Under the head of Physics of the Ether are considered the constants of mirrors and lenses, the combinations of these to form telescopes and microscopes, the spectrometer and spectrum analysis, magnetic and electric fields of force, absolute measurements of electric current, quantity, potential difference and resistance, battery electromotive forces and resistances, the use of galvanometers, the absolute determination of capacity and comparison of capacities, electro-magnetic induction, efficiency curves for incandescent lamps, thermo-electric power, and radiation.

On the assumption that such a course should be progressive in difficulty, the last parts require decidedly greater proficiency on the part of the student. Many juniors will find it necessary to read with special care the theoretic discussion of capacity. In the exercise on radiation Boys' radiomicrometer is employed in place of thermopile and galvanometer.

The book closes with a few tables of constants, of natural functions and of logarithms.

Upon the whole, this volume is a welcome addition to the literature of the subject. Apart from some obvious typographical errors, it may be consulted with confidence in the accuracy of its statements. While many other laboratories are less generously equipped than the Ryerson physical laboratory, and therefore cannot substitute this book for local instruction cards, it contains so much of good suggestion and is so well methodized that many instructors will surely utilize it in the improvement of the instructions which they prepare for their own students.

W. LE CONTE STEVENS.

SCIENTIFIC JOURNALS.

THE *American Naturalist* for April, which has just been received, opens with an article on the Sarcostyles of the *Plumularidæ*, by Professor C. C. Nutting, followed by the third chapter of the work on the wings of insects, by Professor J. H. Comstock and Mr. J. G. Needham. The present chapter treats of the specialization of wings by reduction and is illustrated by twenty-three cuts. There are briefer articles as follows: 'A Case of Variation in the Number of Ambulacral Systems of *Arbacia punctulata*, by H. L. Osborn; 'Relationship of the Chriacidæ to the Primates,' by Charles Earle; 'Further Notes on Thermometer Crickets,' by C. A. Bessey and E. A. Bessey; 'Pollination of the Closed Gentian by Bumblebees,' by R. J. Webb.

Popular Astronomy for June opens with an article on 'Scales of Seeing,' by Mr. A. E. Douglass, of the Lowell Observatory, in which he discusses a standard scale which he hopes will be generally adopted and used for comparison. There are articles by Dr. Herman S. Davis on women astronomers and Orrin C. Harmon on the astronomy of Shakespeare, and short articles by Messrs. E. J. Wilczyuski, J. A. Parkhurst and the editors, Professor W. W. Payne and Mr. H. C. Wilson.

A NEW journal of interest to students of agricultural science, entitled *Revue des Hybrides Franco-Americains*, has been published since January of this year by M. P. Gouy, Vals près Aubenas.

SOCIETIES AND ACADEMIES.

PHILOSOPHICAL SOCIETY OF WASHINGTON.

THE 486th meeting of the Philosophical Society was held at 8 p. m., May 28th, at the Cosmos Club. Two biographical sketches were read before the regular exercises for the evening. The first was of Mr. C. H. Kümmel by Mr. Marcus Baker, the second of Mr. Orlando M. Poe by Mr. O. H. Tittmann. The first scientific paper was by Mr. Louis A. Fischer, who described and illustrated in a general way the methods for comparing 'line' with 'end' standards. He also described in detail a special method for comparing such standards depending upon small auxiliary abutting pieces, the principal features of which are that they are very light and that the lines ruled upon them are so close to abutting surfaces (about 0.8 mm.) that the distance between the lines when the pieces are in contact with one another may be measured with the micrometer screw of any ordinary microscope. He called attention to the fact that certain systematic errors amounting to one part in 300,000 were discovered in the lengths of bars determined by the Fizean, or reflection, method at the International Bureau of Weights and Measures. This method was used

to determine the relation of the present International Metre to the old metre of the archives; and, therefore, the assumption heretofore made that these two bars are identical in length can no longer be accepted.

The second paper was by Mr. A. Lindenkohl, the substance of which was as follows: Recent hydrographic surveys off Montauk Point and off the southern coast of the New England States furnish more exact information concerning the submerged terminal moraines of those regions than preceding ones. The shoal ground which, in the shape of a horseshoe, stretches from Martha's Vineyard to Block Island, is believed to be of glacial origin, and shows that the moraine was laid down on a very uneven floor, and that here the ice sheet pushed out into the sea to a greater distance and depth than elsewhere in the vicinity. A 'drowned' river channel breaking through this shoal ground indicates a subsidence of about 150 feet. The shoal ground between Block Island and Long Island has several dangerous rocky heads; their existence was not suspected until, in 1862, the steamship 'Great Eastern' struck on one of them, since called 'Great Eastern Rock.' About half way between the two islands we meet another sunken river channel, giving evidence of a subsidence of about 130 feet. The moraine which is represented by Cape Cod and the Elizabeth Islands does not appear to terminate at Cuttyhunk, but to extend farther to the southwest, including Brown's shoal, and to connect with the one on the mainland by successive steps, forming barriers across the entrance of Buzzard's Bay, which are pierced by a channel 120 feet deep. This channel points to a sinking of the land of about 80 feet. The subsidence of 150 feet furnishes an estimate of the highest level attained by the land since the glacial period, and those of 130 and 80 feet, respectively, to indicate transitory levels during a period of gradual subsidence.

E. D. Preston,
Secretary.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.

May 24. Mr. Charles Morris, under the auspices of the Anthropological Section, read a paper on the antiquity of man from the standpoint of evolution.

The carnivorous tendencies of certain monkeys were considered by Messrs. Dixon and Morris.

May 31. Professor H. A. Pilsbry exhibited a fine collection of mollusca from South Australia, presented to the Academy by Mr. Bednall, of Adelaide. They nearly complete the Academy's collection of shells from that region. The mollusca, and probably the other invertebrates of South Australia, are not at all archaic, and do not represent the fauna of an earlier geological period as do the higher orders.

Professor B. Sharp called attention to a specimen of *Ibacus Peronii* from South Australia, other examples of the same decapod being from China, thus illustrating an important extension of geographical range. The second antennæ, the auditory function of which was dwelt on, are curiously flattened and extended laterally, instead of being lengthened, as is usually the case. The strong spines of the species resemble those of *Palinurus* and are probably of similar protective value. A species of *Pseudosquilla* in the collection from the same region is common to the tropical Pacific.

A paper entitled 'Botanical Observations on Mexican Flora, especially on the Flora of the Valley of Mexico,' by J. W. Harshberger, M.D, was presented for publication.

Edw. J. Nolan,
Recording Secretary.

NEW BOOKS.

L'Année philosophique, publiée sous la directions de F. Pillon. Paris, Alcan. 1898. Pp. 312.

Introduction to Algebra for the use of Secondary Schools and Technical Colleges. G. Chrystal. London, Adam and Charles Black; New York, The Macmillan Company. 1898. Pp. xviii +412+xxv. $1.25.

La fatigue intellectuelle. A Binet et V. Henre. Paris, Schleicher Frères. 1898. Pp. 338.

Industrial Electricity. Translated and adapted from the French of Henry de Graffigny by A. G. Elliott, B.Sc. London, Whittaker & Co.; New York, The Macmillan Company. 1898. Pp. 152. 75 cents.