

ABSTRACTS OF MEMOIRS

RECORDING WORK DONE AT THE PLYMOUTH LABORATORY

FLOOR OF THE ENGLISH CHANNEL

By W. B. R. King

Geol. Mag., Vol. LXXXVII, 1950, pp. 383-4

Cores of the solid rock as well as the superficial cover have been obtained with a modified Stetson corer worked from the R.V. *Sabella* of the Marine Biological Association. Three areas have been sampled: (1) near the Eddystone, where New Red Sandstone has been proved over a wide area, while Chalk was found 18 miles south of the lighthouse; (2) mid-Channel, between Isle of Wight and Cherbourg, where Chalk was proved in the northern parts and Wealden sands and Jurassic clays in the central area, with Chalk again to the south; (3) an area crossing the Hurd Deep, W.N.W. of Guernsey to about mid-Channel, where the bed rock proved to be mostly Chalk. The research is continuing.

W.B.R.K.

TWO NEW PYCNOGONIDS FROM BERMUDA

By Marie V. Lebour

Proc. Zool. Soc. Lond., Vol. 118, 1949, pp. 929-32

Two new species of pycnogonid are described, *Anoplodactylus tenuirostris* and *Parapallene bermudensis*. The first a small species from the Reach, probably related to *A. petiolatus*, the second, one specimen only, from open water about 100 feet depth, near the bottom.

M.V.L.

SOME NEW DECAPOD CRUSTACEA FROM BERMUDA

By Marie V. Lebour

Proc. Zool. Soc. Lond., Vol. 118, 1949, pp. 1107-17

A new species of *Discias* and three species of *Periclimenes* are described.

The *Discias* was captured near the bottom, 100 ft. or more, in open water. Only three species are so far known and this new one is peculiarly interesting, the specialization of the first and second legs being unusually marked, but

the mandible and maxilla showing a more primitive condition. The larvae of *Periclimenes iridescens* n.sp. were hatched from the egg and are interesting in being intermediate between *P. diversipes* and the typical *Periclimenes* (*Ancylocaris*) larvae described by Gurney.

It was found that the specific name of *P. (Ancylocaris) bermudensis* n.sp. was preoccupied and this was altered to *rhizophorae*. M.V.L.

SOME EUPHAUSIDS FROM BERMUDA

By Marie V. Lebour

Proc. Zool. Soc. Lond., Vol. 119, 1949, pp. 823-37

A collection of euphausids is described, following the work of Gurney (1947) and filling in certain gaps in this work. For the first time a nauplius of *Stylocheiron* is recognized, having hatched from the egg of *S. carinatum*. Certain variations in pleopod succession are noted in various species. M.V.L.

NOTES ON SOME LARVAL DECAPODS (CRUSTACEA) FROM BERMUDA

By Marie V. Lebour

Proc. Zool. Soc. Lond., Vol. 120, 1950, pp. 369-79

The larvae of *Panulirus argus* were hatched out and the first stage figured. Notes on later stages are given and descriptions of two larval scyllarids. Late stages of *Petrolisthes armatus* are described and two interesting zoeae of raninids. No species of adult *Ranina* has as yet been recorded from Bermuda. Some crab zoeae hatched from the egg are described—*Portunus spinimanus*, *Lobopilumnus agassizii* and *Grapsus grapsus*. M.V.L.

SWIMMING OF DOLPHINS

By G. A. Steven

Science Progress, No. 151, 1950, pp. 524-5

Some years ago, while the author was serving in a ship on passage with another vessel in tow, a unique opportunity arose of obtaining exact observations of the time taken for dolphins to swim a known distance and so calculate their speed. It was found that some animals were capable of almost exactly 20 knots. The number of tail beats in animals swimming at 9 knots were also noted. The counts varied from 23 to 27 beats in 10 sec. Certain interesting characteristics of dolphin wakes are also described. G.A.S.

DIFFERENTIATION OF THE SEA-URCHIN EGG FOLLOWING REDUCTION
OF THE INTERIOR CYTOPLASM IN RELATION TO THE CORTEX

By Sven Horstadius, I. J. Lorch and J. F. Danielli

Exp. Cell. Res., Vol. 1, 1950, pp. 188-93

The central cytoplasm of eggs of *Echinus esculentus* L. and *Psammechinus miliaris* (Gmelin) was reduced by suction before fertilization. The total cytoplasmic reduction amounted to about 50%.

In 20 eggs which started development no deviations in either animal or vegetal direction were observed. The resulting plutei were normal in every respect except size.

The results are contrary to Dalcq's concept of the differential localization of gradients at the centre and periphery of the sea-urchin egg. J.F.D.

THE MECHANICS OF THE BLOOD VASCULAR SYSTEM OF
ASCIDIELLA ASPERSA

By C. A. Haywood and H. P. Moon

University College, Leicester

Journ. Exp. Biol., Vol. 27, 1950, pp. 14-28

The blood vascular system of *A. aspersa* is considered with particular reference to the well-known periodic reversal of the heart beat. It is emphasized that the problem involves two considerations: (1) why the heart stops beating periodically, and (2) why having stopped it should then reverse. The first consideration is taken in some detail and a mechanical model of the blood vascular system is considered mathematically. It is shown that a 'back pressure' similar to that postulated by La Hille arises, and that the heart should exhibit the periodic cessation of beating. A relation is deduced connecting the time between successive reversals with the velocity of the heart beat, and is shown to be capable of direct experimental verification. In this the ascidian is brought to various temperatures as a means of varying the velocity of the heart beat. Allowing for the variation of the viscosity of the blood with the temperature it is found that the relation is satisfied within certain limits, the significance of which is discussed.

Various criticisms of La Hille's 'back pressure' theory are shown to be invalid and examples are given of other closed contractile systems containing fluid which show reversal. H.P.M.