ABSTRACTS OF MEMOIRS

RECORDING WORK DONE AT THE PLYMOUTH LABORATORY

The Angular Scattering of Blue, Green, and Red Light by Sea Water

By W. R. G. Atkins and H. H. Poole

Sci. Proc. R. Dublin Soc., Vol. 26 (18), 1954, pp. 313–23.

Previous work on the scattering by sea water of light from a tungsten filament, and of this light filtered through a blue filter (*Proc. Roy. Soc.* B, **140**, 1952, pp. 321–38), has been extended to include green and red light, a R.C.A. 1P22 photomultiplier cell being substituted for the R.C.A. 931A, which had not sufficient green or red sensitivity. To avoid fatigue the exposure was as short as possible and the current below 0·2 μA, usually under 0·1 μA. The same apparatus was used, but with a correction for the effect of light internally reflected in the experimental flask. This becomes large for angles of scatter exceeding about 120°, and renders doubtful the rise in scattering within a zone 1° wide previously deduced from measurements at greater angles. Below the minimum, which again occurred near 120°, the results closely resembled the previous ones, the zonal scattering rising with decreasing angle to some maximum at less than 10°, the lower angular limit of measurement. Blue light was more scattered than either green or red, the difference between the latter two being scarcely significant. Successive filtering through collodion filters 1·4, 0·5 and 0·1 μ average pore diameter reduced the scattering by sea water to about the same value as that of the purest doubly distilled water, and increased the difference between blue light and the other colours. H.H.P.

The Euphausiid Crustaceans of Southern African Waters

By Brian P. Boden

Trans. Roy. Soc. S. Afr., Vol. 34 (1), 1954, pp. 181–243.

The euphausiid crustaceans from several extensive collections made in the waters around southern Africa have been examined. Forty-two species, belonging to nine genera, are described and fully illustrated. One new species, *Thysanopoda subaequalis*, is described, and sixteen new distribution records are added. Keys to the genera and species are included. A short comment is made on the hydrographic conditions in the area. The distribution of species is treated briefly, with extra emphasis on those species whose more southern representatives have been investigated by other workers. B.P.B.

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Quelques Caractéristiques Biologiques de *Lophius piscatorius* L.

By L. Brull and Y. Cuypers

(avec la collaboration de L. Dubois et L. Wilsens)

Arch. int. Physiol., T. 62, 1954, pp. 70–5.

The following properties of *Lophius* blood and urine have been determined: (1) Systemic blood pressure is equal to 40–50 cm of water, with systolic variations of 3–5 cm. (2) There is about 2 g% haemoglobin in the blood. Variations do not depend on the size of the fish. (3) Δ of bladder urine is lower than, or equal to, that of plasma in ten measurements out of twelve, and slightly above in the remaining two. (4) Plasma magnesium (normally 6·5 mg% or less) appears to increase from the time when the fish is caught, rising to 9 or even 16·7 mg. (5) Urine magnesium increases similarly after catching, reaching about 300 mg%. L.B.

Spicule Form in *Leucosolenia complicata*

By W. C. Jones

Quart. J. micr. Sci., Vol. 95, 1954, pp. 191–203.

The tri- and quadriradiates of *Leucosolenia complicata* are described in four aspects, surface view, transverse view, side view and planar view. The form and size in all four aspects vary with the distance from the oscular edge.

Each spicule ray tends to grow in a plane containing the optic axis. The oscular ray planes intersect at an angle which varies from 160° at the oscular edge to 140° at the base of the tube.

A preliminary discussion is given on some factors controlling spicule form. W.C.J.

The Mechanism of Proboscis Movement in *Arenicola*

By G. P. Wells

Quart. J. micr. Sci., Vol. 95, 1954, pp. 251–70.

The mechanism of proboscis movement is analysed in detail in *Arenicola marina* L. and *A. ecaudata* Johnston, and discussed in relation to the properties of the hydrostatic skeleton.

Proboscis activity is based on the same three-stage cycle of movements in both species, but they differ anatomically and in their hydrostatic relationships. In *ecaudata*, the forward movement of body-fluid which extrudes and distends the proboscis is largely due to the contraction of the gular membrane

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and septal pouches. In *marina*, the essential mechanism is the relaxation of the oral region which allows the general coelomic pressure to extrude the proboscis. The gular membrane of *marina* contracts as that of *ecaudata* does, but its anatomy is different and it appears to be a degenerating structure as far as proboscis extrusion is concerned.

The proboscis is used both in feeding and in burrowing; in the latter case nothing enters through the mouth; the difference is largely caused by variation in the timing of withdrawal relative to the 3-stage cycle. G.P.W.

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