

that still exists in California, have been flooded by the continued subsidence of the Bay of San Francisco.

It is remarkable and little appreciated that the physical history of the Pacific coast should be so like that of the eastern coast of America. On both sides we have the preglacial, Sierran or Ozarkian, elevation of the land, and erosion of deep canyons; the southward advance of the glaciers; the Champlain, or San Pedro, subsidence and amelioration of the climate; the Terrace elevation and moderate erosion; and the recent subsidence that made the fiords of New England and of Puget Sound, the gentler bays of California and Oregon on the west, and the sounds of the Atlantic states on the east. On both sides of the continent submerged canyons run out to sea, marking the course of drowned rivers of early Quaternary time, now forming channels of navigation, making possible the maritime commercial centers of the east and the west.

JAMES PERRIN SMITH

*THE WINNIPEG MEETING OF THE BRITISH
ASSOCIATION FOR THE ADVANCEMENT
OF SCIENCE*

THE seventy-ninth annual meeting of the British Association for the Advancement of Science was held at Winnipeg, Canada, August 25 to September 1, under the presidency of Sir J. J. Thomson, professor of experimental physics in the University of Cambridge. This was the fourth time only in the long history of the association that it met outside of the British Isles; the other three being Montreal 1884, Toronto 1897, and South Africa 1905. The westward movement of the Canadian meetings and the increasing frequency of the meetings outside of the British Isles afford much food for thought, and the former was the source of many comments as regards the rapid development of central Canada and of Winnipeg in particular.

The inaugural meeting, held in the Walker Theater on the evening of August 25, was opened by the rising of Professor Geo. Carey Foster, who asked Major MacMahon, the general secretary, to read a letter from the retiring president, Francis Darwin, who was unable to be present. After the reading of this letter the president-elect, Sir Joseph Thomson, read his inaugural address, dealing with a wide range of educational matters in

a very scholarly manner. His expressed wish that the interchange of students between the British Isles and Canada should increase was received with loud applause.

After this address Mayor Evans, of Winnipeg, welcomed the association and delivered a very interesting address, which was in part as follows:

"To the men and women who have earned by their services the position of leaders in the work of science and to the association which is devoted to the encouragement of scientific investigation and the spread of scientific truth, we would do all honor and to them we extend a hearty welcome to our city and to our country. To those who are present from the nations of continental Europe and from the United States we offer a particular welcome to this portion of the British empire, for beyond the value of their contributions to the success of this meeting from the scientific standpoint, their consent to participate in the work of this association must strengthen among the nations the realization of unity of interests in the fundamental concerns of life, which should, and we believe will, tend more and more to lessen the causes of serious dispute.

"But cosmopolitan as it is and must be in its spirit, we do not forget that this is the British Association for the Advancement of Science, an institution of our own empire, with its origin and home in the heart of that empire. To it, as an evidence of the vitality of the higher life of the empire and as a most important agency in the improvement of the material conditions of the British peoples, as well as in the stimulation and discipline of their rational powers, we give a welcome that draws a quality from our common patriotism. We have by custom no ceremony that bestows the freedom of the city, but with all the cordial significance of that formality we bid you to be free in Winnipeg. Our city is such as you may see it. The observations of a day will, however, give you only the statical facts of the city, whereas the real Winnipeg is essentially a study in dynamics. It has trebled its population in the past eight years and is increasing to-day in that ratio. Literature is distributed to its citizens in forty-five languages and dialects and immigrants are daily coming from all quarters of the earth. It is the principal city of central and western Canada, so situated between the Great Lakes to the north and the international boundaries that all the traffic in Canada between the east and the west does and must pass through it. Its business is expanding in proportion to the remarkably

rapid development of western Canada. Its buildings, its public improvements and its institutions represent our efforts to meet the needs that are growing from hour to hour. In these respects we trust that Winnipeg may prove of interest to you."

The sectional meetings opened on Thursday morning and continued until the programs were completed with the exception that all of Saturday was devoted to excursions to various points of interest. By means of the many joint meetings and the numerous excursions, the members of the various sections were brought into closer contact and this contact between the scientists representing various fields of knowledge is one of the most important features of the Associations for the Advancement of Science. Perhaps the most important factor to promote such contact at the Winnipeg meeting was the excursion to the Pacific coast for which the western provinces and cities provided the financial support.

A feature which aroused considerable comment on the part of the members from the United States and even of those from England was the great strength of Section A. Not only did this section have an imposing program, but the interest at its meetings and the large number of distinguished scientists who participated in its discussions were most gratifying evidences of the vigor and health of the section. It would be of interest to inquire to what extent the meetings of the British Association are responsible for the long line of distinguished mathematical physicists who adorn British scholarship; and also to inquire to what extent the separation of mathematics and physics in the American Association has contributed to our lamentable and disgraceful lack of such physicists. The fact that the president of the association is a member of this section contributed to the interest in its meetings. For the consideration of the more technical papers the section met in subsections and even with this arrangement the meetings extended through September 1.

The organization of a subsection devoted to agriculture was a special feature of this meeting, but its success inspired the hope on the part of those especially interested that it might become a permanent feature of the association. It seemed especially appropriate that such a subsection should be inaugurated at the Winnipeg meeting in view of the special interests of this country. This was only one of many ways in which the association made direct returns for the great liberality exhibited by Canada in general and by Winnipeg

in particular, in providing for the entertainment of their distinguished guests. Another direct return was the arousing of interest in the University of Manitoba and its needs for better equipment. The facilities for higher education, especially the library facilities for specialists, have not been developed as rapidly as the rich material advances might lead one to expect. It seems probable that the most important local result of this meeting will be a more rapid development of the provincial university and a deeper appreciation of the importance of research.

While the total attendance of members and associates, about fourteen hundred, was only about half of the maximum number, yet the meeting was a little larger than the one held at Toronto and the ratio of noted scientists was unusually large. About one hundred and fifty of the members and associates came from the United States, and about five hundred from Europe.

Notwithstanding the fact that Winnipeg has over one hundred and twenty thousand inhabitants, the daily papers devoted much space to the reports of the meeting and their reports were favorable and unusually reliable. The *Manitoba Free Press* on September 1 said on the editor's page, "To-day's sessions bring to a close the most important meeting ever assembled in Winnipeg." The city was beautifully illuminated every night and the front of the City Hall had an arrangement of lights forming, in large letters, the words "Welcome British Association." Directions for finding the various meeting places were posted in the most conspicuous places throughout the city and the little boy who wrote on one of these posters "big guns only" may have given clear expression to the prevailing view. At any rate the attention and favors shown by the inhabitants of Winnipeg to the members of the association might imply such a view and the arrangements for the comfort of the members left nothing to be desired.

The next annual meeting of the association will be held in Sheffield, England, from August 31 to September 7, 1910, under the presidency of Rev. T. G. Bonney, D.Sc., LL.D., F.R.S., emeritus professor of geology, University College, London. According to the established custom of the association the presidents and other officers of the sections will be appointed by the council about Christmas. The general treasurer, Professor John Perry, F.R.S., and the general secretaries, Major P. A. MacMahon, F.R.S., and Professor W. A. Herdman, F.R.S., were reelected at this meeting.

G. A. MILLER