

past history of a group by studying its species. If the species are well defined and show elaborate adaptations to the environment the group has long existed under relatively uniform conditions. If, on the other hand, the species are defined with difficulty and connected by numerous races it may be presumed that the environment of the group has changed in recent times, and especially that it is undergoing expansion and differentiation in new territory. In northern regions the retreat of the ice has exposed much such territory; in the Antilles it has been the elevation of the land; in other cases a type may have found new lands by migration, and may thus exhibit incipient new species in the midst of a stable ancient fauna. As an example of the last-mentioned class may be mentioned *Danaë berenice jamaicensis* in Jamaica, as against the old Jamaican type *Papilio homerus*. We have digressed from the immediate subject of this useful catalogue, but the interest of such works lies largely in the suggestiveness of their orderly and condensed array of facts.

T. D. A. COCKERELL.

MESILLA PARK, N. M., February 12, 1899.

*Industrial Electricity.* Translated and adapted from the French of HENRY DE GRAFFIGNY. Edited by A. G. ELLIOTT, B.Sc. London and New York, The Macmillan Company. Pp. 152. With 65 illustrations. Price, 75 cents.

This little volume, according to the editor's note, is the first of a series upon Electromechanics, the other volumes of which will treat the more important of the branches here touched upon, separately and in detail. It is divided into short chapters, and explains, in very clear and non-mathematical language, the various applications of electricity.

Beginning with Nature of Electricity, a *résumé* of Hertz's work is given, showing the identity of light and electrical vibrations. Then follow, in order, chapters on Electric Units, Magnetism and Induction, and Practical Measurement of Electrical Quantities.

Chapters V. and VI. are respectively on Chemical Generators of Electricity and Accumulators, covering the subjects of primary and storage batteries and containing much useful information and explicit directions as to handling and care.

Dynamo Electric Machinery is next touched upon, including direct current dynamos, alternators, two- and three-phase generators. The remaining five chapters merely touch upon the following subjects: Electric Light, Electricity as a Motive Power, Electro-chemistry and Electro-plating, Bells and Telephones, and Telegraphs.

The only criticisms that can be advanced are:

1. On page 12 the table gives  $10^3$  C.G.S. units in one Henry instead of  $10^9$ , while the table on page 27 has many of the dimensions of the mechanical, electro-magnetic and magnetic units given incorrectly.

2. Besides these lapses the volume is, with one or two exceptions, entirely devoid of allusions to American apparatus and machinery.

Taken as a whole, however, the volume is a creditable piece of work, for the task of condensing so much in so small a space is, to say the least, herculean.

W. H. F.

#### GENERAL.

THE Teachers' Professional Library, edited by Professor Nicholas Murray Butler, of Columbia University, is announced by The Macmillan Co. The books already published on 'The Development of the Child,' by Dr. Nathan Oppenheim; 'The Study of Children and their School Training,' by Dr. Francis Walker, and a 'Handbook of Nature Study,' by O. Lange, are included in the series and the following are announced for early publication:

'The Practical Lessons of History,' by William T. Harris, LL.D., U. S. Commissioner of Education.

'Social Phases of Education in the Home and in the School,' by Samuel T. Dutton, Superintendent of Schools, Brookline, Mass.

'Educational Aims and Educational Values,' by Dr. Paul H. Hanus, Harvard University.

'The Hygiene of the School and of Instruction,' by Edward R. Shaw, Ph.D., New York University.

'Method in Education,' by Walter L. Hervey, Ph.D., Department of Education, New York City.

'The Study and Teaching of History,' by Miss Lucy M. Salmon, Vassar College.

'The Study and Teaching of Geography,' by Dr. Jacques W. Redway, of New York.

'The Study and Teaching of English,' by Percival Chubb, of the Ethical Culture Schools, New York.

'The Study and Teaching of Mathematics,' by

David Eugene Smith, Ph.D., State Normal School, Brockport, N. Y.

IT is announced that the government has compiled a History of the Territory of Alaska, bringing the explorations made by army officers up to date and including an elaborate description of the physical resources of the Territory. The compilation when published will make a large octavo volume of about 500 printed pages. The material was supplied, by the War Department under the direction of Assistant Secretary Meiklejohn, to the Senate.

#### BOOKS RECEIVED.

*General Physiology.* MAX VERWORN. Translated from the second German edition and edited by FREDERIC S. LEE. New York and London, The Macmillan Company. 1899. Pp. xvi + 615. \$4.00.  
*L'audition et ses organes.* M. E. GELLÉ. Paris, Alcan. 1899. Pp. 326.

*La Céramique ancienne et moderne.* E. GUIGNET and EDOUARD GARNIER. Paris, Alcan. 1899. Pp. 311.

*The Theory of the Leisure Class: an Economic Study in the Evolution of Institutions.* THORSTEIN VEBLEN. New York and London, The Macmillan Company. 1898. Pp. vii + 400. \$2.00.

#### SCIENTIFIC JOURNALS AND ARTICLES.

THE American Mathematical Society is actively pushing the plans for the publication of its Transactions, and it is probable that the first number will appear in January next. A committee, consisting of Messrs. T. S. Fiske, R. S. Woodward, E. H. Moore, Maxime Bôcher and James Pierpont has been appointed to secure the necessary financial guarantees. Subscriptions of one hundred dollars annually for a term of five years have already been pledged by representatives and friends of each of the following institutions: Chicago University, Columbia University, Yale University and Bryn Mawr College. Other pledges are anticipated and the plan is already assured of success.

*The Journal of Geology*, Vol. 7, No. 1, for January and February, contains the following papers:

Frank Leverett: 'The Lower Rapids of the Mississippi River,' pp. 1-20. The writer discusses the abandonment by the Mississippi River of its pre-glacial channel just above Keokuk, Ia., and the production of the newer and

more contracted channel, in which are the rapids. The Kewatin ice sheet and its drift are regarded as the principal cause.

H. B. Kümmel: 'The Newark Rocks of New Jersey and New York,' pp. 23-53. The writer divides the strata under consideration into the Stockton, Lockatong, Brunswick and Trap formations. Their distribution, character, folding and faulting, and the conditions prevailing during their formation, are then discussed.

Henry S. Washington: 'The Petrographical Province of Essex County, Mass.,' II., pp. 53-64. The paper continues one that was begun in the last number. It describes, with analyses, the essexites, diorites, quartz-augite-diorites, porphyritic diorites and gabbros.

J. A. Udden: 'The Sweetland Creek Beds,' pp. 65-79. The beds are chiefly shale, and lie between the Cedar Valley Limestone below and the Coal Measures above, in Muscatine county, Ia. Fossils indicate an Upper Devonian Age.

G. H. Squier: 'Studies in the Driftless Region of Wisconsin,' pp. 79-83. One glaciated boulder has been found in a valley within the driftless region.

W. N. Logan: 'A Discussion and Correlation of certain Subdivisions of the Colorado Formation,' pp. 83-92. The paper discusses and correlates the subdivisions of this formation in the Kansas, Colorado, Black Hills and Iowa-Nebraska areas.

Editorials and reviews complete the number.

THE leading article in the *American Naturalist* for February, is by Dr. W. H. Dall, and discusses 'The Proposed University of the United States and its possible Relations to Scientific Bureaus of the Government.' Dr. Arthur Hollick continues the consideration of 'The Relation between Forestry and Geology in New Jersey,' this paper giving 'The Historical Development of the Flora,' concluding that the gradual extinction of the gymnosperm type is indicated. Professors J. H. Comstock and J. G. Needham also continue the subject of 'The Wings of Insects,' the chapter being devoted to the specialization of wings by addition as illustrated by the venation of the wings of Ephemerida. Under the title of 'The Peneplain: a Review' Dr. R. A. Daly considers at length Professor Tarr's objections to the exist-