SCIENCE

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MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

*A DECADE OF NORTH AMERICAN PALEOBOTANY. 1890–1900.**

THE history of paleobotany constitutes a record of the most persistent and painstaking efforts to unravel a series of great facts which have been left by the wayside of time through an untold period of the earth's history, and to interpret them with reference to their true significance in the life of this planet.

Although attention had been directed to the phenomena of plants preserved in the crust of the earth essentially with the first discovery of coal, their occurrence did not excite very marked interest until the latter part of the seventeenth century—the observations of that time being made from the standpoint of the curious in nature, rather than from an appreciation or even suggestion of their scientific value, and it was not until 1709 that the first meritorious attempt to describe them in a scientific spirit was made. From then on through the remainder of the eighteenth century, a very considerable literature accumulated, and the infant science passed through what Ward has so very aptly called the 'twilight of its development,' while very nearly a full century passed before Schlotheim published the results of those studies which must be taken

* Address of the President of the Society of Plant Morphology and Physiology, given before the Baltimore Meeting, December, 1900.

older worker is by no means overlooked. The more thoroughly studied substances, such as egg- and serum-proteids with their crystalline forms, are taken up at length; and the muscle proteids are presented in the light of v. Fürth's work. To the physiological chemist who has occasion to refer frequently to recent investigations on the nucleoproteids and their derivatives, the careful summary of research in this field of work will be found most helpful. Thirty pages are devoted to the chemistry of hæmoglobin, and the chapter on the albuminoids is fairly exhaustive.

The volume is appropriately dedicated to the memory of W. Kühne.

Lafayette B. Mendel.
Yale University.

Treatise on Hygiene. By J. Lane Notter. Second edition. P. Blackiston's Sons & Co. 1900.

This is the second edition of the well-known book of Notter and Firth, which itself was founded on the still earlier treatise of Dr. A. E. Parkes.

It is a very comprehensive work, containing nearly eleven hundred pages, and treating of a very wide range of topics, such as, for instance, water, air, food, heating, ventilation, clothing, exercise, construction of houses, vital statistics, and military and naval hygiene.

The book as a whole is excellent, the material is well selected, and the views thoroughly modern. Treating such a wide range of subjects as the authors do, they must necessarily give frequently the opinions of others rather than their own, and this causes at times, where opinions differ, a lack of authority. In a few places remains of earlier editions crop out; thus under malarious soils no mention is made of the mosquito, but in another portion which is devoted to malaria the relation of the insect to the disease is fully stated.

In some places important omissions occur: thus in the preservation of milk cold is hardly alluded to, yet it is almost as important as cleanliness. The number of bacteria considered suitable in milk, 400,000 per cc., seems very high. Taking the book as a whole, it is one that can be thoroughly commended to those who have either a general or a special interest in the study of hygiene.

W. H. Park.

Scientific Journals and Articles.

The *Journal of Comparative Neurology* for December contains the following articles: 'The Giant Ganglion Cells of Catostomus and Coregonus,' by J. B. Johnston, West Virginia University. The author figures and describes successful Golgi preparations of these transient nerve cells and compares them with the sensory cells in the spinal cord of *Amphioxus* and *Petromyzon*, whose fibers reach the periphery without effecting relations with cells of the spinal ganglion. It is suggested that they are belated neural crest cells which failed to migrate into the spinal ganglia. 'Arrangement and Terminations of Nerves in the Œsophagus of Mammalia,' by Lydia M. DeWitt, University of Michigan. Investigations on the cat and rabbit by the *intra vitam* methylene-blue method. The following types of nerve termination are described: typical motor and secretory fibers from sympathetic ganglia of Auerbach's and Meissner's plexuses, motor fibers from the ventral horns of the spinal cord for the striated muscle fibers of the œsophagus, sensory termini in the mucosa from cells of spinal ganglia, and other sensory fibers, apparently wholly confined to the sympathetic nervous system. 'The Vibrissæ of certain Mammals,' by J. Franklin Messenger, University of New Mexico. The innervation of the hair follicles is figured and a peculiar erectile vascular pulvinus is described. 'The Ophthalmic and Eye Muscle Nerves of the Cat Fish (*Ameiurus*),' by I. S. Workman, Denison University. The cat fish is shown to resemble other teleosts in the absence of a *r. ophthalmicus profundus*. The nerve so named by some anatomists is the *r. ophthalmicus superficialis V*, to which are added facialis fibers for terminal buds on the top of the head. The eye muscle nerves show a ganoidean arrangement. 'On the Homologies of the Chorda Tympani in Selachians,' by H. A. Green, Denison University. The selachian types examined exhibit a pre-spiracular nerve, in addition to the *r. palatinus* and the true pre-trematic ramus for the pseudobranch, which runs down between the

mandible and the hyoid arch and whose morphological relations seem to be the same as those of the mammalian chorda. The editors announce the addition of Dr. Lewellys F. Barker, of the University of Chicago and Rush Medical College, to the staff of editorial collaborators.

IN an article entitled 'The Recent Development of Method in Theoretical Physics,' published in the January *Monist*, Professor Ludwig Boltzmann, formerly of Vienna but now of the University of Leipsic, has presented a trenchant criticism of the philosophical tendencies now dominating physical research. Professor Boltzmann is an outspoken votary of the classical or atomistic physical philosophy which culminated in the labors of Faraday and Maxwell; and after rapidly sketching the rise and development of the mechanical philosophy he proceeds to subject to searching scrutiny the views of the energeticians (Ostwald, Helm, etc.) and the phenomenologists (Kirchhoff and Mach). While not underrating the achievements of either of these two recent schools of physical theory, he asserts that the early acquisitions of the atomistic inquirers could never have been reached by energetics or by phenomenology. To the same number of *The Monist*, MM. Vaschide and Piéron, of Paris, France, have contributed an erudite article on 'Prophetic Dreams in Greek and Roman Antiquity,' for which they have collected from the original sources all the data in the ancient writings relating to oneirology. The remaining articles are an 'Introduction to a Psychological Study of Religion,' by Professor James H. Leuba, and 'Jew and Gentile in Early Christianity,' by Dr. Paul Carus.

THE December number of the *American Geologist* contains the following articles: 'Notes on the Geology and Petrography of Monhegan Island, Maine,' by E. C. E. Lord of Washington, D. C. The works are described as granitic, containing feldspar, olivine, pyroxene and hornblende. The rocks are analyzed petrographically and chemically and compared with rocks from other districts. The mass is frequently crossed by acid and basic dykes which are described and analyses given. 'The Mineralogical and Petrographic Study of the Gabbroid Rocks of Minnesota,' by N. H. Winchell, contains Chapters VIII. to X. inclusive and concludes the series. Chapter VIII. contains a discussion of Quartz Gabbro, in which is given the minerals and their occurrence together with their chemical composition. Chapter IX., Silico ferrolyte, contains a discussion of a rock extremely rich in magnetite containing numerous grains of quartz. This name has been proposed by Mr. Winchell to distinguish the rock from the ferrolyte of Wadsworth, which it resembles. Chapter X., 'Résumé and Conclusions,' contains discussions of the comparative petrography, the mineralogical and chemical composition of the various types of rock studied in the preparation of the report. Next is an interesting article on 'Meteorology of the Ordovician,' by F. W. Sardeson, which is followed by the usual editorial comments, a review of recent geological literature and personal and scientific news.

DR. A. DE WATTEVILLE has resigned the editorship of *Brain*. When accepting his resignation the Council adopted the following resolution: "The Council accepts with great regret Dr. de Watteville's resignation of the editorship of *Brain*, and desires to take this opportunity of recording the deep debt of gratitude that the Society owes him for the way in which he has conducted the Journal for the past twenty years. The Council feels that parting with Dr. de Watteville is an event of great moment to the Society, for he has not only brought *Brain* to a high standard of perfection and secured for it a great European reputation, but even the existence of the Journal at the present time is due to his energetic action at a critical juncture in 1880. Moreover, the Council is mindful that the Society itself took origin on Dr. de Watteville's initiative, at a meeting held at his house, on November 14, 1885."

SOCIETIES AND ACADEMIES.

GEOLOGICAL SOCIETY OF WASHINGTON.

AT the eighth annual meeting, held December 19, 1900, the following officers were elected for the ensuing year:

President, J. S. Diller; *Vice-Presidents*, C. W. Hayes and G. P. Merrill; *Treasurer*, M. R. Campbell; *Secretaries*, David White and F. L.