

possible, identical instruments should be used during the simultaneous ascensions of pilot balloons.

4. The prompt publication of the unreduced observations, especially those which are made in simultaneous ascensions, is of capital importance.

5. It is desirable that observations in captive balloons, which are not manned, should be systematically made.

6. On account of the satisfactory results which have been attained at Blue Hill with kites carrying registering instruments up to 2,000 meters, it is desirable that similar investigations be undertaken elsewhere.

A provisional aeronautical committee was nominated afterwards by the International Committee to further these resolutions, consisting of MM. Hergesell, Erk, and Assmann, of Germany; Cailletet, de Fonvielle, Hermite, and Jaubert, of France; Pormatsoff, of Russia, and Rotch, of the United States.

On the demand of M. Snellen—

The Conference requests the International Committee to convoke a reunion of the directors of those institutions that are interested in maritime meteorology, in order to establish uniformity in methods of observation and publication, and it desires that a report on this question be presented to the next Conference.

M. Mohn announced that Dr. Nansen had collected between latitudes 81° and 86° three entire years of meteorological observations made every four hours, and comprising also the continuous registration of pressure and temperature, as well as magnetic and hydrological observations, etc. M. Mohn promised to do his best to reduce and to publish all these observations according to the methods adopted by the meteorological congresses and conferences.

It was decided that a new International Committee be constituted in the same manner and that it have the same functions as the former one. The former committee was reelected with the three vacancies filled as follows: Mr. Ellery, of Melbourne, was replaced by Mr. Russell, of Sydney; Mr. Harrington by Mr. Moore, the new director of the Weather Bureau; and M. Wild by M. Rykatcheff, his successor as director of the Russian Meteorological Service. The seventeen members of the committee are, therefore: MM. von Bezold, Germany; Billwiller, Switzerland; de Brito-Capello, Portugal; Davis, Argentine Republic; Eliot, India; Hann, Austria; Hepites, Roumania; Hildebrandsson, Sweden; Mascart, France; Mohn, Norway; Moore, United States; Paulsen, Denmark; Russell, New South Wales, Australia; Rykatcheff, Russia; Scott, Great Britain; Snellen, Netherlands; Tacchini, Italy. Authority was given to the committee to fill vacancies in its body and to replace its officers at a meeting called for the purpose. It was afterwards announced that M. Mascart had been chosen president, and that Mr. Scott would retain the office of secretary to the committee.

The French edition of the proceedings of the present Conference, with appendices, containing reports, etc., will be printed and distributed as soon as possible. Mr. Scott will bring out the English edition, and M. von Bezold the German edition. It was decided that the interval of five years adopted at Munich between it and the present Conference should determine the date of the next Conference which, accordingly, is to be held in 1901, at a place to be appointed by the Permanent International Committee.

#### THE INTERNATIONAL, HYDROLOGICAL, CLIMATOLOGICAL, AND GEOLOGICAL CONGRESS AT CLERMONT-FERRAND.

By A. LAWRENCE ROTCH (dated Nov. 30, 1896).

The fourth session of the Congress (in accordance with the decision of the Congress held at Rome in 1894) was held at Clermont-Ferrand, Department of the Puy de Dome, France, between September 28 and October 2, 1896. It was attended by about 200 persons, of whom much the greater number were French physicians. Twelve countries were represented, most of them by several delegates. Professor Proust, general

inspector of sanitary services, who represented the Minister of Public Instruction, was the honorary president. The principal officers elected were: Dr. de Raue and Dr. Fredet, president and general secretary, respectively, of the committee of organization, who were confirmed in these offices for the meeting. The honorary vice president was Dr. Berthenson, of Russia, and the honorary vice presidents were: Professor Ludwig, of Austria, Professor Kuborn, of Belgium, and Mr. Rotch, of the United States. The presidents of the three sections into which the Congress was divided were French, and were as follows: Hydrology, Dr. Cazaux; climatology, Professor Hurion; geology, M. Levy. The latter section was first organized at this meeting.

Reports upon certain questions proposed by the organization committee served as a basis for subsequent discussions. The most important of these reports were: The controlling action and specialization of different mineral waters according to their therapeutic action, by Dr. Max. Durand-Fardel; carbonic acid and alkaline bicarbonates in mineral waters and their therapeutic action, by Dr. A. Labat; investigation of methods to determine the degree of purity and the color of the sky and their influence on hygiene, by Prof. A. Hurion; the role of meteorological observations in the study of climate, by M. A. Angot; conditions which affect the circulation of dusts in the atmosphere and the influence of these dusts on health, by M. J. R. Plumandon; the régime of winds in certain regions and their influence on the sanitary conditions, by Dr. de Valcourt; what is to be understood by high climates and what conditions should be fulfilled, with a statement of the chief therapeutic indications, by Dr. E. de la Harpe; influence of earthquakes on the régime of mineral waters, by Prof. P. Girod; the relation of deep artesian wells to certain mineral springs, by Prof. L. de Launay.

The other reports, and the majority of the papers presented, treated of the curative effect of special waters and climates, with the relative advantages of different stations, and of the development and exploitation of mineral sources. Professor Kuborn described the work in Belgium of the medical climatological and geological service of the Society of Public Medicine and a French climatological association was proposed by Dr. Piche, similar to that existing in southwest France, which has its central station at the Carlier Observatory at Orthez.

There were several conferences of a more general interest; Dr. Labat spoke on the history of hydrology and Professor Velaïne on the geology of the central plateau. The observatory on the Puy de Dome (4,800 feet) was the first of the French mountain stations for meteorology and was completed about 1873; the director, Professor Hurion, compared its climate with that of Clermont. During the Congress there was an exhibition of waters from neighboring thermal stations with models and drawings of the surroundings. The thermal establishment of Royat was visited, and after the Congress closed excursions were made to Vichy, Neris, La Bourboule, Mont Dore, and Saint Nectaire.

At the closing meeting it was voted to hold the next session at Brussels in 1898. The proceedings of the present Congress will be published by a commission appointed by the committee of organization and will be distributed to the members.

#### HORIZONTAL ATMOSPHERIC ROLLS.

By FRANK W. PROCTOR (dated November 6, 1896).

On two occasions during the winter of 1895-96, the writer had the pleasure of observing at Waynesville, Heywood Co., N. C. (N. 35° 30', W. 83° 0'), numerous horizontal atmospheric rolls which were made visible by clouds floating in the rolls. The circumstances were as follows:

About 7 o'clock a. m., the observer was looking to the south-