returned from Pfeffer's laboratories in Leipzig. He received the B.S. degree in 1898, taught five different sciences in the high school of Freeport, Ill., for one year, and then went to Chicago, where he became a graduate student and assistant in plant physiology under Dr. Barnes. He was in charge of Barnes's laboratory course at Chicago, from 1899 to 1905, and gave several lecture courses. He received the Ph.D. degree in December, 1901, being the first doctor in plant physiology with Dr. Barnes. His dissertation, published as a book in 1903, is on "The Rôle of Diffusion and Osmotic Pressure in Plants." After leaving Chicago in 1905 he was in charge of soil fertility investigations in the U. S. Bureau of Soils at Washington for a year and prepared, with several assistants, the first analytical studies of toxicity in unproductive soils in the humid regions. In 1906 he became a staff member of the Desert Laboratory of the Carnegie Institution of Washington, at Tucson. He spent the year 1908 in research with Professor von Goebel at Munich and spent some time in Pfeffer's laboratory at Leipzig. He was called to the Johns Hopkins University in 1909, to be professor of plant physiology and became also director of the laboratory of plant physiology there in 1913. Dr. Livingston has exerted a large influence upon the development of ecological physiology through his researches and those of his students and associates, upon transpiration, soil moisture, soil oxygen, the mineral nutrient relations between plants and their environment and the influence of climatic conditions on plants. He has originated several devices which have been very useful in measuring quantitatively the dynamic influence of edaphic and climatic conditions. Chief among these are improved types of atmometers, auto-irrigators for the control of soil moisture conditions, and porous porcelain "soil points" for measuring the water-supplying power of soils in a quantitative manner.

In addition to these activities, Dr. Livingston has been engaged in several editorial enterprises: *Physiological Researches, Botanical Abstracts, Plant Physiology* and *Palladin's Plant Physiology,* which has reached three editions in the English translation. He was the first editor-in-chief of *Botanical Abstracts* and contributed much toward getting that journal started. He has been permanent secretary of the American Association for the Advancement of Science since 1920.

Appreciating his long and varied services, the undersigned committee is happy to announce the award to Dr. Livingston, *honoris causa,* of the first Charles Reid Barnes Life Membership of the American Society of Plant Physiologists. This award is the first in the chain of a living memorial to Dr. Barnes, whose memory is revered by all who knew him and should be perpetuated as long as plant physiology remains in the service of mankind.

The Committee on the Award of the first Charles Reid Barnes Life Membership of the American Society of Plant Physiologists:

R. P. HIBBARD
A. E. MURNEEK
F. E. LLOYD
G. W. SCARTH
C. A. SHULL, *chairman.*

SCIENTIFIC EVENTS

EXPERIMENTAL CYTOLOGY AT THE TENTH INTERNATIONAL CONGRESS OF ZOOLOGISTS AT BUDAPEST

THE ninth International Congress of Zoologists, which was held in March, 1913, at Monaco, decided to have its tenth session in 1916 at Budapest, under the chairmanship of the undersigned. War conditions made it unfortunately impossible to adhere to the date determined upon for 1916 and the session of the tenth congress had to be postponed. The present international situation, however, now permits of this congress being held next year.

I have the honor, therefore, with the approval of the permanent committee of the International Congress of Zoologists, to announce that its tenth congress will be held at Budapest from the 4th to 9th of September, 1927, inclusive, and that all zoologists and friends of zoology are most cordially invited to attend.

In addition to the sections already represented at past congresses, a section for experimental cytology will be inaugurated at this time.

The complete program of the congress will be issued during the course of the year and sent to all those interested.

DR. G. HORVÁTH,
President Tenth International Congress of Zoologists.

Hungarian National Museum,
Budapest, September 4, 1926.

A few additional remarks concerning the next to last paragraph of the above announcement are necessary:

The new section for experimental cytology came into existence in the following way: Professor G. Levi, of Turin, and Professor Rhoda Erdmann, of Berlin-Wilmersdorf, were desirous of meeting with other cytologists, from Europe and elsewhere, so that this newly-created special branch might correlate its discoveries with those of the older branches.

This new section for experimental cytology is composed of investigators who already belong to other scientific societies, but who are particularly engaged in experimental cytology. They are founding no new society, but have instead chosen this way of becoming associated with the International Congress of Zoologists as a section, in order to make possible an understanding of the aims, discoveries and methods of experimental cytology. This was made possible by the cooperation of the president of the tenth congress, Professor von Horváth, and the chairman of the Budapest local committee, Professor von Lenhossék.

Invitations to join the sessions of the section for experimental cytology follow, together with that to the Tenth International Congress of Zoologists. They are directed not only to those investigators who are engaged in tissue culture, but to all cytologists who have busied themselves over metazoan, metaphytic and protozoan cells and have studied these either by methods of vital staining, microdissection and tissue culture and have by these means come to any conclusions concerning living cells.

The tentative program for the session of the Tenth International Congress of Zoologists, at Budapest, in 1927, is as follows—the subjects of the lectures are merely outlined:

September 3, Saturday: Social evening of welcome.

September 4, Sunday: Opening session.

September 5, Monday. (Morning.) Joint session of section on experimental cytology with all the sections. Lecture by Professor R. G. Harrison, New Haven, "On the Status and Significance of Tissue Culture."

Afternoon. Special session of section on experimental cytology. Lecture on "The Behavior of Plant Cells in Vitro and in Vivo," by Professor E. Küster, Giessen. Other lectures on similar topics; discussion. Demonstrations particularly desirable.

Sessions of the Section on Experimental Cytology:

September 6, Tuesday. (Morning.) Session opened by Professor G. Levi, Turin: "The Structural Behavior of Living Tissues under Culture." Other lectures on similar topics.

Afternoon. Session opened by Dr. Alexis Carrel, New York: "Modern Techniques of Tissue Culture and Results." Other lectures on similar, or associated topics. Discussion and demonstrations.

September 7, Wednesday. (Morning.) Session opened by Professor Rhoda Erdmann, Berlin-Wilmersdorf; and Professor A. A. Krontowski, Kief: "What has Tissue Culture accomplished toward the Solution of Problems in Pathology, particularly those of Cancer and Immunization?" Other lectures on similar topics.

Afternoon. Session opened by Professor N. Chlopin, Leningrad, and Professor A. Timofejewsky, Tomsk: "The Origin of Blood, Connective Tissue and Related Cell Types." Other lectures on similar subjects, with discussions. Demonstrations desirable.

September 8, Thursday. (Morning.) Session opened by Professor von Möllendorf, Kiel: "Vital Staining and Experimental Cytology." Other lectures along similar lines.

Afternoon. Subject: "Microdissection," lecturer not yet chosen. Lectures along similar or related lines; discussion. Demonstrations.

September 9, Friday. Closing session.

September 10, Saturday. Excursion to Plattensee and inauguration of the new biological station in Tihany, on the Plattensee.

September 11, Sunday. Optional joint excursion to Debrecen and the Hortobágyer Steppe.

The lectures will be given in all four official languages of the congress.

Professor Rhoda Erdmann, Berlin-Wilmersdorf, Nassauischestr. 17, II, editor of the *Archiv für experimentelle Zellforschung,* is now receiving announcements of lectures, demonstrations and any suggestions. Other questions, such as the provision of microscopes, the possibility for projection, etc., should be directed to the secretary of the local committees, Privatdozent Dr. L. Karczag, Budapest III, Klinik für innere Medizin, VIII. Ludòvinumgasse 2. Hotel reservations, transportation and passports will be attended to by the local committee, to which direct applications should be made.

MURAL PAINTINGS OF PREHISTORIC ANIMALS AT THE FIELD MUSEUM

A SIX-YEAR program of work on a series of great mural paintings, and modeled groups of prehistoric animal and plant life, to be carried out on a larger scale and in a more complete and systematic manner than has before been attempted, has been inaugurated by the Field Museum, according to an announcement made by D. C. Davies, director of the museum.

Through the generosity of Ernest R. Graham, of Chicago, the hall of historical geology in the museum, which contains fossils showing the life of past ages, is to be enriched by a series of twenty-eight mural paintings in which the animals of the past are to be represented as they appeared in the flesh and among the strange foliage which surrounded them. In recognition of his gift, the trustees of the museum have named the hall the Ernest R. Graham Hall.

Charles R. Knight, of New York, leading artist in the delineation of prehistoric scenes, is in charge of the mural decorations. Fourteen of the twenty-eight paintings will be twenty-five by nine feet and the balance eleven by nine feet, and there will be a number of groups, which will round out the present exhibits of life of past ages.

Mr. Knight will be aided in his work by several assistants. He is now preparing designs and making