Who's Who, 1899? Edited by DOUGLAS SLADEN. London, Adam and Charles Black; New York, The Macmillan Company. 1899. Pp. xx + 1014. $1.75.

Laboratory Manual in Astronomy. MARY E. BYRD. Boston, Ginn & Co. 1899. Pp. ix + 273.

Experimental Morphology. Part II. Effect of Chemical and Physical Agents on Growth. CHARLES BENEDICT DAVENPORT. New York and London, The Macmillan Company. 1899. Pp. xviii + 508.

SCIENTIFIC JOURNALS AND ARTICLES.

American Chemical Journal, February: 'On the Constitution of the Salts of Imido-Ethers and other Carbimide Derivatives,' by Julius Stieglitz. 'On the Hydrochlorides of Carbophenylimid Derivatives,' by H. N. McCoy. 'On the Solubility of Argentic Bromide and Chloride in Solutions of Sodic Thiosulphate,' by T. W. Richards and H. B. Faber. From a study of the solubility and effect upon the freezing points of solutions caused by these salts certain conclusions have been drawn as to the probable nature of the substances present in solution. 'Note on the Spectra of Hydrogen,' by T. W. Richards. The author considers the presence of the red spectrum to be due to a breaking-down of water vapor forming atomic hydrogen, which gives the red spectrum. If the gas is perfectly dry the white spectrum alone is obtained. J. E. GILPIN.

THE first number of *Bird Lore*, edited by Mr. F. M. Chapman, and devoted to popular ornithology, has just appeared. As the official organ of the Audubon Society, and in appealing to young readers as well as old, *Bird Lore* essays to cover a new field. The frontispiece is a view of John Burroughs at 'Slab Sides,' and the first article, 'In Warbler Time,' is from his pen. There are two articles illustrated by photographs from life, by Dr. T. S. Roberts and H. W. Menke; Miss Isabel Eaton has a department for teachers and students, and Miss Florence A. Merriam one for young observers; Notes, Reviews and Editorials follow; while the Audubon Department, edited by Mrs. Mabel Osgood Wright, concludes the number.

WE have received the first number of *The School World*, published in Great Britain, by Messrs. Macmillan & Co., and addressed especially to teachers in the secondary schools. The first number presents an interesting table of contents including articles on 'The Teaching of Algebra,' by Professor G. B. Mathews, F.R.S.; 'Physical Observations of Brain Conditions of Boys and Girls in Schools,' by Dr. Francis Warner; 'Bimanual Training in Schools,' by Mr. H. Bloomfield Barry; 'Elementary Experimental Science,' by Professor R. A. Gregory and Mr. A. T. Simmons; and 'Current Geographical Topics,' by Dr. A. J. Herbertson.

THE Annual Report of the Director of the Field Columbian Museum for 1897–98 notes good progress, particularly in the Departments of Anthropology, Geology and Botany. Two of Mr. Akeley's fine groups have been added to the exhibition series, one of the Oryx and one of Waller's Gazelle, the latter very striking from the pose of the principal figure and from the extreme length of neck and limbs obtained by these animals. One of the plates in the report shows the large model of the moon recently noticed in SCIENCE. The Director notes that special attention has been given to what he aptly terms the 'highly important but uninteresting and endless labor' of cataloguing, inventorying and labelling

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SOCIETIES AND ACADEMIES.

THE BIOLOGICAL SOCIETY OF WASHINGTON.

THE 300th regular meeting of the Biological Society of Washington was held January 14, 1899, President Frederick V. Coville in the chair. Brief notes were presented by the following members: Ashmead, Bailey, Pollard, Erwin F. Smith, Chesnut and Cook. Mr. Ashmead exhibited specimens of a very rare South American wasp (*Chirodamus*), the type of which was secured by Charles Darwin during the voyage of the 'Beagle.' The new specimens were secured by the U. S. Fish Commission and belong to the National Museum.

Mr. Vernon Bailey described a case of protective coloration in *Ochotona*, a coney native to the mountains of California. One of the broken pieces of the rocks among which the animals live was shown in comparison with a stuffed specimen. Mr. Chesnut submitted photographs and fruits of the California Laurel

(*Umbellularia californica*), a small tree of the olive family. A volatile oil is distilled from the leaves and used for medicinal purposes, while the fruits are eaten by the Indians after being roasted to destroy an acrid principle which they contain.

In the regular program Mr. C. L. Marlatt explained the difficulty and confusion which has appeared in connection with previous attempts at designating numerically the broods of the Seventeen-Year Locust, or Periodical Cicada. This insect presents two distinct races, or subspecies, the more southern of which has a thirteen-year period. Mr. Marlatt proposes to use the Roman numerals from I to XVII for the seventeen-year broods and then continue from XVIII to XXX for the thirteen-year series, thus providing a fixed designation for every possible brood. Preceding nomenclatures of the subject were compared with the new suggestions by means of charts. The paper was discussed by Messrs. Howard, Lucas, Gill, Waite, Ashmead and Cook.

Dr. E. A. de Schweinitz explained the practical working of the serum treatment for swine plague and hog cholera. In the previous season (1897) about 200 animals were treated, with a loss of about 20 per cent., while of the recorded cases of uninoculated animals about 80 per cent. died. During the past season the treatment was given to about 2,000, with a loss of about 23 per cent., while of 4,000 untreated about 40 per cent. died. The slightly greater percentage of loss this season is explained by the fact that the conditions of the experiment were not as carefully controlled. The difficulty of diagnosis renders it desirable to use a mixture of the serums prepared for the two diseases.

Dr. Erwin F. Smith discussed 'The Effect of Acid Media on the Growth of Certain Plant Parasites.' Extended experiments with several bacterial diseases of plants demonstrate that some species of these are exceedingly susceptible to an excess of acid in the culture medium. The very slow progress of some such diseases was explained by the fact that they are limited at first to the vascular system, the fluids of which are alkaline, while those of the parenchyma are acid. Some of the germs refused, in fact, to grow at all in the media prepared with the juices of their own host-plants, until the acidity had been artifically neutralized, while in others growth was greatly retarded. A chart was exhibited showing the comparative reactions of the various species studied, with reference to a definite scale of acidity and alkalinity.

O. F. Cook,
Corresponding Secretary.

MEETING OF THE NEW YORK SECTION OF THE AMERICAN CHEMICAL SOCIETY.

The January meeting of the New York Section of the American Chemical Society was held on Friday evening, the 13th ult., in the Assembly Hall of the Chemists' Club, 108 West 55th street, Dr. Wm. McMurtrie presiding.

An arrangement for holding the meetings of the Society regularly in the club building was announced and ratified by unanimous vote. Reports were made showing that the funds contributed for the expenses of the midwinter meeting had been sufficient; that the library had been moved to the club rooms, where it was undergoing classification and arrangement, and that the resident membership had reached one hundred, and the non-resident nearly, if not quite, as many more.

The following papers were read: 'Determination of the Bromine Absorption of Fats,' P. C. McIlhiney; 'Indicators,' John Waddell; 'Exhibition of Apparatus for Washing Precipitates,' etc., W. D. Horne.

Mr. McIlhiney recommends the bromine number instead of the iodine number for identifying oils and fats, on account of the greater rapidity of reaction, greater stability of the bromine-carbon tetrachloride solution both before and during use, and the want of differentiation by iodine, between addition and substitution compounds in the reaction.

Mr. Waddell showed some very pretty experiments illustrating the behavior of indicators, and explanatory of their adaptability to acid or alkaline reaction, according to their respective constitution.

Phenolphthalein, a weak acid, reacts red by dissociation in presence of a strong alkali; in presence of ammonia and alcohol the reaction

may be restrained and again developed by addition of water.

Methyl orange, cyanine and coralline were similarly demonstrated.

A letter was read from the General Secretary stating that "at the closing session of the mid-winter meeting at Columbia University, December 28th, by unanimous vote, the cordial thanks of the Society were extended to the New York Section for the bountiful hospitalities of the Section, which were so heartily enjoyed by the members of the Society during the eighteenth general meeting."

DURAND WOODMAN,
Secretary.

DISCUSSION AND CORRESPONDENCE.

REPLY TO CRITICS.

SUPPOSE a house just finished is empty; suppose that it is painted inside and out so as to conceal from vision everything but the paint. Suppose I come upon such a house for the first time and consider it a body of paint, for paint is the only thing that appears at first. In time I discover that it is made of bricks. At first it had the appearance of paint; now it has the appearance of paint and bricks. After further investigation I find that it is partly of wood, for wood appears in its structure. Now, I conclude that it is paint, bricks and wood. By further investigation I find that it is composed partly of iron. Now, I consider it as paint, bricks, wood and iron. Then I might investigate paint, bricks, wood and iron to discover their chemical constitution and the biological history of wood, and new facts would appear. I might go on indefinitely to show how new things are discovered in the building, both in structure and in purpose, and the new things discovered will appear to me. Those already mentioned are enough for this illustration.

Common sense says that paint is paint. The metaphysician says that paint is appearance; that there is no paint as paint, or at least all we know about it is appearance. The same may be said with regard to the bricks. Common sense says bricks are bricks, whether they appear or not; the metaphysician says the bricks are only appearances. Common sense says there is wood, whether it appears or not; the metaphysician says no, it is only appearance. When we discover the iron, common sense says there is iron in this structure, whether it appears or not; the metaphysician says no, there is only appearance.

Let us get a learned name for appearance. Let us call appearance 'phenomenon,' for that is the Greek word meaning appearance. Now, common sense says that paint, bricks, wood and iron are paint, bricks, wood and iron, respectively, and that appearance is appearance; but our metaphysician says that all of these things are only appearance and we call appearances phenomena; therefore, this house, with all its appearance, s only a concatenation of phenomena. Ofttimes it is asserted that the world is a phenomenal world. Those who make this assertion believe that the world is only appearance. Common sense says that all things of the world exist and manifest themselves by appearance, but that they exist whether they manifest themselves or not. Metaphysic says that the things of the world do not exist as they appear, but that their substrates exist, and that these substrates manifest properties which are not the things themselves. The properties are only illusions—there is no iron, but there is a substrate of iron which manifests certain attributes which are illusions.

In modern times there are two ways in which these supposed illusions are explained. In one way the attempt is made to show that the substrate of things is psychosis or abstract mind; the other is the attempt to explain that the substrate is force or motion. Thus, metaphysicians may be classified as idealists and not materialists.

Common sense says that we may know a body imperfectly and by investigation cognize more and more about it, and, however, simple a body it may be, we may, by investigation, learn very much about it and still not know all.

The idealist says this is true, but by further investigation everything will turn into appearance until we resolve the body into a substrate, and its substrate will be found to be psychosis, which is timeless and spaceless.

The materialists say we know more and more about a body until we resolve it into motion or force, some holding that force creates motion, others that force is a mode of motion; so that