

and large institutions, where, of course, it may only be borrowed.

Wheeler's lists of the genera and their types (1911 and 1913) were therefore of great value, although incomplete and even more inaccurate than Emery's in the "Genera Insectorum".

The recent publication of Donisthorpe's "List of the Type species of the Genera and Subgenera of the Formicidae" (*Ann. and Mag. Nat. Hist.*, ii, 10, 617, 649, 721; 1943) is therefore an event of considerable importance. For the first time there is an authoritative, complete (so far as is known) and easily obtainable list of the genera and subgenera of ants. Furthermore the tribe, subfamily and also, where it occurs, synonymy of each of the genera listed are given. The type species are listed in each case, together with the type locality.

It is difficult to review such a list without entering into detail which would be out of place here, but which I hope to discuss elsewhere. A few points may, however, be mentioned. The use of the generic name *Lasius* Fabr., a synonym for *Acanthomyops* Mayr (five species of which are found in Great Britain), perpetuated by Wheeler and Emery, should now cease for good and all. Fabricius's name sinks on account of Jurine's earlier one. Ruzsby's subgenus *Lasius* (s.g. of *Lasius* Fabr. *Acanthomyops* Mayr.) also sinks to Morrice and Durrant's *Donisthorpea*. It is nice to see *Crematogaster* Lund for once spelt correctly and not as in Wheeler's "Ants" (1910) and Forel's "Social World of the Ants" (London, 1927) with an 's', namely, *Cremastogaster*, which is meaningless. Emery's mis-spelling of *Chtonolasius* Ruzsby (copied by Donisthorpe in his "British Ants", 1927) has also been corrected.

The function of nomenclature is to aid and simplify the work of the zoologist, not to confuse him and make his task more complex. It is a mechanism for handling the data appertaining to, and not a fundamental part of, biology, and as such the taxonomy of a group should be well-ordered, comprehensible and easily accessible. Donisthorpe is therefore to be congratulated on this attempt to produce order out of chaos and to make accessible that which has been beyond the reach of all but the experienced myrmecologist—in fact, Donisthorpe himself and less than half a dozen others in the world.

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PELAGIC FORAMINIFERA

WE owe much of our recent knowledge of the biology of the Foraminifera to Dr. E. H. Myers. His new publication* is a peculiarly beautiful example of his work, embracing the complete life-cycle of *Tretomphalus* and its activities observed both in Nature and in cultures. The life-cycle includes an orderly succession of sexual and asexual generations in which two distinct types of individuals and three types of tests are involved. Typically benthonic microspheric (asexual) and megaspheric (sexual) individuals are produced, the latter becoming pelagic prior to the discharge of the gametes. The test of the pelagic phase has a globular terminal chamber, perforated by large pores, and contains a gas-filled float, the gametes passing out of the pores. The zygotes are formed by the fusion of gametes from

different parents, the latter approaching one another and their amoeboid pseudopodia anastomosing—an unusual occurrence in the Foraminifera. This association ensures the fertilization of a maximum number of gametes, which settle on the bottom and produce microspheric tests. So the life-cycle proceeds.

Tretomphalus is shown to be significant only as a convenient category in which to place the pelagic stage of species which are now included in either the genus *Discorbis*, family *Rotaliidae*, or the genus *Cymbaloporetta*, family *Cymbaloporidæ*. Much confusion in nomenclature has been caused by the polymorphic nature of these tests, and this work should contribute largely to a more natural classification.

Observations on feeding show that swiftly moving organisms, such as nauplii, ciliates and veligers, are not captured, although these can be utilized as food when crushed and placed in the vicinity of the test. On the other hand, grazing on diatoms and other unicellular algae on the walls of the dish is usual, and inclusions of these can be seen in sections. Similar sections of material from the sea show that the natural food is the microflora both from the water or on the substratum fixed on the surface where the animals live.

Interesting accounts are given of the formation and growth of the tests. Under optimum conditions in cultures maintained at 20° C., about forty-two days are required for an asexually produced individual to form a test consisting of 13–17 chambers.

The illustrations which accompany this paper, both photographs and drawings, are of great beauty and clarity, and special mention should be made of the photograph of dispersal of the juveniles and the disintegration of the empty test of the microspheric individual which produced them: also the figure of the life-cycle of *Tretomphalus bulloides*.

RECENT AMERICAN ARCHÆOLOGY

EUROPEAN archaeologists are too often apt to forget that the prehistoric period continued in many parts of the world, America included, until about the day before yesterday. Moreover, just because the later time limit of the study is so recent, much more evidence can frequently be collected than in the case of the very remote cultures, and thus a picture in greater detail constructed. The fact, then, that Waldo R. Wedel's recent archaeological investigations in Platte and Clay counties, Missouri (United States National Museum, Bull. 183), deal with finds which in western Europe would be classed as post-medieval in date, does not make them any less interesting or less important. The interest and importance of the ruins at Zimbabwe in Southern Rhodesia were not lessened when it was shown that their date was anything but prehistoric in our sense of the word.

Mr. Wedel is concerned with village sites and two kinds of burial mound. He suggests the presence in the area of two different cultures. One (the Renner village site is the type site) shows definite relationships with certain "Northern Elemental Hopewellian Manifestations" such as those found in the Illinois valley and south-western Wisconsin, the other (the Steed-Kisker site is the type station) recalls the Nebraska culture, characteristic of the Missouri River bluffs in eastern Nebraska and south-

* Biology, Ecology and Morphogenesis of a Pelagic Foraminifer. By Earl H. Myers. Stanford University Publications. University Series. Volume IX, Number 1. Biological Sciences. Stanford University Press, 1943.