

progress and advancement made in physics, Dr. Johnson referred to the semi-jubilee celebration of the Royal Society. A public and popular evening lecture, one of the features of the society meetings, was delivered on the following evening, by Professor C. C. James, of Toronto, on the subject, 'The Downfall of the Huron Nation.' The lecture was illustrated throughout with numerous views projected on the screen.

Some interesting functions were held—notably a dinner at the Russell House, Ottawa, and a reception and garden party at the observatory, where the public and the society had an excellent opportunity of visiting the beautiful building recently erected by the Canadian government, in charge of the Dominion astronomer, Dr. W. F. King.

H. M. AMI.

OTTAWA, May 31, 1906.

*THE INTERNATIONAL METEOROLOGICAL
CONFERENCE AT INNSBRUCK.*

ALTHOUGH several months have elapsed since this meeting, the fact that no account of it has appeared in America prompts the writer, who was the English-speaking secretary, to give a brief statement of its nature and proceedings.

The directors of the various meteorological services and observatories of the world, to the number of fifty, met last September at Innsbruck, Austria, for the purpose of discussing questions of common interest, but without authority to pledge their respective governments to any action.

The chief of the United States Weather Bureau and Professor Bigelow were unable to attend, and, in their absence, Father Algué, of Manila, and the undersigned represented the United States. Similar conferences had been held at Munich in 1891 and at Paris in 1896, but the meeting there during the exposition of

1900 was open to all meteorologists. These reunions are arranged by the International Meteorological Committee, a permanent organization, composed of seventeen persons, who are generally the heads of meteorological services in their respective countries. At the present time the president of the committee is M. Mascart, director of the Central Meteorological Bureau of France, and the secretary is Professor Hildebrandsson, director of the meteorological observatory at Upsala. The members are chosen at meetings of the directors, and although vacancies or resignations may be filled by the committee itself, the fact that the committee had been in office during nine years made it advisable to convoke this meeting of directors in order to elect a new committee. Since 1896 the permanent committee has met three times and has received the reports of four subcommittees, appointed mostly from outside its own body to further special investigations.

The conference at Innsbruck was organized by choosing Professor Hann, of Vienna, its honorary president, and Professor Pernter, also of Vienna, its president, in place of M. Mascart, who was prevented from coming to Innsbruck. Professor Hildebrandsson, of Upsala, and General Rykatchef, of St. Petersburg, were elected vice-presidents. In his opening address Professor Hann reviewed the great progress which meteorology had made since the first conference at Leipzig in 1872, chiefly through the exploration of the upper air, which, by the erection of mountain observatories, and especially through the use of kites and balloons during the last decade, has led to new and unexpected results. At the present time meteorology is facing such important problems as the connection between weather periods of long duration and solar conditions, a considera-

tion which is suggested by the decrease of the Antarctic ice and by the retreat of the glaciers in various parts of the world.

About forty questions had been submitted to the conference and most of them were considered by special committees formed of persons interested in the following subjects: first, international comparisons of normal barometers; second, a new edition of the standard cloud-atlas; third, reduction of the barometer readings and weather telegraphy; fourth, international cooperation in the study of squalls. The reports of these committees were generally accepted by the conference. Among the subjects considered directly by the conference were observations of solar and terrestrial radiation, which were recommended to be made with Angström's compensation actinometer; the causes of heavy rainfall over large areas and historical investigations relating to extraordinary meteorological phenomena; the designation of the shift of wind in cyclonic storms and the study of small dust-whirls, especially in the southern hemisphere; also the importance of homogeneous observations at certain secular stations in each country. The following matters were referred to the international committee, *viz.*, the classification of meteorological stations and the definitions of the different kinds of frost-formation; the establishment of rules governing the international and subcommittees and the convening of meetings, which rules are to be presented to the next conference for ratification. It was voted to codify all the resolutions that had been adopted by the conferences and to publish them in German, French, English and Spanish. Besides the discussions and resolutions, several scientific communications that required no action were presented. Chief among them were descriptions of the organization of the meteorological services in

Brazil and China, by Mr. Silvado and Father Froc, respectively, and of the new aeronautical institute near Moscow by General Rykatchef; preliminary results of the exploration of the high atmosphere over the tropical Atlantic, obtained by the expedition of the Prince of Monaco and Professor Hergesell and by that of M. Teisserenc de Bort and Mr. Rotch.

The conference elected the following members of the International Committee: Messrs. Chaves (Portugal), Davis (Argentina), Eliot (India), Hellmann (Germany), Hepites (Roumania), Hildebrandsson (Sweden), Lancaster (Belgium), Mascart (France), Mohn (Norway), Moore (United States), Nakamura (Japan), Palazzo (Italy), Paulsen (Denmark), Pernter (Austria), Russell (Australia), Rykatchef (Russia) and Shaw (Great Britain). Three of the subcommittees had their powers renewed by the conference, namely: the commission for terrestrial magnetism and atmospheric electricity, with General Rykatchef, of St. Petersburg, as president and Dr. A. Schmidt, of Potsdam, as secretary, whose special duty is to coordinate the magnetic and electrical observations over the globe; the commission for scientific aeronautics, under the presidency of Professor Hergesell, of Strassburg, which undertakes the study of the free air by simultaneous ascensions of balloons and kites; and the commission for solar radiation, which, under the leadership of Professor Angström, of Upsala, promotes measurements of solar radiation and centralizes the results. In 1904 the solar commission was formed, with Sir Norman Lockyer, of London, as president, and Sir John Eliot as secretary, for the purpose of investigating the relations between meteorology and solar physics. The same officers were reelected at Innsbruck and the membership was enlarged. The establishment of ob-

servatories in the north of Siberia and in America was recommended, as well as stations on selected islands, and a form for publishing all the data was prescribed.

As the Innsbruck meeting was devoted to serious work, formal social functions were wisely omitted. The president, however, entertained his colleagues in the characteristic German manner on one evening, and between the sessions excursions were arranged to some neighboring portions of the Tyrol. Unusual sociability prevailed from the fact that almost all the members of the conference lodged in the same hotel where meals were taken together, and in this way old acquaintances were strengthened and new ones formed, the personal relations being, after all, the chief advantage to be derived from these reunions.

A. LAWRENCE ROTCH.

BLUE HILL METEOROLOGICAL OBSERVATORY,
June 8, 1906.

SCIENTIFIC BOOKS.

THE BELGIAN ANTARCTIC EXPEDITION.

Résultats du voyage du S. Y. 'Belgica' en 1897-1898-1899, sous le commandement de A. DE GERLACHE DE GOMERY. Rapports scientifiques. Botanique: Les Phanérogames des Terres Magellaniques. Par E. DE WILDMAN. Anvers, 1905. 4°, 222 pp., xxiii pls. *Travaux hydrographiques et instructions nautiques.* Par G. LECOINTE. 1er fascic. Anvers, 1905. 4°, 110 pp., xxix pls. and atlas of charts.

During the short stay of the expedition in the Magellanic region M. E. Racovitska obtained rather exhaustive collections of the flowering plants of this region. The flora is not very numerous in species, but is of interest from the point of view of geographical distribution, since it establishes for some species a singularly wide distribution. A glance at the charts of the Magellanic archipelago will show the conditions leading to an intimate connection between the continental South American flora and that of the archipelago.

The posthumously published essay of the late Nicholas Alboff (1897) contained some important discussions of the relations of the Fuegian flora. In this connection Alboff observed that if it were no longer possible to base one's ideas of Antarctic plant distribution on Hooker's memorable 'Flora Antarctica' alone, without falling into error, it is also true that the considerable additions to our knowledge of that flora which have since been made (including his own) are still insufficient for the purpose. Investigations since Alboff's paper have all tended, as he expected, to connect the flora of the archipelago more and more closely with that of the continent. M. de Wildman concludes from his study of the Racovitska collections that it is still too early to attempt to discuss the general question of the geographical subdivisions into which it is probable the Fuegian flora will ultimately be subdivided. He gives tables, however, at the end of his memoir by which the reader may rapidly obtain an idea of what is known of the distribution of the species enumerated.

The memoir divides itself into a systematic enumeration of the phanerogams collected by the *Belgica*; a similar enumeration of the known phanerogamic flora of the region, and the statistical tables. The work is published in the elegant style heretofore noted in the reports of this expedition, and the plates are particularly fine and detailed.

The sheets of the hydrography by Commander Lecoite were printed as early as 1903, but owing to the pressure of duties devolving upon him as director of the Royal Observatory, the proposed plan has not been fully worked out. It was, therefore, thought best to issue the sheets as far as printed without waiting any longer. They comprise the hydrography of the voyage from Europe to Terra del Fuego and thence to Bransfield Strait; an account of the operations in Gerlache Strait; and lastly the subsequent proceedings.

One does not expect to find much of interest in the computations of chronometer rates, or observations for position, however necessary;