ABSTRACTS OF MEMOIRS

RECORDING WORK AT THE PLYMOUTH LABORATORY

BARTLETT, C. A. & MOULDER, D. S., 1976. *A Bibliography on Marine and Estuarine Pesticide Pollution.* v, 96 pp. Plymouth: Marine Biological Association of the United Kingdom.

This bibliography contains references to over 700 papers, and is arranged by subject. There are sections on the transport, adsorption, persistence and degradation of pesticides; uptake, storage, metabolism and excretion; levels in the environment and in organisms; effects on organisms; detection and monitoring; and analysis. There is an author and a pesticide index.

BONE, Q., 1975. Muscular and energetic aspects of fish swimming. In *Swimming and Flying in Nature*, vol. 2 (ed. T. Y.-T. Wu, C. J. Brokaw and C. Brennen), pp. 493–528. New York and London: Plenum Press.

This review considers the structure and functional properties of fish locomotor muscle; the efficiencies involved in different stages of power production; and various means by which fish are supposed to reduce skin friction drag.

BONE, Q., RIDGE, R. M. A. P. & RYAN, K. P., 1976. Stretch receptors in urodele limb muscles. *Cell and Tissue Research*, **165**, 249–266.

Non-encapsulated, fine beaded nerve endings were found histologically on some muscle fibres in a number of limb muscles in newts and axolotls. They were present in newt muscles that had been chronically de-efferented, and in which no efferent activity survived, and were therefore likely to be sensory. They were located only on muscle fibres on or near the outside surface of the muscle. These small-diameter muscle fibres were characterized histochemically by low lipid, SDH and phosphorylase content; ultrastructurally by low glycogen content, and relatively large myofilaments poorly delimited by a sparse SR. There were many of this type (Type 1) that did not support sensory endings. A few endings occurred on another larger-diameter type of fibre (Type 2) whose properties were opposite to those listed above for Type 1. There was virtually no specialization of muscle fibre structure beneath the sensory endings.

Physiological experiments involving ramp-and-hold and sinusoidal stretch applied to the muscle whilst recording single-unit afferent responses in *m.ext. dig. III* of axolotls showed unit reponses very similar to those known from muscle spindles, particularly those of the frog.

DILLY, P. N. & NIXON, M., 1976. The cells that secrete the beaks in octopods and squids (Mollusca, Cephalopoda). *Cell and Tissue Research*, **167**, 229–241.

A single layer of cells secretes the hard cephalopod beaks. The beccublasts are tall columnar cells that separate the beak from the surrounding buccal muscles, and must serve to attach these muscles to the beak. Within the cell layer there are three types of cells. The first, and most frequently found contain cell-long fibrils. These fibrils may have contractile and tensile properties. Complex trabeculae extend from the beccublasts into the matrix of the beak. The fibrils are attached to these trabeculae and at the other end of the cells they are anchored near to the beccublast-muscle cell interface, closely associated with the muscles that move the beak.

The second group of cells contain masses of endoplasmic reticulum, the cysternae of which are arranged along the long axis of the cell. These cells also contain dense granules and are probably the major source of beak hard tissue. It is probable that each cell secretes its own column of beak hard tissue. The third group of cells contains a mixture of fibrils and secretory tissue.

In the beccublast layer there are changes in the proportion of the three types of cells depending upon the region sampled. In the region where growth is most active there are mostly secretory cells, whereas near the biting and wearing tip there are mainly anchoring type cells.

PIENAAR, R. N., 1976. The microanatomy of *Sphaleromantis marina* sp.nov. (Chrysophyceae). *British Phycological Journal*, **11**, 83–92.

The microanatomy of *Sphaleromantis marina* sp.nov., a new member of the Chrysophyceae, is described. It is a marine species differing from other members of the genus by possessing three types of scales. One type of scale is found on both the cell surface and the two flagellar surfaces. A second type is found only on the surfaces of the flagella and a third type is found only on the cell surface. A distinctive single curved chloroplast containing an unusual pyrenoid is described. The relationship of this species to previously described species is discussed.

SOUTHWARD, A. J., 1975. Intertidal and shallow water Cirripedia of the Caribbean. [Studies on the fauna of Curaçao and other Caribbean Islands, Vol. 46, No. 150]. *Uitgavin van de Natuurwetenschappelijke studiekring voor Suriname en de Nederlandse Antillen*, No. 82, 1–53.

Some 22 taxa of barnacles are recorded from a large number of Caribbean localities, ranging from S. Florida to Trinidad, and from the Panama Canal Zone to Barbados. *Balanus reticulatus* Utinomi is recorded for the first time from the region and its morphology compared with *B. amphitrite amphitrite* Darwin, with which it has been confused. *Chthamalus stellatus bisinuatus* Pilsbry is raised to full specific rank and details given of the morphological differences between this species and the other common Caribbean chthamalid, *C. angustitergum* Pilsbry. Full discussion of the distribution of barnacles in the Caribbean is reserved to a later occasion, but details are given of the relationship of the *Chthamalus* species to environmental factors. It is suggested that *C. angustitergum* in contrast to *C. bisinuatus* is especially adapted to life in the clear blue waters of the Caribbean, with their low standing crops of plankton and little detritus.