

expense of clerk hire and the other expenses incident to the work of cataloguing the scientific publications of the United States, the same to be expended under the direction of the Secretary of the Smithsonian Institution.

*BRITISH ASSOCIATION, TORONTO MEETING.*

THE second Canadian meeting of the British Association will commence in Toronto August 18th, and will continue for eight days. Present indications are that a very large number of British visitors will be in attendance, amongst whom will be found some of the most representative men of British science. About twenty Continental savants, also of representative character, will attend.

Arrangements have been made by the Council of the British Association whereby the members of the American Association are entitled to become annual members of the British Association on the payment of a fee of \$5.00. Those who are not members of the American Association can become annual members on the payment of \$10.00 or associate members on payment of \$5.00. Arrangements are now made whereby the application for membership can be made to one of the local Treasurers of the Association, Mr. James Bain, British Association office. For the convenience of Americans who propose to attend the Toronto meeting, a list of lodgings and apartments as well as a list of hotels has been published and copies of these may be had upon application to the local Secretaries at Toronto. American members of the British Association are entitled to travel in Canada east of Port Arthur at half the usual charge for first-class tickets, this privilege beginning on July 1st and expiring on September 30th. In order to enable the members to receive this privilege they must be provided with what is called a railway certificate, which can be had on personal application to the local officers at Toronto or to the railway officers at Montreal. The presentation of

this certificate at any office will at once enable the holder of it to receive reduced railway rates. Such members also will be entitled to reduced rates for a trip over the Canadian Pacific Railway from Toronto to points in western Canada. The rate from Toronto to the Pacific coast and return varies from \$61.80 to 70.30, according to the route selected. This does not include the Pullman fare, for which an extra charge will be made.

The various excursions which are arranged for will take place either during the meeting from Saturday, August 21st, to Monday, August 23d, or immediately after it, on Thursday, 26th, 27th and 28th, and will be made at reduced rates. The excursion to Muskoka, which will be for about four hundred, embracing a run of a hundred and ten miles by rail, with a sail over the Muskoka lakes, will cost \$1.65. The excursion from Toronto to Niagara will cost \$1.25.

The office of the British Association, will be in the University of Toronto building. All the meetings of the Association excepting those for the President's address and the two evening lectures, will be held in the lecture rooms and laboratories of the University of Toronto. The President's address is to be delivered in Massey Hall, where also will be given the two evening lectures by Professor John Milne and Professor Roberts-Austen. The free lectures on Borneo to artisans will be given by Dr. H. O. Forbes, in the Horticultural Pavilion.

According to the scheme of the local provisional program, the time of the members will be pretty fully occupied. The first General Committee meeting of the Association will take place on the afternoon of Wednesday, August 18th. The President's address will be delivered on the evening of the same day. The Sections will meet on Thursday, August 19th, and the addresses of the Presidents will be then given. In the afternoon of the same day

there will be a large garden party given at the Royal Canadian Yacht Club, Toronto Island. His Excellency, the Governor-General, and the Countess of Aberdeen will in the evening give a reception to the members in the Parliament buildings of the Province of Ontario. On Friday there will be meetings of the Sections until about three o'clock, when there will be a Convocation of the University of Toronto to confer the Honorary Degree of Doctor of Laws upon Lord Kelvin, Lord Lister, Sir John Evans and the President of the American Association, Professor Wolcott Gibbs. After Convocation is over there will be several garden parties for the members. In the evening will be the lecture of Professor Roberts-Austen, F. R. S., on 'Canada's Metals.' This will be illustrated by demonstrations of electric furnaces in the reduction and separation of the various metals. On Saturday morning the Sections will meet and adjourn early, in order that the members may take the various excursions which are arranged for from Saturday to Monday. The members will be offered a choice in these, there being four routes, one to Muskoka, the lake region of Canada, a second to Niagara Falls, a third to Hamilton and Dundas, thence to Niagara Falls, a fourth to Georgian Bay. The members of the Geological Section are to visit and examine the Niagara Gorge, under the guidance of Messrs. G. K. Gilbert, J. W. Spencer and F. B. Taylor, all of whom have given special attention to the geology of the Niagara region. Arrangements are being made whereby members of this party will have an opportunity of going up by the Gorge Railway and returning by the Niagara Falls and Victoria Park Railway or *vice versa*. These two trips will enable them to cover all the special points of interest in connection with the much debated geology of Niagara Falls.

Members of the Section for Mechanical

Science will also visit Niagara to examine the Hydraulic Companies' works and the plant for the manufacture of carborundum. The various Hydraulic Power Companies have extended a special invitation to the members of the Association, and it is expected that a large number will avail themselves of the privilege accorded. It is probable that amongst the visitors on this occasion will be a large number of the most eminent electricians and engineers.

The excursionists to Muskoka will stay at the various hotels and lodging houses in the Muskoka region over Sunday. Another party will have an opportunity of visiting the many thousand islands in Georgian Bay. This group will go partly by rail to Pene-tang, thence by boat through Georgian Bay to Parry Sound, returning on Monday morning. On Monday the majority of the Sections will again meet. On Monday afternoon the Geological Section will examine the glacial region of Scarboro' Heights and the Don Valley, which are of special interest to students of the glacial age, the deposits there being very extensive and of great thickness. A number of garden parties are also arranged for the members during this afternoon.

In the evening Professor John Milne, F.R.S., recently of the University of Tokyo, will deliver an illustrated lecture with demonstrations on 'Earthquakes and Volcanoes.' On Tuesday morning the Sections will again meet. In the afternoon there will be a Convocation of Trinity University to confer the Honorary Degree of D.C.L. on Lord Lister, Sir John Evans and Professor Forsyth, this ceremony being followed by several garden parties. In the evening there will be a *Conversazione* with music and refreshments in the main building of the University of Toronto for all the members of the Association. On Wednesday the Sections will meet for their con-

cluding meeting, and in the afternoon the second and last general meeting of the Association will take place. In the evening a banquet will be given in honor of Lord Kelvin, Lord Lister and Sir John Evans, at which there will probably be in all about four hundred guests. It is proposed to reserve a number of tickets, about seventy-five, for those who may not have an opportunity of claiming one at an earlier date.

The full number of Sections will meet at Toronto. Within the last few years the number has increased from eight to ten, the increase being due to the removal of Physiology and Botany from Section D (Biology), which is now called Zoology. Section I (Physiology) only meets where there is a physiological laboratory, and consequently it will be in session at Toronto. The Presidents of the various Sections have been specially chosen for the Toronto meeting: Professor Forsyth, D.Sc., F.R.S., of the University of Cambridge, for Mathematics (Section A); Professor William Ramsay, Ph.D., F.R.S., for Section B (Chemistry); Dr. G. M. Dawson, C.M.G., F.R.S., Director of the Dominion Geological Survey for Section C (Geology); Professor L. C. Miall, F.R.S., F.L.S., for Section D (Zoology); Dr. J. Scott Keltie, Sec. R.G.S., for Section E (Geography); Professor Gonner, M.A., for Section F (Economic Science and Statistics); G. F. Deacon, M.Inst.C.E., for Section G (Mechanical Science); Sir William Turner, F.R.S., for Section H (Anthropology); Professor Michael Foster, Sec. R.S., for Section I (Physiology); Professor H. Marshall Ward, F.R.S., for Section K (Botany).

Amongst the British members who have promised to attend are the following:

Professor W. E. Ayrton, F.R.S., City and Guilds of London Institute.

Professor Henry E. Armstrong, Ph.D., LL.D., F.R.S., City and Guilds of London Institute.

E. W. Brabrook, F.S.A., London.

Colonel F. Bailey, Sec. R.Scot. G.S., F.R.G.S., Edinburgh.

Professor F. O. Bower, D.Sc., F.R.S., The University, Glasgow.

Professor W. F. Barrett, F.R.S.E., M.R.I.A., Royal College of Science, Dublin.

J. T. Bottomley, D.Sc., F.R.S., The University, Glasgow.

Professor T. Hudson Beare, M.Inst.C.E., F.R.S.E., University College, London.

Professor Francis Gibson Bailey, Heriot Watt College, Edinburgh.

Professor C. V. Boys, F.R.S., Royal College of Science, London.

The Right Hon. James Bryce, M. P., London, Eng.

Professor Rubert Boyce, M.D., University College, Liverpool.

G. F. Deacon, M.Inst.C.E., London, Eng.

Harold B. Dixon, M.A., F.R.S., F.C.S., Owens College, Manchester.

Sir John Evans, K.C.B., D.C.L., LL.D., D.Sc., Treas. R.S., F.S.A., F.L.S., F.G.S., etc., Nash Mills, Hemel Hempstead, Eng.

Professor J. A. Ewing, M.A., B.Sc., F.R.S., F.R.S.E., M.Inst.C.E., University of Cambridge.

Professor A. R. Forsyth, M.A., D.Sc., F.R.S., University of Cambridge.

Professor C. Le Neve Foster, B.A., D.Sc., F.R.S., F.G.S., Royal College of Science, London.

Professor G. Carey Foster, F.R.S., F.C.S., University College, London.

Professor Michael Foster, M.A., M.D., LL.D., D.C.L., Sec. R.S., F.L.S., F.C.S., University of Cambridge.

Hon. Sir. C. W. Fremantle, K.C.B., London.

Henry O. Forbes, LL.D., F.Z.S., The Museums, Liverpool.

Professor George F. Fitzgerald, D.Sc., F.R.S., Trinity College, Dublin.

Professor J. Reynolds Green, B.Sc., F.R.S., F.L.S., Professor of Potany to the Pharmaceutical Society of Great Britain.

Walter H. Gaskell, M.D., LL.D., F.R.S., Cambridge.

Professor A. G. Greenhill, M.A., F.R.S., Artillery College, Woolwich, Eng.

Professor E. C. K. Gonner, M.A., University College, Liverpool.

E. Sidney Hartland, F.S.A.,

Henry Higgs, LL.B., F.S.S.

Professor W. H. Heaton, University College, Nottingham.

Professor W. A. Herdman, F.R.S., D.Sc., F.R.S.E., University College, Liverpool.

Alfred C. Haddon, M.A., F.G.S., Cambridge.

Professor W. O. Halliburton, M.D., F.R.S., King's College, London.

A. Vernon Harcourt, D.C.D., LL.D., F.R.S., Cowley Grange, Oxford.

L. F. Vernon Harcourt, M.A., M.Inst.C.E., London, Eng.

J. Scott Keltie, LL.D., Sec. R.G.S., London.

The Right Hon. the Lord Kelvin, M.A., LL.D., D.C.L., F.R.S., F.R.S.E., University of Glasgow.

Prince Kropotkin, South Acton, London.

G. W. Lamplugh, F.G.S., Geological Survey Office, London Eng.

The Right Hon. the Lord Lister, D.C.L., Pres. R.S., etc., London, Eng.

Professor Oliver J. Lodge, D.Sc., LL.D., F.G.S., University College, Liverpool.

Hugh Robert Mill, D.Sc., F.R.S.E., London, Eng.

Professor Henry A. Miers, F.R.S., F.G.S., Magdalen College, Oxford.

Professor John Milne, F.R.S., F.G.S., Isle of Wight.

Robert Munro, M.A., M.D., Edinburgh.

L. C. Miall, F.R.S., F.L.S., F.G.S., Yorkshire College, Leeds.

Professor Raphael Meldola, F.R.S., F.R.A.S., Finsbury Technical College, London.

Professor Meslans, University of Nancy, France.

Dr. Donald Macalister, M.A., M.D., Cambridge.

John L. Myres, M.A., F.S.A., Oxford.

Professor Edward B. Poulton, F.R.S., F.L.S., University of Oxford.

W. H. Preece, C.B., F.R.S., M.Inst.C.E., Wimbledon Common, Surrey.

Professor W. C. Roberts-Austen, C.B., Royal Mint London.

E. G. Ravenstein, F.R.G.S., F.S.S., London.

Wm. Ramsay, Ph.D., F.R.S., F.C.S., University College, London.

Arthur W. Rucker, M.A., D.Sc., F.R.S., Professor of Physics in the Royal College of Science, London.

Robert Saundby, M.D., F.R.S.P., Birmingham.

A. C. Seward, M.A., F.G.S., Cambridge, Eng.

Professor C. S. Sherrington, M.D., F.R.S., University College, Liverpool.

Sir William Turner, M.B., LL.D., D.C.L., F.R.S., University of Edinburgh.

Professor W. H. Thompson, M.D., Queen's College, Belfast.

Professor William Cawthorne Unwin, F.R.S., M.Inst.C.E., City and Guilds of London Inst.

Professor F. E. Weiss, B.Sc., F.L.S., Owens College, Manchester.

Professor H. Marshall Ward, D.Sc., F.R.S., F.L.S., Cambridge, University.

Professor W. G. Adams, M.A., F.R.S., F.G.S., King's College, London.

Professor Henrici, Ph.D., F.R.S., City and Guilds of London Institute.

Professor Major P. A. McMahon, R.A., F.R.S., Artillery College, Woolwich.

H. W. Seton-Karr, Esq., Wimbledon, Surrey.

Professor John Perry, D.Sc., F.R.S., London, Eng.

Walter Garstang, M.A., F.Z.S., Marine Biological Laboratory, Plymouth.

The Rt. Hon. the Earl of Berkeley, Abingdon.

Professor E. M. Crookshank, King's College, London.

G. Griffith, M.A. (Asst.Gen.Sec.), Harrow.

Professor H. McLeod, F.R.S., F.C.S., Royal Indian Civil Engineering College.

Professor C. Lloyd Morgan, F.G.S., Principal, University College, Bristol.

Professor S. P. Thompson, B.A., F.R.S., D.Sc., F.R.A.S., City and Guilds of London Technical College.

Dr. A. W. Waller, F.R.S., London, Eng.

W. T. Blanford, LL.D., F.R.S., F.G.S., London, Eng.

F. C. Selous, Esq., Wargrove, Bucks.

Sir Malcolm Fraser, General Agent for Western Australia.

Dr. D. Noel Paton, Edinburgh.

John A. Campbell, M.D., F.R.S., Carlisle, Eng.

Sir George S. Robertson, K.C.S.I., London, Eng.

Professor Anderson Stuart, University of Sydney, New South Wales.

Major-General Webber, C.B., R.E., M.Inst. C.E.

The following men of science from the Continent are to be present:

Professor Dr. Anton Dohrn, Zoological Station, Naples.

Professor Yves Delage, University of Paris.

Gustave Gilson, University of Louvain, Belgium.

A. Gobert, Brussels.

Professor Dr. Albert Ladenburg, Breslau.

Professor Meslans, University of Nancy, France.

Professor P. Magnus, University of Berlin.

Dr. Ph. Pauli, Frankfurt-am-Main.

Dr. van Rijkevorsel, Netherlands.

Professor C. Runge, Hannover.

Professor Charles Richet, Paris.

Professor Bohoslav Brauner, University of Prag.

Professor Braun, University of Strassburg.

Professor Fittica, University of Marburg, Germany.

Professor K. Hürthle, University of Breslau.

Professor Penck, University of Vienna.

A. B. MACALLUM.

#### DE VOLSON WOOD.

PROFESSOR DE VOLSON WOOD, whose death was recently noticed in this JOURNAL, was a man of unusual attainments and was for nearly half a century identified with the promotion of that systematic technological education which has come to play so important a rôle in the civilization of the present day. He was born in 1832, and passed the years of his youth on the farm of his father near Smyrna, N. Y. He early displayed the capacities of a successful student and teacher of mathematics. The neighbors used to say that "the stones on Mr. Wood's farm are covered with figures which his son De Volson had used in the solution of problems;" and he began teaching school at the age of 17. After some preliminary studies in a private academy and at Cazenovia Seminary, he went to Albany State Normal School in 1852 and was graduated from that Institution at the end of the following year. During 1853-4 he was principal of the public school of Nopanocho, N. Y.; and during 1854-5 he served the Albany Normal School as assistant professor of mathematics. He then