

species and varieties of Protophyta and Phycophyta found within the State, contributed by Mr. DeAlton Saunders, and of the Coleochætaceæ and Characeæ by Mr. Albert F. Woods. The descriptions are well drawn, the typography excellent and the plates accurate and well executed. We tender our cordial congratulations to all concerned in the production of the book and to all who may have opportunity to use it.

N. L. B.

NOTES.

THE SCIENTIFIC SOCIETIES.

THE programs of the mid-winter meetings of the several scientific societies promise large attendance and many important papers. The American Society of Naturalists meets at Johns Hopkins University, Baltimore, and in conjunction with it the American Morphological Society and the American Physiological Society. At the same place and time the American Society of Geologists meets. During the same week the Anatomists meet at Columbia College, New York; the American Psychological Association meets at Princeton; the American Folklore Society meets at Washington, and the annual meeting of the American Mathematical Society is held at Columbia College. These meetings will be fully reported in SCIENCE.

PHYSICS.

ACTUAL trial trips with flying machines have recently been made by Mr. Maxim and Prof. Langley. Mr. Maxim's machine was fastened to rails to prevent its rising, and sailed 500 feet at the rate of 45 miles per hour. Prof. Langley's aeroplane was allowed to fly over the water at Quantico, Md., on December 8th. Both Mr. Maxim and Prof. Langley use light steam engines in preference to storage batteries.

THE Société Internationale des Électriciens established a central laboratory at Paris about seven years ago. The principal

object of the laboratory was the preservation of electrical standards, and to afford practical electricians an opportunity for testing their various instruments. It is evident that such a laboratory offers special advantages for the investigation of questions belonging to the science and industry of electricity. These facilities have been to some extent utilized; but, in order to increase the usefulness of the institution, the Society has added to it a School of Applied Electricity. This school, which will be opened on December 3d, has been constructed on a plot of land granted by the city of Paris, the funds for the building having been raised by private subscription. Purely practical instruction will be given at the school. There will be two chief courses, one dealing with the industrial applications of electricity, and the other with electrometry. It is hoped that the school will be a training ground for higher work in the Central Laboratory, to which it is attached.—*Nature*.

ANTHROPOLOGY.

DR. CHARLES L. DANA's address on *Degeneration and its Stigmata*, delivered at the Anniversary Meeting of the New York Academy of Medicine, Nov. 28, 1894, has been printed in the *Medical Record*, of Dec. 15th. Dr. Dana traces with much skill the historic development of the scientific method that discovers mental traits and especially mental degenerations from their physical manifestations.

THE charges made against the management of the Elmira Reformatory have been dismissed by Governor Flower. The majority of the commissioners who examined the charges report that the institution stands preëminent among the reformatories of the world and that its success in the reformation of criminals has been extraordinary. This confirms the views of the leading criminologists and reformers.

EDUCATIONAL.

DR. J. K. TALMAGE has been called to the professorship of geology recently established in the University of Utah.

AMERICA has accomplished much for the advancement of Anthropology, but the work has been largely done by the Government institutions and by individuals. Columbia College offers this year courses in Anthropology (Dr. Farrand and Dr. Ripley), and the University of California must now be added to the institutions proposing courses in this subject.

THE Universities of Oxford and of Cambridge have recently taken action of considerable interest to Americans proposing to study abroad. The comparatively few Americans who have been in residence at Oxford or Cambridge would undoubtedly agree in recommending this course to others as highly as studying at a German university. But hitherto degrees could only be obtained by undergoing very irksome examinations. Oxford will now confer the degrees Litt. B. and Sc. B. on evidence of 'a good general education,' and research work evincing 'a high standard of merit.' Three years' residence is required, but this condition may be modified. The grace adopted at Cambridge is as follows: "That a syndicate be appointed to consider: (1) the means of giving further help and encouragement to persons who desire to pursue courses of advanced study or research within the University; (2) what classes of students should be admitted to such courses; (3) what academic recognition, whether by degrees or otherwise, should be given to such students, and upon what conditions; that the syndicate be empowered to consult and confer with such persons and bodies as they may think fit; and that they report to the Senate before the end of the Lent Term, 1895."

THE fourth edition of *Minerva* (1894-1895)

presents as frontispiece an etched portrait of Lord Kelvin by Herkomer. The book now extends to 930 pages, an increase of 69 pages over the preceding edition, many new institutions having been included. The American universities and colleges added in this edition are Bryn Mawr, Cincinnati, Colgate, Massachusetts Institute of Technology, Nebraska, Ohio Wesleyan, Vermont, Wellesley, Western Reserve, making the total number thirty-nine. In attendance of students the order of the great universities is Paris, Berlin, Madrid, Vienna, Naples, Moscow, Budapest, Munich, Athens, Oxford, Harvard. But in many of these institutions attendance on popular lectures seems to be included.

A WORK with the range of *Minerva*, giving the courses as well as the instructors in institutions of learning, would be of much use, but a difficult undertaking. The need has, however, been supplied for the different institutions of Paris by *Le livret de l'étudiant de Paris* (Delalain Frère 1894-95), prepared under the direction of the general council of the faculties.

FORTHCOMING BOOKS.

DR. DANIEL G. BRINTON, Professor of American Archæology in the University of Pennsylvania, has in press a *Primer of Mayan Hieroglyphics*, to be published by Ginn & Co., Boston, in which he aims to explain the elements of the mysterious writing on the monuments of Central America.

GINN & Co. also announce a series of handbooks on the *History of Religions*, edited by Prof. Morris Jastrow, Jr., of the University of Pennsylvania. *The Religions of India*, by Prof. E. W. Hopkins, of Bryn Mawr, will form the first volume.

MACMILLAN & Co. announce *The Principles of Sociology*, by Prof. Franklin H. Giddings, of Columbia College; *Monism, The Confession*

of Faith of a Man of Science, by Dr. Ernst Haeckel; *Life at the Zoo*, by C. J. Cornish; a new edition of S. Thompson's *Electricity and Magnetism* and *Mental Development in the Child and in the Race*, by J. Mark Baldwin.

SOCIETIES AND ACADEMIES.

THE NEW YORK ACADEMY OF SCIENCES.

J. A. MATTHEWS, *Notes on Carborundum*.

BASHFORD DEAN, *On the collections of Fossil Fishes at Berea, New London and Delaware, Ohio*.

L. McI. LUQUER, *The Relative effects of Frost and Sulphate of Soda Efflorescence as shown by Tests of Building Stone*.

J. F. KEMP, *Secretary*.

THE TORREY BOTANICAL CLUB.

B. D. HALSTED, *Abnormalities in Plants Due to Fungus Parasites*.

HENRY H. RUSBY, *Secretary*.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.

LUDWIG GUTMANN, *On the Production of Rotary Magnetic Fields by a Single Alternating Current*.

In the absence of the author, the paper will be presented in abstract by Dr. M. I. Pupin.

A meeting of Western members will be held the same evening at Chicago, where the paper will be read by the author.

RALPH W. POPE, *Secretary*.

SCIENTIFIC JOURNALS.

THE AMERICAN NATURALIST.

Quaternary Time Divisible in Three Periods, the Lafayette, Glacial, and Recent: WARREN UPHAM.

The Homologies of the Uredinea (The Rusts): CHARLES E. BESSEY.

On the Evolution of the Art of Working in Stone; a preliminary paper by J. D. McGuire: CHARLES H. READ.

Zoölogy in the High School: CLARENCE M. WEED.

Editorials; Recent Books and Pamphlets; Recent Literature.

General Notes:—*Petrography; Geology and Paleontology; Botany; Zoölogy; Entomology; Archeology and Ethnology*.

Proceedings of Scientific Societies.

THE PHYSICAL REVIEW.

Frontispiece: portrait of Professor von Helmholtz.

Studies of the Lime Light: EDWARD L. NICHOLS and MARY L. CREHORE.

A Study of the Residual Charges of Condensers and their Dependence upon Temperature: FREDERICK BEDELL and CARL KINSLEY.

A General Theory of the Glow-Lamp II.: H. S. WEBER.

Minor Contributions; Notes; New Books.

BULLETIN OF THE AMERICAN MATHEMATICAL SOCIETY.

On the Group of Holoedric Transformation of a Given Group into Itself: E. HASTINGS MOORE.

On the Non-Primitive Substitution Groups of Degree Ten: G. A. MILLER.

Briefer Notices; Notes; New Publications.

NEW BOOKS.

Popular Lectures and Addresses. Vol. II., *Geology and General Physics*. SIR W. THOMPSON. London and New York. Macmillan & Co. 1894. Pp. x., 599.

Light. Elementary text-book; theoretical and practical. R. T. GLAZEBROOK. Cambridge University Press. New York. Macmillan & Co. 1894. Pp. vii., 213. \$1.00.

Manual of Physico-Chemical Measurements. By WILHELM OSTWALD. Trans. by JAMES WALKER. London and New York. Macmillan & Co. 1894. Pp. xii., 255. \$2.25.

Electricity One Hundred Years Ago and To-day. EDWIN J. HOUSTON. New York. W. J. Johnson & Co. 1894. Pp. 199. \$1.00.