propose for answer. Meaningless bones will be clothed with new interest when it is learned that they are millions of years old, and that the place whence they came was once the bottom of an ocean or broad lake. And he invariably desires to learn how it is known where to dig for them, how they are preserved, and a multitude of similar things. It is very evident that the author of 'Animals of the Past' has had no inconsiderable experience in answering such questions, else he could hardly have encompassed within its pages so much and so clear information about those things that the general public desires most to know concerning fossils. We will not quarrel with him for the omission of a limiting adjective in the title, nor suggest that some of its humor is a trifle far-fetched, in consideration of the fact that the book on the whole is very good. One who is acquainted with the author's work in paleontology will expect accuracy and reliability, and he will not be deceived here. He has kept his imagination in check—not always an easy thing for the paleontologist to do!—and has said what he has to say in an easy way that even the schoolboy will enjoy. The book is, moreover, scientific, and not a collection of paleontological fables; it is, I think, the best of its kind yet published. It tells how the bones of extinct animals become fossilized, are found, collected, restored and mounted, of the many problems they present and the inferences they suggest, the causes of growth and decay among the animals of the past, etc.; matters that really interest the general reader quite as much as details concerning creatures which he can only imperfectly comprehend. But the contents would belie the title, were this all. Many of the largest, most interesting and remarkable of extinct backboned animals, the rulers of the air and sea and dry land, mastodons, mammoths, horses and the like are described, and illustrated by restorations as in life from the skilful brush of Gleeson and Knight. Knight's reputation in such things is well known—his work is the very best, but Gleeson in the present instance comes a close second to him. The book is a good one for both the public and private library.

S. W. WILLISTON.

SCIENTIFIC JOURNALS AND ARTICLES.

The Osprey for February contains 'Notes on the Habits of the Broad-winged Hawk (*Buteo platypterus*) in the Vicinity of Washington, D. C.,' by J. H. Riley; 'Rambles about my Old Home,' by Milton S. Ray; 'The Mocking Bird at Home,' by F. H. Knowlton; 'Reminiscent, Random and Maine Bird Notes,' by W. C. Kendall, and a sketch, with portrait, of that most able ornithologist, 'Professor Alfred Newton,' by R. W. Shufeldt. The supplement, devoted to the 'General History of Birds,' contains a description of the general characters of the class and of the plumage.

The Plant World for February contains 'A Botanical Ascent of Mount Kataadin, Maine,' by John W. Harshberger; 'Another Trip to Glen Burnie, Maryland,' by C. E. Waters; 'Botanizing in Winter,' by C. F. Saunders, and 'A Primrose at Home,' by F. H. Knowlton, besides the usual and numerous notes and briefer articles which contain much of interest. In the 'Families of Flowering Plants' Charles L. Pollard concludes the description of the orders Opuntiales and Myrtifloræ and commences that of the Umbellales.

The Museums Journal of Great Britain for February contains an article on 'Museum Statistics,' intimating that it is desirable to know just how they are obtained, whether by estimate or by actual record. J. G. Goodchild presents an article 'On the Arrangement of Geological Collections,' and there is a sharp bit of criticism on some recent 'British Museum Appointments' in the entomological section. The subject of 'Hygiene as a Subject for Museum Illustration' is continued, showing the proposed arrangement of the divisions water, soil and personal. There is a large number of notes.

The American Museum Journal for February presents a review of the current work of the various departments and their more notable accessions, which include a good collection of mammals from Alaska, a fine skull of the woolly rhinoceros (*R. tichorhinus*) and a good series of butterflies from the Australasian region. This month's supplement is the Guide

Leaflet, describing 'The Collection of Minerals.'

SOCIETIES AND ACADEMIES.

PHILOSOPHICAL SOCIETY OF WASHINGTON.

THE 549th regular meeting was held March 15, 1902. The evening was devoted to a discussion 'On the Definition of Some Modern Sciences.'*

Dr. W. H. Dall opened the discussion with a reference to the early history of the Society, when all the scientific men of Washington belonged to it, and the splitting up into numerous societies had not begun. He quoted some of the definitions of science from the earliest English dictionaries, and in felicitous words welcomed the speakers who had been invited to follow him, and characterized their subjects.

Col. Carroll D. Wright spoke on 'Statistics.' The name is due to Achenwall, Professor at Göttingen about 1750. It may be considered either as a method, or as a science demanding a classification of facts. Numerous fallacies in the collection and use of statistical data were illustrated, and attention was called to the importance of the psychological element in the interpretation of such data; thus, it was found that nearly all the farm mortgages in 1890 were evidences of prosperity rather than of adversity.

Professor Roland P. Falkner, now in charge of the Document Division, Library of Congress, discussed 'Economics.' The limits of a science, he said, are largely questions of the division of labor. So definitions vary, but the consensus of opinion is that economics deals with man in his activities, which are designed to satisfy his material desires, in short with wealth. From an analysis of his wants the metaphysical side of the subject has been developed. His wants being unlimited and nature's provision being limited, man must put forth effort; the character of this effort and the rules which govern it are the subject matter of political economy. The form which economic organization assumes at any time and place depends upon the abundance of land, labor and capital: whatever the form, the 'economic man' seeks the maximum result with the minimum effort. The axioms then of the theoretical or deductive economists are the limitations of nature's gifts, and the economic man. The newer school of inductive economists concerns itself minutely with the affairs of the past as well as the present, and is known also as the historical school.

Professor Edward A. Pace, of the Catholic University, spoke on 'Psychology.' He pointed out that the subject is now in a transition state. The older psychology, based on introspection, was inductive, but dealt only with mental operations. The newer science has three methods or fields of research: It investigates the relations between mental and physical phenomena, the development of mental life, and abnormal psychic phenomena. There is a striking parallelism between many psychic and physical phenomena, and one of the great questions of the science is regarding a causal nexus between the two groups.

Dr. Lester F. Ward, speaking for 'Sociology,' defined it as the science of society or of social phenomena. It is based on the study of large groups of men, not of individuals. Tylor's ethnographic parallelisms prove a uniform law of psychic development; primary wants are the same and are similarly supplied everywhere; governments and religions have more in common than in diversity; history is everywhere the same except the names. Sociology can be a science only as it depends on phenomena; and these are due to causes. These causes may be grouped as (1) environment (climate, nature of country, etc.) and (2) subjective environment or character. The old doctrines of free will made man a lawless being, not a rational one. The law of parsimony runs through all life.

CHARLES K. WEAD,
Secretary.

BIOLOGICAL SOCIETY OF WASHINGTON.

THE 352d regular meeting was held on Saturday evening, March 22.

W. C. Kendall presented some 'Notes on the Sticklebacks,' briefly sketching the habits and habitats of these little fishes and stating that in spite of their insignificant size they occurred at times in such vast numbers as to be used for fertilizer, as food for cows and

* To be published in the *Popular Science Monthly.*