covered a restricted ground and it goes without saying that he has done it well. In fact, it is difficult to see how it could be bettered. The volume is compact, abundantly illustrated, and contains nothing that is unnecessary. At the same time, it may almost be said that it omits nothing that is necessary, when we consider its especial objects. To cover the whole subject in a volume of less than 500 pages, using, at the same time, nearly 500 text figures, necessitates the most careful selection of material, yet so excellently has this been done and so happily has the text been prepared that there is on the one hand no appearance of forced condensation and on the other no semblance of superficiality. The illustrations for the most part have been borrowed, from which it results that there is great lack of uniformity in their excellence, some of them being extremely good and others very poor. The author evidently endorses the idea that a poor illustration, if not absolutely incorrect, is better than none. Nevertheless, it seems to us that such figures as those of *Agallia sanguinolenta*, *Anasa tristis*, *Necrophorus Americanus*, *Silpha Americana*, *Edema albifrons*, *Cacoecia rosaceana*, *Bibio albipennis*, *Ceraphron triticum* and perhaps a dozen others, should have been redrawn for a work of so many other excellencies. The author has made use of photography in some of his illustrations, but it must strike every one in glancing at his plate of bees, for example, that this method of illustration is only of value where great pains have been taken with the prior mounting and preparation of the subject.

These slight blemishes, however, detract little from the value of the book, which will undoubtedly soon be in the hands of every teacher of economic entomology in the country, and, let us hope, of very many of the rapidly growing class of scientific farmers and fruit growers.

L. O. HOWARD.

SOCIETIES AND ACADEMIES.

NEW YORK ACADEMY OF SCIENCE; BIOLOGICAL SECTION, OCTOBER 12, 1896.

DR. BASHFORD DEAN and Mr. G. N. Calkins presented preliminary reports upon the results attained at the Columbia University Zoological Laboratory at Port Townsend, Washington. The expedition spent about six weeks in exploring and collecting, and brought home large collections from exceptionally favorable collecting grounds. Dr. Dean spent some time at Monterey, Cal., and brought home collections of eggs and embryos of *Chimaera* and *Bdellostoma*.

Dr. J. L. Wortman made a preliminary report upon the American Museum Expedition to the Puerco and Wasatch beds. He reported finding a connecting link between the close of the Cretaceous and the beginning of the Tertiary. He gave an interesting account of the massive ruins of the so-called cliff dwellers in the region visited by him. In the Big Horn basin the expedition had remarkable success, as well as in the Wind River basin.

Prof. Osborn stated that with the collections made this summer the American Museum could now announce that their Eocene collection was complete, containing all mammals now known in the Eocene; that their collection from the Wasatch bed was the finest in existence and that from the Wind River basin was complete; the Bridger was represented by all but two or three types, and fine collections have been made in the Uinta.

Mr. W. J. Hornaday made a report of a tour of inspection of foreign zoological gardens, made under the auspices of the New York Zoological Society. He visited fifteen gardens in England and on the Continent, studying the features of excellence in each.

Prof. Bristol gave a brief account of the progress at the Marine Biological Laboratory at Wood's Holl, Mass., during the past summer.

Prof. Osborn offered the following resolution on the death of Prof. G. Brown Goode, after paying a tribute to his memory:

Resolved, That the members of the Biological Section of the New York Academy of Sciences desire to express their deep sense of loss in the death of Prof. G. Brown Goode, of the U. S. National Museum. In common with all naturalists in this country, we have admired his intelligent and highly successful administration of the National Museum, as well as his prompt and ready response to the requests and needs of similar institutions throughout the country.

In face of the arduous and exacting duties of his directorship he has held a leading position among American zoologists and we are indebted to him for a

series of invaluable investigations, especially upon the fishes.

Those of us who had the good fortune to know Prof. Goode personally recall his singular charm of character, his genial interest in the work of others, his true scientific spirit. We have thus lost one of our ablest fellow-workers and one of the truest and best of men.

The resolution was adopted unanimously by a rising vote.

CHARLES L. BRISTOL,
Secretary.

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

THE annual meeting of the New York Section of the American Chemical Society was held at the College of the City of New York on Friday, October 9th, at 8:15 p. m.

The following officers were elected: Dr. Wm. McMurtrie, chairman; Dr. Durand Woodman, secretary and treasurer; Dr. Charles A. Doremus, Prof. A. A. Breneman, Dr. Albert C. Hale, members of the executive committee; Dr. Wm. McMurtrie, Dr. Chas. F. McKenna, Dr. Chas. A. Doremus, delegates to the Scientific Alliance of New York.

Papers were read and discussed as follows: On 'Some Disputed Points about the Light of Carbon,' by Woodbridge H. Birchmore. On 'The Conversion of Cows' Milk into a Substitute for Human Milk,' by Henry A. Bunker.

Committees were appointed to cooperate with other scientific bodies in New York for the purpose of securing a lecture from Prof. Henri Moissan before his return to France, and to arrange the programs for the meetings of the Section during the year.

The prospects of the Chemical Club were reported as very encouraging.

DURAND WOODMAN,
Secretary.

THE ACADEMY OF SCIENCE OF ST. LOUIS.

AT the meeting of the Academy of Science of St. Louis, held October 19, 1896, Mr. Trelease exhibited living flowers of *Catasetum Gnomus*, demonstrating the extreme irritability of their tentacles and the precision with which the pollinia become attached to any object touching either tentacle. Mr. J. B. S. Norton presented a list of the Ustilagineæ of Kansas, together with the result of germinations of about one-half of the entire number. Three persons were elected to active membership.

WILLIAM TRELEASE,
Recording Secretary.

SCIENTIFIC JOURNALS.

THE AMERICAN GEOLOGIST, OCTOBER.

Dinicthys Prentis-Clarki: E. W. CLAYPOLE. A new species of this interesting genus of Devonian fishes is described.

The Fort Union Formation: WALTER HARVEY WEED. The conclusion long ago expressed by Newberry now seems to be definitely settled, viz., that the Fort Union beds are lower Tertiary and entirely distinct from the Laramie proper which is upper Cretaceous. The series in Montana is as follows; beginning with the lower Laramie (= Cretaceous), Livingston (transition), Fort Union (Eocene).

N. H. Winchell and U. S. Grant describe a volcanic ash from the north shore of Lake Superior. The existence of such deposits in this region has generally been doubted. No craters or vents have as yet been located.

A very complete synopsis of the geological papers presented at the Buffalo meetings of the Geological Society and the American Association is given by Warren Upham.

The 'Augen' Gneiss area, Pegmatite veins and Diorite dikes at Bedford, N. Y., are described at length by Luquer and Ries. The 'augen' are considered as the result of metamorphism by pressure of granitic or aplitic rocks, together with a granulation of the minerals from shearing, the unsheared portions of the rock remaining as 'augen.' The pegmatite veins and diorite dikes are of later origin as their component minerals are in their normal condition without signs of dynamic action.

James M. Safford notices a 'New and important source of Phosphate rock in Tennessee.' It differs conspicuously from any other deposit in the State in not being an original rock deposit, but one which has been produced by the leaching out of limestones rich in phosphates. This has raised the percentage of calcium phosphate to from 60 to 80 per cent. The age of these deposits is determined to be Trenton and their thickness ranges from three to eight feet.