tidal on- and offshore and the alongshore actions:

I. West coast of Florida (Coast Survey, 180, 181).

II. West coast of Schleswig-Holstein (Topographical map of the German Empire, 1:100,000, 5, 11, 20, 21, 35, 36, 37, 55, 56, 79, 80, 109, 110, 111).

III. Georgia-South Carolina coast (Coast Survey, 152, 153, 154, 155, 156).

IV. North Carolina and New Jersey coasts (Coast Survey, 148, 149; 123).

V. New Jersey, Virginia, North Carolina coasts (Coast Survey, 122; 138; 145, 146, 147).

VI. Texas coast (Coast Survey, 210, 211, 212).

MARCH 17, 1896.

1. *Exhibition of New Lantern Slides*, by J. B. WOODWORTH.

2. *Note on Penning's Field Geology*, 2d. edition, reissue of 1894, by T. A. JAGGAR, JR.

This book (published by Bailliere, Tindall and Cox, London) and A. Geikie's 'Outlines of Field Geology' (Macmillan, 1891) are the only books known to the writer which purport to deal with practical field methods of geology. Geikie's book is more popular in style, more elementary and more comprehensive; his chapter on the schistose rocks is excellent, while Penning does not even mention them. Penning's book, on the other hand, contains many useful tables, rules for finding true dip, tracing boundary lines and faults, levelling etc. The directions for note taking do not include mention of the coördinate method of designating points on the note-book map, nor is the use of the plane-table mentioned; in these and other respects the book is not up to date for the American geologist, but on the whole the part which deals with geological surveying, sections and levelling contains much that is useful. The part devoted to paleontology by Jukes-Browne contains many useful hints for the collector, and tables of fossils that are of course intended for use in British fields. Part V. is suggestive, dealing with some difficulties likely to be encountered by the student in the field, notes on water supply, springs and wells; stress is laid on the great importance of the study of physical features in connection with geological struc-

ture. The weakest chapter in the book is that devoted to lithology, which gives elaborate and antiquated tables of physical tests for minerals, rocks and ores, but does not touch on the difficulties likely to beset the student in the field. Mr. Penning believes "it should be unnecessary to insist upon what all geological text-books so strongly recommends, that an acquaintance with the appearance and characteristics of all ordinary rocks and minerals should be formed by careful study of cabinet specimens." He believes that "tests applied in their proper order," according to his tables, "will go far enough to arrive at an accurate solution." Rutley's 'Study of Rocks' (1879) is quoted as 'an important work, recently published,' while in the lithological bibliography no mention is made of such books as Teall's 'British Petrography' or the English translation of Rosenbusch.

T. A. JAGGAR, JR.,
Recording Secretary.

THE PHILOSOPHICAL SOCIETY OF WASHINGTON.

THE 450th meeting was held on March 14, 1896. The paper of the evening was read by Hon. Carroll D. Wright, Commissioner of Labor, on 'The Factory System as an Element in Civilization,' showing that the factory elevates the low class of persons which it employs by compelling them to think more and be more orderly and careful than they otherwise would.

BERNARD R. GREEN,
Secretary.

THE TORREY BOTANICAL CLUB, MARCH 25, 1896.

IN the absence of the President the chair was occupied by Dr. T. H. Allen, first Vice-President, and there were present 39 persons.

Two new members were elected, and W. A. Bastedo appointed to act as Secretary during the absence of Dr. Rusby in South America.

As the summer season is now rapidly approaching, a 'Field Committee,' with Dr. N. L. Britton as chairman, was appointed to arrange for the weekly outings of the club.

The announced paper on Azaleas was postponed owing to the unavoidable detention of Mr. H. A. Siebrecht in the Island of Trinidad.

A new fascicle of the 'Distribution of North American Algæ,' by Collins, Holder and Set-

chell was shown and commended by Dr. Britton. Also a sedge *Reimaria maritima*, only lately found in Florida at Lake Worth, but having a wide distribution elsewhere.

The announced paper for the meeting was read by Miss Alexandrina Taylor, entitled 'A comparative Study of the superficial Periderm in a number of species of *Salix*,' and was well illustrated by diagrams. In most text-books the work of Sanio is taken as authority on the development of superficial periderm. From the large number of species of the genus *Salix*, he selected one as a type. The many variations from this type pointed to the possibility that, by extending the study over a greater number of species than those studied by Sanio, one might be found which might more justly be called the type of the genus. This was the object of the above study.

W. A. BASTEDO,
Recording Secretary pro tem.

WEST VIRGINIA ACADEMY OF SCIENCE.

THE fifteenth regular meeting of the Academy, which was also the first annual session of the organization, was held at Morgantown, March 24, 1896.

The following officers were reëlected:

President, Dr. A. D. Hopkins; Vice-President, Prof. Thos. C. Miller; Secretary and Treasurer, Mr. W. Earl Rumsey; Corresponding Secretary, Prof. B. H. Hite.

The President, in referring to the history and first year's work of the Academy, stated that the Academy was organized on February 25, 1895, with sixteen active members and twelve associate members, representing chemistry, physics, geology, biology, entomology, mechanical and civil engineering, zoölogy, medicine, agriculture, horticulture and general science.

Fourteen regular sessions of the Academy have been held, twenty-eight communications have been presented, and three important resolutions have been passed. The communications referred to the following subjects and branches of science:

Chemistry, 1; psychology, 3; electricity, 2; geology, 1; horticulture, 2; bibliography, 2; agriculture, 2; entomology, 2; mechanical engineering, 3; ornithology, 2; general science, 1;

anthropology, 1; botany, 1; civil engineering, 1; hydrography, 2; forestry, 2.

The resolutions were with reference to the publication of topographic maps, waterways and forest preservation.

The only communication presented at this meeting besides the President's remarks was by Prof. L. C. Corbett, who announced the completion and successful test of an improved *auxanometer*, which was exhibited at work. In explanation Prof. Corbett stated that the chief features of the machine are that all parts of the instrument are mounted upon a rigid base; the usual system of proportionate pulleys has been replaced by a simple lever of the first type, *i. e.*, where the fulcrum is between the power and the weight. The record is made in ink upon a paper-bound cylinder. The rate of the cylinder is retarded to a single revolution in 24 hours. The record of each day, therefore, appears as a platted curve rather than in the form of a spiral, as is the case with recording drums making a revolution each hour. The mode of attaching the *auxanometer* to the plant has been improved upon by substituting wooden forceps with relatively broad faces for the usual bent pin; this is again connected with the recording arm of the instrument by a fine wire instead of the usual cord. In this way the objectionable features of the system of weighted cords and pulleys are overcome.

W. EARL RUMSEY,
Secretary.

NEW BOOKS.

A Compendium of General Botany: MAX WESTERMAIER, translated by ALBERT SCHNEIDER. New York, John Wiley & Sons. Pp. x+299.

Natural History of Selborne: GILBERT WHITE, with an Introduction by EDWARD S. MORSE. Boston and London, Ginn & Co., 1896. Pp. xii+251.

The Psychology of Attention: TH. RIBOT, third revised edition. Chicago and London, Open Court Publishing Co. 1896. Pp. xii+120.

An Examination of Weismannism: GEORGE JOHN ROMANES. Chicago and London, The Open Court Publishing Co. Pp. ix+221. 35 cts.