ABSTRACTS OF MEMOIRS

RECORDING WORK DONE AT THE PLYMOUTH LABORATORY

THE SYNONYMIES OF *HALICLONA ANGULATA* (BOWERBANK) AND *H. ARCOFERUS* (VOSMAER)

By Maurice Burton

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The classification of sponges must be based on the characters of the spicules, and to a larger extent this is true also of the identification of species. In identification, however, there is a certain unreliability introduced because categories of spicules, particularly of microscleres, may be sufficiently rare that they will be overlooked except in the most thorough microscopic examination. The recognition of this principle and the use of microscopic characters, as well as knowledge of the ecology, has made it possible to sort into two natural groups, corresponding to *H. angulata* and *H. arcoferus*, a long series of specimens formerly assigned to more than a dozen species belonging to different genera. M.B.

THE ECOLOGY AND NATURAL HISTORY OF *TETHYA AURANTIUM* PALLAS

By Maurice Burton

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It is too often found that our knowledge of even the better-known species of sponges is concerned mainly with the external form and the spiculation. Details of exact distribution and ecology are given either too sparingly or omitted altogether. That these, and other details, have a value to the taxonomist is shown in the study of *Tethya aurantium*. There has, for example, been a disposition on the part of some authors to recognize geographical varieties, based mainly on size, but when the measurements of a wide series of individuals are correlated with distribution and ecology such a view is shown to be untenable. A further lack in the details attached to collected specimens has been the record of the date of collection. In the study of development—in this case of the asexual buds—the absence of such data is a great handicap. M.B.

The Molluscan Stomach

By Alastair Graham

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The internal anatomy of the stomach of sixteen species of lamellibranchs and of ten species of prosobranch gastropods is described. The trochids *Monodonta* and *Calliostoma* show a gastric structure which allows close comparison with the lamellibranchs, allowing for the effects of torsion. Within the filibranchs the genera *Glycymeris*, *Ostrea* and *Mytilus* form a series in which the gastric caecum becomes increasingly complex. *Chlamys*, *Pecten* and *Lima*, on the other hand, show a tendency towards reduction of the caecum. In the eulamellibranchs the stomach is similar, whereas in *Nucula* it is reminiscent of the archaic gastropods.

Within the gastropods the stomach becomes simpler in correlation with a macrophagous carnivorous habit and extracellular digestion. A second factor controlling its plan is a forward migration of the oesophageal aperture until in opisthobranchs and pulmonates this adjoins the intestinal opening.

The structure of the polyplacophoran and cephalopod stomach can be shown to agree with those of the lamellibranchs and gastropods.

The steps in the evolution of the crystalline style from the faecal rod found in the style sac of the stomach of protobranchs, rhipidoglossan and lower monotocardian gastropods are discussed. A.G.

The Giant Axons of Annelids

By J. A. Colin Nicol

Quart. Rev. Biol., Vol. XXIII, 1948, pp. 291–3

A review is presented of information concerning the giant axons of annelids. The term is a convenient one for certain nerve fibres relatively much larger than others in any given species. They occur in many families of polychaetes, oligochaetes, and possibly archiannelids, and their pattern in these various groups is discussed. Giant axons may be intrasegmental or intersegmental, unicellular or multicellular; in some species they are divided by segmental septa into longitudinal units. Various lines of evidence demonstrate that they are concerned with quick contractions of the entire animal, in both polychaetes and oligochaetes. Measured conduction velocities for these axons are listed, and they are shown to conduct from 2 m. per sec. in *Nereis* up to 45 m. per sec. in *Lumbricus*. Conduction velocity is a function both of axon diameter and of the myelin sheath. Their diversity of structure in different families of polychaetes and oligochaetes indicates that they have arisen independently on several occasions within the Chaetopoda. J.A.C.N.