

the Right Hon. H. B. Lees-Smith, will open the proceedings at the inaugural meeting on Monday, June 29; the Director of the Science Museum, Sir Henry Lyons, has generously invited the Congress to make the Science Museum its headquarters throughout the week; and other Government departments, such as the Royal Botanic Gardens, Kew, the Royal Observatory, Greenwich, and the Natural History Museum, have offered hospitality to members of the Congress.

Three vexed problems in scientific method will occupy the attention of members at the morning sessions on Tuesday, June 30, Thursday, July 2, and Friday, July 3. The first discussion will have as its general theme, "The Sciences as an Integral Part of General Historical Study". Prof. Gino Loria, of Genoa, will take the chair at this meeting. Mr. G. N. Clark, of Oxford, late editor of the *English Historical Review*, will open the discussion. Among those who will take part are Profs. A. V. Hill and A. E. Heath and Dr. Dampier-Whetham. On the same morning a discussion will be held on the teaching of the history of science. Prof. Welch, of Johns Hopkins University, will take the chair, and contributions have been promised from Profs. Loria, Wolf, and Aldo Mieli, of Paris.

The discussion on July 2 will be on the "Historical and Contemporary Inter-relationship of the Physical and Biological Sciences". Prof. William Ritter, of California, will take the chair, and opening papers have been promised by Prof. J. S. Haldane, of Oxford, and Prof. W. H. Welch, of Johns Hopkins. Prof. Baas-Becking, of Leyden, Dr. Joseph Needham, and Prof. Lancelot Hogben will be among the speakers. The final discussion (July 3) will be upon the "Interdependence of Pure and Applied Science". Sir Henry Lyons will occupy the chair, and contributions are promised from Sir Napier Shaw, Profs. F. G. Donnan and C. H. Desch, Mr. R. V. Vernon, of the Colonial Office, and others.

The United States will be well represented by delegates from the following institutions, among others: Columbia University; Brown University, Providence; Yale University; Rochester University; Bryn Mawr College; Colorado University; Clark

University, Worcester; Smith College, Northampton; Georgetown University; Boston University; Dartmouth College, Hanover; Michigan University; University of California; Bates College, Lewiston; Pomona College, Claremont; Duke University, Durham; University of Cincinnati; State University of New Jersey; New York University; Massachusetts Institute of Technology; Goucher College, Baltimore; Utah State Agricultural College; University of Minnesota; Haverford College; Ohio State University; Mount Holyoke College; The Harvard Railway and Locomotive Historical Society.

Of other universities outside the British Isles, representatives have been appointed from Alberta, the Muslim University of Aligarh, Allahabad, Basel, Berlin, Bombay, the Université libre of Brussels, Calcutta, Cape Town, Dacca, Guatemala, Hamburg, Hong Kong, Leyden, Lucknow, Università Cattolica of Milan, Montevideo, Madras, New Zealand, Nova Scotia, Oslo, Punjab, Rangoon, Stellenbosch, Toronto, Tasmania, and a number of others. Among other institutions that will be represented are the Gesellschaft für die Geschichte der Naturwissenschaften of Berlin, the Institut für Geschichte der Medizin und Naturwissenschaften of Leipzig, and the Kulturwissenschaftliche Bibliothek Warburg of Hamburg. The Academy of Material Culture of Leningrad expects to send three representatives.

A full programme has been arranged for the social entertainment of members and guests. Receptions are to be given by the Royal Society, the Royal Society of Medicine, the Royal Institution, and the Institute of Historical Research. Special excursions are to be made to the Universities of Oxford and Cambridge, which have offered hospitality to members of the Congress. The Provost of University College, London, will entertain members at an Independence Day luncheon on July 4. Special visits will be made to the Royal Botanic Gardens, Kew; the Royal Observatory, Greenwich; Barbers' Hall; and the Royal College of Physicians.

A Ladies Committee, under the chairmanship of Mrs. T. F. Tout, is arranging a programme of visits for ladies at the Congress who will not be attending the morning sessions.

Water Power Developments in the United States.

RETURNS which have recently been issued by the Geological Survey of the United States Department of the Interior (*Report* No. 50,669) afford some interesting particulars of recent developments in the utilisation of the water power resources of the country. Up to Jan. 1, 1931, the total capacity of water-wheels installed in water power plants of 100 horse power or more was nearly fifteen million (14,884,667) horse power, representing an increase of more than a million (1,076,889) horse power, or 7.2 per cent, during the year 1930. In an article in *NATURE* for April 18, the corresponding figures for Canada were shown to be 6,125,000 horse power and 397,850 horse power. An estimate based on present practice in the installation of plant for the utilisation of water power indicates that about nineteen per cent of the available resources in the United States have been exploited, as compared with about fourteen per cent in Canada.

This estimate, however, as also that in the case of Canada, though taking into account the results of the latest surveys and investigations, cannot be regarded as final. In a number of the States, more particularly those in the south and centre, additional information is required before a definitely reliable figure can be

arrived at. A moiety of the available power of the Niagara River and of the international section of the St. Lawrence River is included, though it is pointed out that an international agreement will be necessary in order to permit of the full development of these supplies.

Washington comes first among the individual States in extent of potential supplies, and is followed fairly closely by California, Oregon, and New York. A large proportion of the potential resources of the last-named State is available continuously, as distinguished from the bulk of the supplies elsewhere, which are of an intermittent character. This is due to the equalisation of the flow of the Niagara and St. Lawrence Rivers. The same remark applies to the States of Arizona and Nevada, where the resources are mainly on the Colorado River, the flow of which can be controlled.

The 14,884,667 horse power realised to date in the whole of the Union is the product of 3344 individual installations, of which nearly one half (1588), with a capacity of 13,108,830 horse power, are public utility and municipal undertakings, the remainder being devoted to manufacturing and miscellaneous purposes.