

Pterostichus and *Pseudomorpha* very strongly asymmetric. In *Carabus*, *Calosoma* and *Cychrus* they are symmetric, and also in some families allied to the *Carabidæ*. He considers these parts will furnish useful clues to the relationship of families and smaller groups.

DR. C. WESENBERG LUND, who has been studying the habits of caddice flies has recently published two articles on the larvæ. In one¹ he describes and figures the nets of most of the Hydropsychidæ found in Denmark, and also describes the structure of the larvæ. He considers the Rhyacophilidæ an ancient family, and the Hydropsychidæ a more recent and highly specialized one.

In the second article² he gives an account of the life-history and larval habits of a large and common caddice-fly. The carnivorous larva builds a spiral case of parts of leaves or sticks, which is gradually enlarged and lengthened as the creature increases in size.

Useful bibliographies accompany each paper.

DR. N. ANNANDALE has described³ a new genus (*Ramcia*) which is intermediate between the true mosquitoes and the series of genera known as *Corethinæ*. The proboscis is short and weak, but the veins of wings bear prominent scales, and the entire wing-margin is provided with a fringe of long scales. There are no scales on the thorax. The larva and pupa are also described, being related to *Corethra*. The single species comes from Ceylon.

AMONG recent fascicles of the "Genera Insectorum" of M. Wytsman, a number are of interest to us. Fascicle 110, by H. Schmidt,

"Biologische Studien über netzspinnende Trichopterenlarven," *Intern. Rev. Hydrobiol. Hydrog.* (Biol. Suppl., III. Ser.), V., pp. 1-64, 1911, 5 pls.

"Ueber die Biologie der *Phryganea grandis* und über die Mechanik ihres Gehäusebaues," *Intern. Rev. Hydrobiol. Hydrog.*, IV., pp. 65-91, 2 pls., 1910.

"A New Genus of Short-beaked Gnats from Ceylon," *Spolia Zeylanica*, VII., pp. 187-193, 1 plate, 1911.

is on the Aphodiidæ (part of the old Scarabæidæ), 155 pp., 3 pls.; fasc. 111, by Max Hagedorn, on the Ipidæ (Scolytidæ), 178 pp., 14 pls.; three of the plates show galleries and four show structural details; fasc. 113 on the Ortalid flies of the sub-family Richardinæ, 56 pp., 3 pls.; fasc. 114, by G. V. Szepligeti, on part of the ichneumon flies of the Ophioidæ, 100 pp., 2 pls.; fasc. 115, by R. Martin, on the Æschninæ, 34 pp., 5 pls.; fasc. 116, 117, by P. Dupius, on two small groups of Carabidæ; fasc. 118, by C. Emery, on the ants (Formicidæ) of family Ponerinæ, 125 pp., 3 pls.; fasc. 119, by J. A. G. Rehn, on the Mantid sub-family Vatinæ, 28 pp., 1 pl.; fasc. 120, by A. N. Caudell, on a small group of Locustidæ; fasc. 121, by W. D. Pierce, on the Strepsiptera, 54 pp., 5 pls.

NATHAN BANKS

SPECIAL ARTICLES

NOTICE OF A NEW GENUS OF RHINOCEROS FROM THE LOWER MIOCENE

DURING the past few years, several of the many collectors from various institutions, who have collected in western Nebraska and eastern Wyoming, have found fragments of a very large rhinoceros in the Harrison beds, which occur in that region. Mr. E. S. Riggs, of the Field Museum of Natural History, of Chicago, found certain upper molars which he took to be those of some primitive species of *Teleoceras*. But all of these "finds" have been quite fragmentary, and no particular attempt has been made to accurately classify them.

The writer had the good fortune last summer to find additional material of this type, and upon careful examination is convinced that a new genus—or at least a new subgenus—is here represented.

Epiaphelops virgasectus, gen. et sp. nov.

Dental formula, $M_3^?$, $P_4^?$, $C_0^?$, $I_1^?$. Type No.

H C 265, collection of the writer. The specimen taken as the type is a right lower jaw, with complete dentition, and the anterior part of the left lower jaw.

Epiaphelops is separated from *Aphelops*, to

which genus it appears most nearly related, by (1) the presence of a functional P_1 of good size. This tooth is absent in *Aphelops*; (2) by a much more brachyodont dentition; (3) by the presence of a heavy external and internal cingulum on all teeth of the grinding series, but the last molar, where it is reduced.

This brachyodont condition, as compared with *Aphelops*, corresponds to the difference in horizon, assuming them to be in the same approximate ancestral line. The typical *Aphelops megalodum* is from the Middle Miocene, the present genus and species from the Lower Miocene.

Epiaphelops does not appear to be derivable from *Cænopus*, as in all known species of *Cænopus* the first lower premolar is absent, or a vestigial, variable, character. In this respect *Epiaphelops* is more primitive than *Cænopus*, as P_1 is large and functional. Comparison with other Oligocene types does not appear profitable.

Epiaphelops virgasectus is somewhat larger than *Aphelops megalodum*. As the other specimens in the collection of the writer referable to this type are not surely associated, they are best unpublished for the present, but suffice it to say that when this form is better known, other characters are present which will more clearly characterize it. A more complete description will appear later.

HAROLD JAMES COOK

AGATE, NEBRASKA,
December 20, 1911

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

SECTION A—MATHEMATICS AND ASTRONOMY

As the Astronomical and Astrophysical Society of America held a regular meeting in affiliation with the American Association, and as the American Mathematical Society held its annual meeting at the same time in New York City, the special program of Section A was confined to one session. This was a joint session with the Astronomical and Astrophysical Society, and the program consisted of the vice-presidential address by E. H.

Moore, of the University of Chicago, and of two papers given, on special invitation, by J. A. Metcalf and Lewis Boss.

An abstract of the paper by Lewis Boss, entitled "Recent Researches as to the Systematic Motions of the Stars," is as follows:

The proper motions of stars are so small, and are so difficult to measure with proportionate accuracy that the successful determination of systematic peculiarities in the arrangements of the motions themselves must depend upon great systematic accuracy in the measurements of those motions. Therefore, when the department of meridian astrometry was established at the Dudley Observatory about six years ago with the support of the Carnegie Institution of Washington its first work of investigation was to continue to completion the work it had begun with the object of ascertaining the proper motions of the brighter stars which had been most observed with precision in the past, with all practicable completeness and accuracy, both in the casual and systematic sense, with the ultimate purpose of making this work the basis of studying the systematic peculiarities of these motions in order to throw further light on the mechanism of the visible universe.

About two years ago the Carnegie Institution of Washington published the result of this research in a volume entitled "Preliminary Catalogue of 6,188 Stars." For each star the position was given for 1900 together with the proper motion, etc., necessary for reducing those positions to any other epoch. This material was first employed for deriving new values of the precession as well as the direction of solar motion. The latter was found to be, for 1875: R.A. $270^\circ.7$, Decl. $+34^\circ.3$ (A.J. 614). The stars employed in this discussion cover the entire sky from the north to the south pole; so that the direction of the solar motion came out with very great weight and at the same time independently of the precession.

Next were deduced the facts in regard to an interesting moving cluster of stars in the constellation, *Taurus*. Each of the 41 stars appears to be moving toward a point in the sky in R.A. $6^h 7^m$, Decl. $+7^\circ$. The velocities of motion of the several stars are approximately the same. Very recently Mr. Benjamin Boss, of the department of meridian astrometry, identified a group of 11 or 12 large proper motions scattered widely over the sky between declinations $+42^\circ$ and -81° , which converge nearly in a point at R.A. $6^h 37^m$, Decl. $+0^\circ.5$. The velocities of these stars toward the point cited seem to be uniformly about 95