In two minor points the list is fairly open to criticism, namely, in the abbreviation of authorities and references, and in the emendation of names. Even those familiar with the literature will find difficulty in recognizing Ogilby in 'Og.,' Brants in 'Bts.,' Hemprich and Ehrenberg in 'H. & E.,' or in telling whether 'Sm.' stands for Smith or Smuts. In most cases Mr. Thomas has followed the original spelling of a name, but apparently with some hesitation, for he finds it necessary to apologize for *Aplodontia*, stating that he looks 'with loathing on these h-less names.' He has, however, adopted the emended forms *Echinomys* for *Echimys*, *Cannabateomys* for *Kannabateomys*, *Pithecochirus* for *Pithecheir*, and *Acodon* for *Akodon*, although in a paper subsequently published he has reverted to the original spelling, *Akodon*.

There is opportunity for much divergence of opinion as to the sequence and relative rank of the groups, for example, as to the wisdom of reducing the Lophiomyidæ to a subfamily of the Muridæ, while giving *Pedetes* and the American Porcupines full family rank. Some may question the removal of the Batherginæ from the Spalacidæ to form a separate family placed after the Geomyidæ and Heteromyidæ, so that the Old World genera *Spalax* and *Bathyergus*, which were formerly arranged side by side, are now separated by two families of New World pouched gophers and pocket mice: Possibly, it may seem that the author has recognized a relatively large number of genera of Muridæ, in view of the statement that all the recently proposed genera of Geomyidæ "may be most conveniently treated as of subgeneric rather than generic rank, sound as their basis as natural groups no doubt is."

But whatever difference there may be in regard to minor points, the fact remains that this paper admirably fulfills its purpose as a check list of genera of Rodents. We may venture to hope that the field having now been cleared to a certain extent of nomenclatural difficulties, Mr. Thomas will soon undertake the work which has so long been needed, namely, a complete catalogue of the Rodentia.

T. S. PALMER.

WASHINGTON, D. C.

SOCIETIES AND ACADEMIES.

NEW YORK ACADEMY OF SCIENCES—BIOLOGICAL SECTION, APRIL 5.

PROFESSOR OSBORN moved that a committee be appointed to consider and take action on the question of postage on natural history specimens. The chair appointed Doctors Dyar and Dean and Professor Stratford. Professor Bristol offered his resignation as Secretary. It was accepted, and the election of his successor was laid over until the next meeting.

Professor Osborn reported upon the phylogeny of the early Eocene Titanotheres, showing that they are divided into two distinct series, included under the genera *Telmatotherium* and *Palæosyops*, both of which independently acquired horns. The Telmatothere line begins with *T. boreale*, a form which Cope referred to as Palæosyops. It is distinguished by animals with long narrow skulls and high stilted feet, and undoubtedly represented the upland types of the family. The Palæosyops line, as suggested by Earle and Hatcher, passes through *P. laticeps* and *P. manteoceras*, and leads up to Diplacodon, the larger species of which surpass in size the smaller Titanotheres of the Oligocene. The main line gives off several collaterals, such as *P. paludosus*. Lambdotherium does not belong in the Titanothere phylum at all.

A second note related to a division of the two groups of placental mammals, the Meseutheria and Ceneutheria. The former, since Wortman's demonstration that the Ganodonta are ancestral Edentates, must now embrace this division, besides the Creodonta, Lemuroidea, Tillodontia, Insectivora, Amblypoda and Condylarthra.

The third note related to the origin of the typical mammalian types of teeth among the Theriodonta, Cynodontia and Gomphodontia of the Triassic. It is especially noteworthy that the Gomphodontia afford a demonstration of the origin of multituberculate teeth from a tritubercular ground plan, as hypothetically assumed by the speaker some years ago.

Mr. Bradney B. Griffin reported that in Thalassema (one of the Echiurids) the spireme occurs in minute ova (3 micra in diameter) floating in clusters in the body cavity. The spireme segments into one-half the somatic

number of chromosomes, which by partial longitudinal splitting pass into flattened ellipses. These elongate, and during the growth period become twisted and distorted, and their true shape is thereby obscured. While entering the first polar spindle they appear as loose open rings or compact rods (bivalent). These by concentration and looping up form crosses, opposite arms of which are attached to the 'Zugfasern.' During metaphase the crosses become drawn ont into flattened ellipses which split across into two V's with closely apposed limbs. At telophase the latter separate at the angle and diverge in the second polar mitosis. No longitudinal splitting of the V's occurs.

In Zirphæa (Lamellibranch) the process is identical, although more obvious by reason of the less close apposition of the halves of the rings and V's. The conclusion is that in both forms a reducing division takes place.

Mr. J. H. McGregor offered a preliminary report on the development of the Spermatozoa in Amphiuma. Professor F. E. Lloyd's paper on Pholadidæa of the Pacific Coast was read by title.

C. L. Bristol,
Secretary.

MAY 3, 1897.

Mr. Gary N. Calkins, of Columbia University, was elected Secretary of the Section.

In the absence of Dr. Dyar, chairman of the committee appointed to consider the question of postage on natural history specimens, Professor Stratford reported that the Postmaster-General had been notified, and that the matter had received due consideration.

Upon behalf of the committee appointed to draw up a resolution relating to the death of Professor Cope, Professor Osborn delivered a brief eulogy of the great naturalist, pointing out the especial features which have made his work famous and have given him such a high position in the history of natural science. He dwelt especially upon the fact that Professor Cope prosecuted five great lines of work simultaneously, and that in each he acquired a commanding position. He also spoke of some of his generous qualities as a fellow scientific worker, especially his liberality in the loan of collections and generous recognition of the work of others. Finally, he alluded to his remarkable independence and fortitude of character, and persistent devotion to science, even with limited resources. His death leaves a vacuum especially in the line of able and accurate criticism of contemporary work. Professor Osborn concluded by submitting the following resolution:

The members of the New York Academy of Sciences desire to record their admiration of the noble services to science of the late Professor Edward D. Cope. Since 1895, when he offered his first contribution to the Philadelphia Academy of Sciences, at the age of nineteen, he has been a devoted and brilliant investigator in five great branches of natural history—ichthyology, herpetology of the batrachians and reptiles, mammalian paleontology, historical geology and philosophy. In each he has long been an acknowledged leader, and his combined knowledge of all has given his researches a philosophical breadth, grasp and permanence which place him among the great masters of comparative anatomy—Cuvier, Owen and Huxley. We deeply regret that his untimely death has cut short his life work, and feel that the loss of his keen, critical and productive faculty deals a blow to the cause of comparative anatomy of the vertebrata throughout the world, which can hardly be measured. We tender to the American Philosophical Society and to the Academy of Natural Sciences of Philadelphia, of which Professor Cope was a life-long member, an expression of our deep regret at their loss, and of our readiness to cooperate with them in the establishment of some suitable memorial.

Signed: Henry F. Osborn.
J. L. Wortman.

Mr. H. E. Crampton, Jr., gave a brief abstract of a paper by F. C. Baker on 'Notes on Variations in the apex of Gasteropod Molluscs.' Professor Bashford Dean and Mr. F. P. Sumner reported on the spawning habits of *Petromyzon Wilderi* at Van Cortlandt Pond. Mr. H. E. Crampton, Jr., reported on some Coalescence Experiments with Lepidoptera. A paper on the 'Vertical Distribution of Plankton in Deep-Sea Collections from Puget Sound,' by Professor James I. Peck and N. R. Harrington, was read by title.

G. N. Calkins,
Secretary.