the details of the equipment, their usual defects, accidents, shortcomings, and methods of remedy, as well as of their every-day management. It is an admirable bit of very useful book-making, and its notice in this place is entirely justified by its scientific character and completeness, as well as by its intrinsic value in its place and for its purpose.

R. H. T.

SCIENTIFIC JOURNALS.

THE *American Naturalist* for October opens with an article by Mr. John Murdoch, describing the relation between the Eskimos of Port Barrow, northwestern Alaska, and the animals of their country. Mr. G. W. Field's article on methods of planktology describing work carried out in The Rhode Island Experiment Station is reprinted from the Report of the Station. Mr. C. R. Eastman discusses some new points in Dinichthyid Osteology, and Professor Comstock and Dr. Needham continue their treatise on the wings of insects. There is a note on the variation of the teleutospores of *Puccinia windsoriæ*, by Mr. J. A. Warren, and editorially the plans for a marine biological station in Canada are discussed. Thirty-four pages are devoted to reviews of literature and scientific news.

Terrestrial Magnetism for September is almost entirely devoted to the recent International Conference on Terrestrial Magnetism and Atmospheric Electricity, reported in a recent issue of SCIENCE. A full account of the proceedings of the Conference is given, likewise the words of welcome addressed to those attending it by the President of Section A, Professor W. E. Ayrton, and the opening address of the President of the Conference, Professor A. W. Rücker. The following papers presented to the Conference are printed in full:

Establishment of Temporary Magnetic Observatories: W. von Bezold and M. Rykatschew.

Relative Advantages of Long and Short Magnets: E. Mascart.

Questions to be addressed to Magnetic Observatories: M. Eschenhagen.

Systematische Erforschung der Saecular Variation: A Schmidt (Gotha).

Magnetic Observations in the Azores: Albert, Prince of Monaco.

Mouvement diurne du pôle nord d'un barreau magnétique: J. B. Capello.

Expression of the Earth's Magnetic Potential: A. Schuster.

Earth Currents, Atmospheric Currents and Magnetic Perturbations: S. Lemström.

Interpretation of Earth Current Observations: A. Schuster.

Magnetic and Electrolytic Actions of Electric Railways.

SOCIETIES AND ACADEMIES.

ENTOMOLOGICAL SOCIETY OF WASHINGTON, OCTOBER 20, 1898.

UNDER the head of short notes and exhibition of specimens Mr. Pratt exhibited a specimen of *Phyciodes tharos* which had been taken at electric light at night. Mr. Schwarz showed a dry flower stem of the bear-grass showing the work of the Buprestid beetle *Thrincopyge ambiens* Lec., the single stem indicating the entire life history of the beetle, which works in the center and does not appreciably injure the plant. Some discussion followed upon the bear-grass and the allied Yuccas and Dasylirions of the arid region, more particularly in regard to the destruction of flower pod by cattle in spite of the especially protective growth. Mr. Heidemann showed three species of Aradidæ new to the District of Columbia, viz., *Aradus crenatus* Say, *A. breviatus* Bergr. and *A. inornatus* Stål., with comments upon their habits and characters. He also showed specimens of *Calisius pallices* Stål., from Florida, a species hitherto known only from South America and which must now be added to the fauna of boreal America. Mr. Ashmead remarked that he had found this last species under the bark of dead orange trees killed by frost. Mr. Howard called attention to an outbreak of the chinchbug upon the lawns in the city of Brooklyn during the months of July and August last, pointing out that the sudden appearance of this insect in enormous numbers in the center of a densely populated city, hundreds of miles from any previous point of destructive appearance and in the middle of a summer characterized by excessive precipitation and upon closely-cut lawns which had been frequently watered, afforded an instance entirely unprecedented in the history of the species.

Dr. Dyar read the first paper of the evening, entitled 'Notes on Acronycta and their Larvæ,' in which he spoke of a forthcoming work on these insects prepared by himself and Dr. J. B. Smith. He called especial attention to the fact that his own classification of the group from the larvæ coincided in a remarkable manner with Dr. Smith's classification of the group derived from the study of the adult characters only. He showed that the larvæ may be divided into three main groups, and illustrated his remarks by the exhibition of specimens.

Mr. Schwarz presented a communication on the insect fauna of southern Arizona. The aquatic and riparian insect faunas are well represented, but do not offer any distinguishing features in their mode of appearance or development. In many rivers and most of the creeks the water sinks below the surface of the ground for a longer or shorter period during spring and early summer, and in this period the insect fauna—imagos and larvæ—follow the moisture underground and remain dormant until the advent of the July and August rains. There is a small but interesting winter flora and fauna in southern Arizona, as exemplified by the canaigre plant (*Rumex hymenosepalus*) and the various insects infesting the same. Both the plant and the insect retire underground in February and remain dormant until the following October. The great increase of temperature from April until the end of June has but little influeuce upon the development of insect and plant life, and the insect fauna at this season is comparatively poor in species. By far the greater portion of insects, and among them the most characteristic species, do not appear before the beginning of the rainy season in July. Their appearance is governed not by the increase of temperature, but by the increase of humidity.

L. O. HOWARD,
Secretary.

THE NEW YORK SECTION OF THE AMERICAN CHEMICAL SOCIETY.

THE regular meeting of the New York Section of the American Chemical Society was held last Friday evening at the College of the City of New York, with an attendance of fifty-one members, Dr. Wm. McMurtrie presiding.

An informal report was made as to the progress in organizing a chemical club, in which it was stated that the matter is in the hands of a committee of which Dr. C. F. Chandler is chairman, and the subject is being actively canvassed.

The question of inviting the Society at large to hold the mid-winter meeting in New York was then taken up for discussion, and on final motion the vote was unanimous in favor of it, and committees of arrangements were ordered appointed.

The death of Dr. Bromwell was then announced and a brief sketch of his career presented.

The following papers were read:

(1) Aug. E. Knorr, 'An Extraction Apparatus with a Novel Accessory.'

(2) Albert C. Hale, 'A Statement of the Work accomplished at the General Meeting of the Section in Boston.'

(3) William McMurtrie, 'Some Records of the Year's Progress in Applied Chemistry.'

Dr. Hale stated that the membership of the Society is now 1,378; that of the Section 285, and that of the recently organized New England Section is already over 200, the new members elected since September 1st numbering about 60. The growth of the Boston Section has been phenomenal, and it is already one of the strongest.

Dr. McMurtrie's review of 'Progress in Applied Chemistry' was full of interesting material' and could well have been divided between two or more meetings, with time for digestion and discussion.

The next meeting of the Section will be held on the 11th of November, at which it is expected that a well known expert in the chemical technology of glass-making will be present and will read a paper.

DURAND WOODMAN,
Secretary.

ENGELMANN BOTANICAL CLUB.

THE Club met at the St. Louis Medical College on Thursday, September 22d.

Mr. C. H. Thompson presented some brief notes on the pollination of the species of *Thalia* native to the United States. In his study of the

flower structure, together with observations upon plants grown in the water gardens of the Missouri Botanical Garden and Tower Grove Park, he finds they are especially adapted to the visits of large bees. The flower is so constructed as to utilize these visits in effecting cross-pollination. The pistil is held under tension in a manner similar to the bowed stamens in *Kalmia* by one of the lower staminodia. This staminodium is folded about the pistil in much the same way that the keel of a papilionaceous leguminous flower surrounds the stamen column, though much more closely and tenaciously. One margin of the keel develops two bristles, the posterior of which is in the direct path to the nectary. This bristle proves to be highly sensitive, and transmits an impulse to the part of the keel clasping the pistil, allowing the latter to suddenly rise and coil in a spiral motion. Before the flower opens the anther cell dehisces and sheds its pollen on a viscid disc which is situated on a style immediately back of the stigma. The stigmatic surface itself forms a funnel-shaped excavation in the end of the pistil. When a bumble-bee alights on the broad petaloid staminodium which forms the platform of the flower it thrusts its beak directly forward, under the canopy-shaped upper staminodium, into the drop of nectar which is clearly visible. By this act the beak strikes the sensitive bristle, which in turn releases the pistil. This rises with a sweeping, spirally-coiling motion which brings the stigmatic surface in contact with the base of the bee's beak, scraping into it any pollen that may have been previously deposited there. Then in its further motion the pistil deposits more pollen, from the viscid disc, upon the bee's beak at the same spot previously scraped by the stigma. This is to be carried to another flower. Finally the pistil comes to rest with its stigma snugly buried in a little wall pocket formed by a fold of the inner surface of the upper staminodium, thus excluding any possibility of further deposits of pollen upon it. Immediately this takes place the petaloid staminodia begin to wither and so discourage any further visits of insects.

A discussion of the flora about Crêve Coeur Lake followed.

The Club met again on Thursday, October 13th, fifteen members present. Mr. J. B. S. Norton discussed the modes of branching found in Euphorbiaceæ, and explained the structure of the flower, illustrating his remarks with numerous specimens. Miss N. M. Gladfelter spoke on edible mushrooms, and exhibited some forty species collected in and about St. Louis on one afternoon. Professor W. R. Dodson reported upon some results of growing soy beans of different colors. By selection it was possible to reach two extreme forms as well as all of the intermediate stages.

HERMANN VON SCHRENK,
Secretary.

NEW BOOKS.

Elementary Botany. GEORGE FRANCIS ATKINSON. New York, Henry Holt & Co. 1898. Pp. xxiii + 444. $1.25.

Text-book of Algebra. GEORGE EGBERT FISHER and ISAAC J. SCHWATT. Philadelphia, Fisher & Schwatt. 1898. Part I. Pp. xiii + 683.

The Ice Age, Past and Coming. C. A. M. TABER. Boston. 1898. Pp. 101.

The Genesis and Dissolution of the Faculty of Speech. JOSEPH COLLINS. New York and London, The Macmillan Company. 1898. Pp. 432.

Elements of Sanitary Engineering. MANSFIELD MERRIMAN. New York, John Wiley & Sons; London, Chapman & Hall, Ltd. 1898. Pp. 216. $2.00.

L'Année biologique. 2d year, 1896. IVES DELAGE. Paris, Schleicher Frères. 1898. Pp. xxxv + 808.

Naturæ Novitates. Berlin, R. Friedländer und Sohn. 1898. Pp. 683. M. 4.

Wild Animals I have Known. ERNEST SETON THOMPSON. New York, Charles Scribner's Sons. Pp. 359. $2.00.

Organographie der Pflanzen. 2d vol., Specielle Organographie; 1st part, Bryophyten. K. GOEBEL. Jena, Gustav Fischer. 1898. Pp. xii + 385.

The Philippine Islands and their People. DEAN C. WORCESTER. New York and London, The Macmillan Company. Pp. xix + 529. $4.00.