ABSTRACTS OF MEMOIRS

RECORDING WORK DONE AT THE PLYMOUTH LABORATORY

ARMSTRONG, F. A. J., 1963. Determination of nitrate in water by ultraviolet spectrophotometry. *Analyt. Chem.*, Vol. 35, pp. 1292–3.

To the sample (adjusted if necessary to contain at least 2 g chloride/l.) is added an equal volume of 98 % sulphuric acid and the absorbance is measured at 230 mμ. A second portion with hydrazine sulphate added to destroy nitrate is treated similarly; the difference in the readings measures the nitrate concentration. Beer's law is obeyed in the range 0·05 to 3 p.p.m. NO_3-N and higher concentrations may be determined after dilution. Ions likely to be present in natural waters, and small amounts of organic matter, do not interfere. The method can be used for sea water. F.A.J.A.

CHAPMAN, D. M., PANTIN, C. F. A. & ROBSON, E. A., 1962. Muscle in coelenterates. *Rev. canad. Biol.*, Vol. 21, pp. 267–78.

Some of the more important physiological and structural aspects of coelenterate muscle were reviewed in conjunction with some new observations provided by the electron microscope. The following summary is taken from the paper.

The muscles of coelenterates vary greatly in rate and extent of contraction and in structure. Smooth muscles are usually very extensible, and give slow, sigmoid contractions, which appear to be conducted in the muscle itself. Certain muscles can contract rapidly as well and then show facilitation and a much briefer latent period and relaxation phase. Muscles able to contract rapidly have larger fibres and a richer innervation than the rest. The swimming muscles of medusae cannot contract slowly and produce a non-sustained twitch contraction. The refractory period is long. These muscle fibres are striated and show many ultrastructural resemblances to other striated muscles. Two kinds of myofilament appear to be present in both striated and smooth muscles. The mesogloeal connective tissue plays an important part in controlling the mechanical performance of coelenterate muscle and its properties are discussed. It is concluded that, despite the special features associated with the anatomical peculiarities of coelenterates, the contractile properties of the muscular system resemble in essence those of higher animals. D.M.C.

JONES, E. B. G., 1962. Marine Fungi. I. *Trans. Brit. mycol. Soc.*, Vol. 45, pp. 93–114.

A survey was made of marine fungi growing on beech and Scots pine test blocks submerged at Sutton harbour, Plymouth; Langstone harbour, Portsmouth; Menai Bridge Marine Station, North Wales; Shoreham harbour and Southampton harbour. Twenty-six species are recorded, of which seven are new records for Britain (*Macrophoma gymnogongri*, *Stemphylium maritimum*, *Halosphaeria appendiculata*, *Sphaerulina pedicellata*, *Ceriosporopsis hamata*, *Lulworthia floridana* and *L. submersa*) and three are new species (*Gnomonia salina*, *Leptosphaeria macrosporidium* and *L. pelagica*). *Didymosphaeria spartinae* Grove is placed in synonymy with *Leptosphaeria discors*. Observations on the ability of certain marine fungi to soft rot wood in pure culture and

under laboratory conditions are made. It is noted that *Ceriosporopsis hamata*, *Halosphaeria appendiculata* and *Peritrichospora integra* are not early colonizers of wood submerged in the sea.

E. B. G. J.

JONES, E. B. G., 1963. Marine Fungi. II. Ascomycetes and Deuteromycetes from submerged wood and drift *Spartina*. *Trans. Brit. mycol. Soc.*, Vol. 46, pp. 135–44.

A further survey has been made of marine fungi growing on wood submerged in the sea and on driftwood at various sites (Plymouth, Portsmouth, Port Erin, Millport, Dale Fort and Aberdeen) around the British coast. *Sporidesmium salinum*, a marine dematiaceous hyphomycete growing on wood submerged in the sea is described as a new species. The new combination *Monodictys pelagica* (Johnson) Jones is proposed. The following hyphomycetes are recorded and discussed: *Dictyosporium pelagicum*, *D. toruloides*, and *Monodictys putredinis*. *Humicola alopallonella* and *Culcitalna achraspora*, two marine hyphomycetes, are new records for Britain. The following Ascomycetes, *Ceriosporopsis halima*, *Lulworthia fucicola*, *L. medusa* var. *medusa* and *L. opaca* are recorded and discussed, while *Halosphaeria torquata*, *H. circumvestita* and *Sphaerulina orae-maris* are new records for Britain.

E. B. G. J.

KANE, J. E., 1963. Observations on the moulting and feeding of a hyperiid amphipod. *Crustaceana*, Vol. 6, pp. 129–32.

Specimens of the hyperiid amphipod *Parathemisto gracilipes* were collected on recent cruises of R.R.S. 'Discovery' and R.V. 'Sarsia' and kept alive in constant temperature tanks for several weeks. Several of the amphipods moulted and the process is described and figured. When a comparison is made of the ecdysis in this hyperiid amphipod with that in some littoral gammarid amphipods, there is only a slight variation, which may be due to the difference of habitat. Some observations on the food and feeding behaviour were also made on *P. gracilipes* and are recorded here.

J. E. K.

KEARN, G. C., 1963. The life cycle of the monogenean *Entobdella soleae*, a skin parasite of the common sole. *Parasitology*, Vol. 53, pp. 253–63.

The life cycle of *Entobdella soleae*, a monogenean skin-parasite of a marine bottom-living flatfish (*Solea solea*) has been described and related to the habits of the host, which buries itself in the sediment for some time each day and when not buried rarely moves more than a few centimetres from the sea bottom.

The eggs of the parasite are laid by specimens attached to the lower surface of the host and are anchored to sand grains on the sea bottom by an egg stalk bearing sticky droplets. The anchoring device may prevent the eggs from being carried by water currents vertically or laterally out of the region inhabitated by soles.

The free-swimming oncomiracidium which hatches from the egg invades the anterior part of the upper surface of the fish, which is the only part exposed when the fish is buried in the sand. After a short period of development on the upper surface the parasite emigrates to the lower surface, where sexual maturity is reached.

Adult parasites, which are distributed randomly on the lower surface, are orientated with the adhesive organ upstream with respect to water currents produced by the forward locomotion of the host, but the parasites are capable of moving from place to place on the lower surface of the fish.

G. C. K.