

Brazil, Peru, Chili, Persia, Russia, Asia Minor (Heraclée) and China.

Professor Zeiller was one of the first to demonstrate the precision with which fossil plants can be used in stratigraphic geology and in the numerous large memoirs on the Carboniferous and Permian floras of the coal basins of Grand-Combe (1884), Valenciennes (1888), Commentry (1888-1891), Epinac (1890), Brive (1892), Blanzey and Creusot (1906), as well as in his work on the fossil plants, which forms part 2 of Vol. 4 of "*Explication de la carte géologique de la France*" (1879), he displayed a philosophic interpretation that had never been equalled. Since 1878 the mining engineers of France have had the benefit of his annual course in paleobotany at the *École nationale des Mines*, the excellence of which is attested by his "*Éléments de Paleobotanique*" published in 1900, which remains not only the best but the only well balanced text-book on this subject that has ever been written.

Professor Zeiller was not only a voluminous contributor to his chosen science, but a life-long teacher and a conscientious and efficient administrator, having been for more than twenty years the secretary of the National Board of Mines, Inspector General since 1884 and Vice-president since 1902. He had charge of the *Annales des Mines* from 1874 to 1910. For a period of forty-five years he was an honored member of the *Société géologique de France* and its president in 1893. Honors came to him freely both at home and abroad. He was a commander of the Legion of Honor and a member of the French Academy since 1901. Cambridge conferred its Sc.D. on him at the time of the Darwin Centennial.

Professor Zeiller was a sort of father-confessor to the younger paleobotanists of all races, and they found in him a wise and kindly critic, always painstaking and helpful, as well as a generous and inspiring friend. His rare ability was combined with an equally rare modesty that endeared him to a wide circle on this side of the Atlantic, and wherever fossil plants are studied his name will

ever be honored. This is neither the time nor the place for a critical analysis of his contributions to science—our grief is too recent. That he upheld the high traditions of French paleontology there can be no doubt. His epitaph might well read *Nil nisi bonum*.

E. W. B.

#### RECOMMENDATIONS OF THE PAN-AMERICAN SCIENTIFIC CONGRESS

THE Second Pan-American Scientific Congress at its final session before adjourning to meet again at Lima in the year 1921, which will be the Peruvian centenary, adopted by unanimous vote thirty-six recommendations. Those relating to the sciences are as follows:

I. That it is highly desirable that the various American republics arrange for the appointment of delegates for joint action in the matter of archeological exploration, in order to formulate generally acceptable and substantially uniform laws relating to the survey, exploration, and study of archeological remains to be found in the several republics, and that laws shall be enacted which will effectively safeguard these remains from wanton destruction or exploitation and which will serve to aid and stimulate properly organized and accredited research in archeology.

II. That the government of the United States be requested to bring to the attention of the governments of the other republics participating in the congress and, through their respective governments, to the institutions and the public thereof, the importance of promoting research in the field of archeology, organized surveys for the study of primitive tribes, and the building of national educational museums for the preservation of the data and materials collected.

III. The American republics undertake as soon as possible: (a) Accurate, geodetic measurements which may serve to determine limits, national and international, and to contribute to the discovery of the true shape of our planet. (b) Magnetic measurements of their respective surfaces, and the establishment of several permanent magnetic observatories in which it may be possible to carry on during long periods of time observations concerning the secular variation of the magnetic characters of the earth. (c) To extend their gravimetric measures (obtained by means of the pendulum)

to those regions where these measurements may have not been taken, in order to obtain more information to determine the true shape of the surface and the distribution of the terrestrial mass.

IV. That the nations of the American continent establish, by means of their offices of geodesy or by committees appointed for that purpose, an international triangulation. That the governments of American nations reach an agreement for the purpose of creating an office or congress of cartography and geography.

V. That proper steps and measures be taken to bring about in the American republics participating in the congress a general use of the metric system of weights and measures, in the press, in educational and scientific work, in the industries, in commerce, in transportation, and in all the activities of the different governments.

VI. Confirms the resolution recommended to the American republics by the First Pan-American Scientific Congress regarding the installation of meteorological organizations to serve as a basis for the establishment of the Pan-American meteorological service, and expresses the desire that the republics not yet possessing organized meteorological service establish the same as soon as may be practicable.

VII. That there be appointed an international Pan-American committee to study and report upon the question of establishing such a uniform gauge as will best serve the countries' interest, their international communication, and the communication between all the countries of America.

VIII. The appointment of an American committee on radio communication to assist in development of the science and art of radio communication, to the end that it may serve to convey intelligence over long distances and between ships at sea more quickly and accurately, and to bring into closer contact all of the American republics.

IX. That through the governmental agencies of the American republics a cooperative study of forest conditions and forest utilization be undertaken and that the data thereon be published.

X. That each of the American nations appoint a commission to investigate and study in their respective countries the existing laws and regulations affecting: (a) The administrative practise of regulating the use of water; (b) The adjudicating of rights pertaining to the use of surface and underground water for irrigation purposes; (c) The distribution, application, and use of water upon arid

and irrigable land; (d) Methods of conservation of surface and underground waters for irrigation or industrial purposes; (e) And to suggest laws or regulations in the interest of general industry, navigation and commerce.

XI. That the question of the reclamation of arid lands is one that should receive the immediate and careful consideration of the several governments of the American states, so that there may be increased areas of productive land to meet the needs of their increased populations.

XII. (a) That each country should maintain a well-organized and competent live-stock sanitary service comprising executive officers, field inspectors and a laboratory force; (b) That each country should enforce live-stock sanitary laws and regulations, with the view of preventing the exportation, importation and spread within the country of any infectious, contagious or communicable diseases by means of animals, animal products, ships, cars, forage, etc.; (c) That each country should maintain a thorough live-stock sanitary survey to determine what communicable diseases of animals are present and the localities where they exist. This information should be furnished regularly to each of the other countries at stated periods as a routine feature; (d) That each country should refrain from exporting animals, animal products, forage and similar materials which are capable of conveying infectious, contagious or communicable animal diseases to the receiving country; (e) That each country should enforce measures to prohibit the importation of animals, animal products, forage and other materials which may convey diseases from countries where dangerous communicable diseases such as rinderpest, foot-and-mouth diseases, and contagious pleuropneumonia exist, and which have no competent live-stock sanitary service. Animals, animal products, forage and similar materials from countries maintaining a competent live-stock sanitary service may be admitted under proper restrictions, regulations and inspections, imposed by the importing country; (f) That each country, through its live-stock sanitary service, should endeavor to establish a complete exchange of information as to the methods followed which have proved most successful in combating animal diseases; (g) That members of the live-stock sanitary service of each of the American countries should meet at regular intervals to consult and inform each other regarding the measures taken for furthering cooperation in protecting the live-stock industry of the American countries.

XIII. That an American plant-protection conference be convened, the delegates thereof to be one or more technical experts from each of the several American countries, and that, as soon as practicable, a meeting of this conference be held to discuss suitable legislation, the means of establishing competent scientific bureaus, and to recommend such cooperative research work and control of plant introduction as may be advisable, and to use all reasonable efforts to secure appropriate action by the several countries.

XIV. Recommends the distribution of information regarding the agricultural production of the different countries and of the publications relating thereto.

XXVIII. (1) That a compilation according to a definite plan be made of the mining laws of the American countries, not only in their original languages, but also in English or Spanish or Portuguese translations, as the case may be, with a view to the reciprocal improvement of the laws of each individual country. (2) That the several American governments appoint a committee to consider the uniformity of mining statistics, and to make recommendations to their respective governments for the systematizing, simplifying and standardizing of such statistics.

XXIX. That all American countries inaugurate a well-considered plan of malaria eradication and control based upon the recognition of the principles that the disease is preventable to a much larger degree than has thus far been achieved, and that the education of the public in the elementary facts of malaria is of the first order of importance to the countries concerned.

XXX. That the American republics in which yellow fever prevails, or is suspected of prevailing, are urged to enact such laws for the eradication of yellow fever as will best accomplish that result. That inasmuch as yellow fever exists in some of the European colonies in America, it is desirable to invite them to adopt measures for its elimination.

XXXIV. That the American governments, deriving important revenues from the consumption of alcohol, should organize their systems of taxation so that the economic interests be subordinated to the higher interests of a social and moral order, which tend to the suppression of alcoholism.

XXXV. That it is very advisable that the different monetary systems of the American republics be studied from a scientific point of view and in connection with the experience of the various American countries, in such matters.

XXXVI. That the American republics make

uniform, as far as possible, the basis and adopt a common time for the taking of census, and adopt uniform principles in commercial and demographic statistics.

In conclusion, the congress specially recommends, for execution by the present Pan-American Union or by means of any other institution in actual existence or to be established, the following propositions:

The establishment of an intellectual Pan-American union to unite the various associations of different character—technical, medical, legal, etc.—divided into sections according to the groups that may be deemed convenient, such as a university section, a library section, etc.

The details thereof are contained in the records of the congress in the form of four propositions dealing with the proposed union. The organization that may take charge of its establishment will lay broad and deep the true foundations of intellectual Pan-Americanism.

#### SCIENTIFIC NOTES AND NEWS

THE permanent secretary of the American Association for the Advancement of Science requests us to state that in the report of the Columbus meeting reference should have been made in the account of the opening exercises to the admirable response to the address of welcome by the president of the association, Dr. W. W. Campbell, director of the Lick Observatory.

THE Bruce gold medal of the Astronomical Society of the Pacific has been awarded to Dr. George Ellery Hale, director of the Mount Wilson Solar Observatory.

At the recent meeting of the American Society for Experimental Pathology in Boston, Dr. Simon Flexner was elected president, Dr. Gideon Wells vice-president, and Dr. Peyton Rous secretary for the year 1916. The Society for Experimental Pathology will hold its next meeting in New York next December, together with the other constituent organizations of the Federation of American Societies for Experimental Biology. Dr. Flexner is the chairman of the executive committee of this organization for 1916 and Dr. Rous is general secretary.

OFFICERS of the Philosophical Society of Washington elected for 1916 are: *President*,