

"A Study of the Annual Recurrence of *Phytophthora infestans*," by I. E. Melhus.

"Fungous Gummosis of *Citrus* in California," by H. S. Fawcett.

C. L. SHEAR,
Secretary-Treasurer

THE PALEONTOLOGICAL SOCIETY

THE fifth annual meeting of the Paleontological Society was held at Princeton, N. J., on Wednesday, December 31, 1913, and Thursday, January 1, 1914, in affiliation with the Geological Society of America. The meeting this year included a general session in which selected papers of interest to all members of the society were read, and special sessions dealing with vertebrate and invertebrate paleontology and paleobotany. Notable features of the meeting were first, the president's address by Dr. Charles D. Walcott on the Cambrian of western North America, and second a conference on the close of the Cretaceous and opening of Eocene time. In the latter the geological and paleontological evidence was presented by Messrs. F. H. Knowlton and T. W. Stanton, and recent discoveries in regard to late Cretaceous and early Eocene life were reported especially as a result of the American Museum expeditions under Messrs. Barnum Brown and Walter Granger.

A new Ungulate of very distinctive South American type was recorded by Dr. Matthew as additional evidence of affinity between North and South America in Lower Eocene times. The line of ancestry of the Uintatheres was recorded as traced into Basal or Paleocene times. A new fauna is described between the Puerco-Torrejon and Wasatch, to be known as the Clark Fork. Still more striking was the record of Mr. J. W. Gidley, of the U. S. National Museum, of the occurrence of a true eland *Taurotragus* in the Pleistocene cave of western Maryland. This discovery confirms the statement of J. C. Merriam of the occurrence of African antelopes in Virgin Valley, northern Nevada and links North America very closely to Asia in Pliocene times. Accompanying the eland was a peculiar species of African dog.

R. S. BASSLER,
Secretary

SOCIETIES AND ACADEMIES

THE BIOLOGICAL SOCIETY OF WASHINGTON

THE 516th meeting of the society was held on November 15, 1913, Vice-president Paul Bartsch in the chair and 35 persons present.

F. V. Coville presented a communication on

"The Physiology of the Blueberry." His remarks were based on wide experience in greenhouse and outdoor culture of this plant. Three conditions are essential to its successful propagation: first, an acid soil; second, the presence of the micorrhizal fungus to enable the plant to obtain nitrogen, and third, the stimulating effect of cold on the twigs while they are dormant. The last is a condition of vital importance, associated as it is with the transformation of starch into sugar. As a result of this series of experiments, the commercial propagation of the blueberry is now possible. Very large berries have been developed, some of them from $\frac{1}{2}$ inch to $\frac{3}{4}$ inch in diameter. The various means of cultivation were explained and illustrated by means of numerous lantern slides.

W. C. Kendall, the second speaker announced on the program, was absent, and the chairman asked Dr. Leon J. Cole, of the University of Wisconsin, to address the society. He responded by giving an account of his experiments in breeding pigeons for the study of color inheritance.

Owing to lateness, the communication by Barton W. Evermann was postponed.

THE 517th meeting of the society was held on November 29, 1913, President E. W. Nelson in the chair and 63 persons present.

The meeting was devoted to a discussion of Parallel Development. A. D. Hopkins read a paper on "Parallelism in Morphological Characters and Physiological Characteristics in Scolytoid Beetles." He had made a special study of these beetles and his ideas of parallelism in nature were largely founded on evidence they have furnished. He defined the subject as follows:

"Parallelism in morphological characters and physiological characteristics in Scolytoid beetles relates to the occurrence of the same or similar elements of structure or the same kind of activity in two or more species, genera, subfamilies or families. Parallel species, genera and larger groups are those in which structure or habit is in many respects alike. Such species or groups may be closely allied or more or less widely separated. Universal parallelism relates to repeated or multiple origin, development and evolution of the same or similar inorganic or organic form or activity.

"This tendency towards parallel development appears to be in accordance with a fundamental principle or law of *parallelism in evolution*, under which the origin and evolution of the same form or activity, under the same or similar physical in-

fluences, has been repeated many times; or, in other words, that under similar environments, needs, and requirements in nature, independent development and evolution from a common base may produce repeatedly the same or similar morphological and physiological results."

Numerous examples were given and illustrated on the board, of characters of structures and characteristics of habit which were paralleled over and over again in connected and disconnected genera, subfamilies and families. He also illustrated characters and characteristics which were paralleled in all of the species of a single genus and in connected genera, groups, subfamilies and families, and said further:

"Thus we see that parallel modification in morphological and physiological elements is an important factor to be considered in taxonomy. It is evident from a comparative study of the various systems of classification that the failure of taxonomists to fully realize its importance has led to many erroneous conclusions and much confusion.

"In conclusion, it seems to me that we have two fundamental questions to be answered in regard to the origin, evolution and classification of organism:

"1. Are the taxonomic characters and characteristics of the species, genus, family, order, class and kingdom, *the result of phylogenetic descent from a single ancestral nucleus, through natural selection and the inheritance of selected characters?* or

"2. Are they *the result of phylogenetic descent from many nuclei through natural selection and natural parallelism?*

"I am inclined to the belief that an affirmative answer to the second question would be more nearly in accordance with natural law.

"Phylogenetic descent from a single source is represented by a single genealogical tree.

"Parallelism from different sources may be represented by a forest of genealogical trees, the different elements of which are as near alike as the branches, leaves, flowers and fruit of a forest of oak trees."

President Nelson exhibited a series of mammals similar in outward appearance but widely different in structure and classification, showing the parallelism of shape and color.

H. C. Oberholser discussed parallel development as illustrated in birds. He showed a large series of specimens in which resemblances in form and color were very striking.

J. W. Gidley pointed out the difference between parallel and convergent development.

Messrs. Lyon, Hay, Baker, Bartsch and Gill took further part in the discussion.

In closing, Dr. Hopkins remarked on the large number and most striking examples of parallelism in the mammals and birds which had been exhibited by Messrs. Nelson and Oberholser, stating that the discussion based on them had related to only one phase of the principle, namely, disconnected or homomorphic parallelism which was very different from related or homologous parallelism. One is parallelism in structure, color, habit, etc., which is not correlated with evidences of natural affinity, but is repeated in more or less widely separated groups and species, while the other is parallelism of structure, color, habit, etc., which is correlated with evidences of natural affinity and is repeated in the same species or in connected genera or larger groups.

We must not overlook the fact that there are many different kinds of parallel modifications in evolution, some applying to the universe in the parallel development of systems, suns and planets, others to chemical elements and compounds, others to psychological phenomena, etc. Indeed, its manifestation in all branches of human knowledge is so evident that it may be considered as representing a science.

THE 34th annual meeting and 518th regular meeting of the society was held on December 13, 1913, President E. W. Nelson in the chair and 28 persons present.

The annual reports of the officers were read.

The election of officers for the year 1914 resulted as follows:

President: Paul Bartsch.

Vice-presidents: J. N. Rose, A. D. Hopkins, W. P. Hay, Mary J. Rathbun.

Recording Secretary: D. E. Lantz.

Corresponding Secretary: W. L. McAtee.

Treasurer: Wells W. Cooke.

Members of Council: William Palmer, Hugh M. Smith, Vernon Bailey, Marcus W. Lyon, Jr., N. Hollister.

The president, Paul Bartsch, was selected to represent the society as vice-president in the Washington Academy of Sciences.

President Bartsch appointed the following committee on publication: N. Hollister, W. L. McAtee, Wells W. Cooke.

D. E. LANTZ,
Recording Secretary