

## ABSTRACTS OF MEMOIRS

### RECORDING WORK DONE IN THE PLYMOUTH LABORATORY

BRYAN, G. W., 1974 Adaptation of an estuarine polychaete to sediments containing high concentrations of heavy metals. In: *Pollution and physiology of marine organisms*; edited by F. J. Vernberg and W. B. Vernberg, 123-35. London: Academic Press.

The burrowing polychaete *Nereis diversicolor* O. F. Müller thrives in the sediments of estuaries in Southwest England, although some are contaminated with metalliferous mining wastes. Concentrations of Cu, Zn, Cd, Pb, Ag and As in the sediments vary by as much as two orders of magnitude. Relationships between the concentrations in the sediments and animals are described and related to the results of experimental work. In animals from the more metallic sediments, evidence of greater tolerance to the toxic effects of copper and zinc, and possibly silver and arsenic, has been found. Physiological differences between tolerant and non-tolerant worms are described and the development of tolerant populations is discussed in relation to tolerance in other organisms.

MOULDER, D. S. & VARLEY, A., compilers, 1975. *A bibliography on marine and estuarine oil pollution*, Supplement 1, v, 152 pp. Plymouth: Marine Biological Association of the United Kingdom, Marine Pollution Information Centre.

This publication supplements the original bibliography on the same subject, published in 1971 and containing almost 1100 references. The supplement contains a further 1200 references arranged by subject in 13 sections covering topics such as detection and analysis of oil, reports on particular spills, biological effects of oil and methods of control of oil pollution. Papers on the effects of oil pollution on seabirds, on the legal, economic and social aspects and on pollution schemes, have been excluded.

SOUTHWARD, E. C., 1975. Fine structure and phylogeny of the Pogonophora. *Symposia of the Zoological Society of London*, 36, 235-51.

It is now known that Pogonophora are not three-segmented coelomates, as Ivanov thought when he assigned them to the Deuterostomia, but multi-segmented coelomates. The segmented posterior end was discovered fairly recently and its septa and setae have reinforced earlier speculations that pogonophores might be more closely related to annelids than to hemichordates. The fine structure of the cuticle is similar in pogonophores and annelids; the setae are also very similar, but Echiura and Brachiopoda have setae of the same type. The septa which separate the segments in the hind end of a pogonophore are three-layered as in annelids. The central nervous system of this part of the body has a segmental arrangement which recalls that of some annelids, though it is not exactly equivalent to any known annelid system. Other cell details are common to many animal groups. Pogonophores have some unique characteristics: the lack of an internal digestive system and the consequent dependence on epidermal absorption of food; the biochemical peculiarity of the chitinous tube and the specialized cells for its secretion; and among finer details of the anatomy, the single-celled pinnules on the tentacles and the cuticular plaques on the body surface. Because of these features the Pogonophora may still be regarded as a separate phylum but, from their body form, septa and setae, their nearest relatives seem to be annelids or the ancestors of the annelids.