The report is weak in its discussion of fossil peat, only two or three occurrences being briefly mentioned. It is very probable, however, that there are no deposits of this sort in the state which are not too small or too deeply buried to be of commercial value. At the same time, the reviewer's experience in the southern states shows that Pleistocene or older peats are more wide-spread, if not more extensive individually, than recent peats, and their botanical records are often of the greatest value. For example, such a deposit just across Perdido Bay from Florida contains not only ancestral forms of *Nyssa, Hicoria* and live-oaks, but abundant remains of the genus *Trapa,* which is unknown in the existing flora of the western hemisphere.

EDWARD W. BERRY
JOHNS HOPKINS UNIVERSITY

NOTES ON ENTOMOLOGY

AMONG the recent parts of the "Catalogus Coleopterorum" are part 19—Staphylinidæ (1), by A. Bernhauer and K. Schubert; part 20—Aphodiinæ, by A. Schmidt; 21—Gyrinidæ, by K. Alwarth; 22—Tenebrionidæ (2), by H. Gebien; 23—Cleridæ, by S. Schenkling; 24—Histeridæ, by H. Bickhardt; 25—Cebrionidæ, by K. W. von Dalla Torre, and 26—Scraptiidæ and Pedilidæ, by M. Pic.

A NEW French entomological journal is *Insecta, Revue Illustrée d'Entomologie,* published by the entomological station of the faculty of sciences of Rennes, F. Guitel, editor. It is a monthly, and the first number contains articles on orthoptera, coleoptera and economic entomology; all the systematic articles are illustrated.

THE peculiar larval cases of the Cryptocephalidæ and the remarkable larvæ of the Cassidæ with their highly modified tails have always been entertaining subjects with coleopterists. Mr. Karl Fiebrig has added greatly to this interest by his article on these insects.[1] The life history of a number of South American species is given more or less completely, and the plates (partly colored) illustrate many details of structure.

MR. A. M. LEA is the author of an interesting article on the beetles occurring in ants' nests in Australia and Tasmania.[2] Although the paper is a systematic one, there are notes on the habits and occurrence of many of the species. Most of the species belong to the Pselaphidæ; many are new; there are 23 species of *Articerus* and 14 of the curious long-legged Histerid—*Chlamydopsis.* A new family is based on a new genus, *Tretothorax,* placed between the Rhysodidæ and Cucujidæ; the mouth-parts are entirely concealed by the broad mentum, the hind tarsi four-jointed, the others five-jointed; it is a slender insect, with short and broad antennæ.

THE first part of the work on the aquatic flies of Germany is issued, the author being Dr. K. Grünberg.[3] This part includes all the diptera with aquatic larvæ except the Chironomidæ, which will be treated in the second part. There are synoptic tables to the genera and species and in many cases to the genera of the larvæ as far as known. Since many of the genera and a number of the species also occur in the United States, the book will be of considerable use to Americans. The arrangement of the Culicidæ is that generally followed a few years ago.

THE twenty-fourth lieferung of "Das Tierreich" is on the hymenopterous gall-flies (Cynipidæ), and is by Dr. K. W. von Dalla Torre and Professor J. J. Kieffer; 891 pages, 420 figs. About 1,200 species are treated; the genera are used in a broad sense, many recent segregates being sunk as synonyms, or subgenera. Tables are given for the galls of the old and new world. In the back is a list of genera, with references, derivation and originally included species.

[1] "Cassiden und Cryptocephaliden Paraguays, irhre Entwicklungsstadien und Schutzvorrichtungen," *Zool. Jahrb. Supp.,* 12, heft 2, pp. 161–264, 5 pls., 1910.

[2] "Australian and Tasmanian Coleoptera Inhabiting or Resorting to the Nests of Ants, Bees and Termites," *Proc. Roy. Soc. Victoria,* XXIII., pp. 116–230, 3 pls., 1910.

[3] "Die Süsswasserfauna Deutschlands," Heft 2A, Diptera, Jena, 1910, pp. 312, 348 figs.

The November–December number of the Hungarian entomological journal—*Rovartani Lapok*—is a jubilee number in honor of Alex. Mocsary, for his forty years' service in the Hungarian National Museum. Most useful is a list of his numerous publications. A list of species (65 in all) that have been named in his honor is given, to which various friends add new species in all orders in this number of the journal.

Mr. C. C. Ghosh has published an account of the life-history of a neuropterid fly—*Croce filipennis*.[4] These delicate insects are but little known, and a figure of Savigny had long done duty as the only known larva of the family. The larva of *Croce* is very similar to that of Savigny, with a large *Chrysopa*-like head and jaws and an extremely slender prothorax; the abdomen broad and flat. They live in houses in India, and feed on silver-fish and bed-bugs. The pupa is formed within a spherical cocoon; the larval stages last for nearly a year, and the adult appears for only a few days in April.

Dr. E. Mjoberg is the author of a long article on morphology and classification of the biting and sucking lice.[5] A number of species are described as new, mostly from the old world, and several new genera. One, *Neohæmatopinus,* is made for *Hæmatopinus sciuropteri* Osborn. He concludes that both Anoplura and Mallophaga should be included with the Psocidæ in the Corrodentia, as three subequal groups; the Anoplura more closely related to the Mallophaga than either to the Psocidæ. A useful bibliography is appended.

Carl Henrich has published a large paper on German plant-lice which will be of use to our students of these insects.[6] He divides the family into the usual six tribes, but appears to be unfamiliar with some of the recent generic changes.

Dr. N. J. Kusnezov brings up cases of probable viviparity in certain pierid butterflies of northern Russia.[7] In examining the anatomy of certain pierids (*Colias*) he found fully developed larvæ in the lower part of the oviduct, and no chlorion around them. These larvæ were bent double, with the head toward the aperture. He therefore concludes that at least sometimes the larvæ are born alive, or at least so far advanced that the eggs hatch very soon after deposition. The reason for this intrauterine development of the embryo he believes is the short season in the northern localities. Two species of Tineids have been recorded as viviparous.

Nathan Banks

[4] *Journ. Bombay Nat. Hist. Soc.*, 1910, p. 530.

[5] "Studien über Mallophagen und Anopluren," *Arkiv f. Zoologi*, Vol. VI., No. 13, 296 pp., 5 pls., 1910.

[6] "Die Blattläuse, Aphididæ, der Umgebung von Hermannstadt, mit einem Index und Figurenerklarung," *Verh. Mitt. Siebenb. Ver. f. Naturwissensch. zu Hermannstadt,* LIX., pp. 104, 1 pl., 1910.

[7] "On the Probable Viviparity in some Danaid, *i. e.*, Pierid Butterflies," *Hor. Soc. Ent. Ross.*, XXXIX., pp. 634–651, 1 pl., 1910.

SPECIAL ARTICLES

PROTECTIVE ENZYMES[1]

In this preliminary paper the authors will bring together the results which thus far show some important relations and reactions carried out by certain protective enzymes of fruits. This work originated in the efforts of one of us (Cook) to determine the toxicity of tannin. It is well known that tannin is one of the most abundant of plant products, and it has been repeatedly stated that it occurs in green fruits. Although the work referred to above gave very definite results on the toxicity of tannin, it became evident that there was some factor or factors in the living fruit which had not been taken into consideration, making it necessary to attack the problem from the biochemical standpoint.

Pomaceous fruits were most satisfactory for our purpose, although the fruit of the tomato and other plants were also used. As the work progressed many difficulties presented themselves, such as the uncertain and more or less unreliable methods for quantitative determination of tannin.

[1] By permission of the Delaware Agricultural Experiment Station.