of the largest in the world, and it is eager to give

*By President J. M. Crafts, Massachusetts Institute of Technology, at the opening session, August 22, 1898.