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X.—On *Ovulites margaritula*

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neck is 10; width of prothorax at supracoxal dilatation 7·33; height of head 7, breadth of head 10·5; length of mesonotum and metanotum taken together 18·5, of abdomen 47·5, of cerci 12, breadth of cerci 1·33; length of fore coxa 20, femur 24, tibia (straight portion) 10, first tarsal joint 8; length of intermediate femur 24, tibia 24, first tarsal joint 5·5; length of posterior femur 30, tibia 34, first tarsal joint 9; length of tegmina 33, of stigma 6, breadth of tegmina 10.

Hab. A single specimen, preserved in alcohol, from North Australia (*C. French*).

7. *Tenodera australasiæ*, Leach.

Mantis australasiæ, Leach, Zool. Miscellany, p. 78, tab. xxiv. ♀.

Hab. North Australia (*C. French*). A single specimen, in alcohol.

Subfamily PROTEROMANTINA.

8. *Phthersigena Kraussii*, Saussure.

Haania Kraussii, Saussure, Mél. Orthopt. 4^e fasc. p. 75, pl. 8. fig. 26.

Hab. Two adult and two immature females from North Australia (*C. French*).

Calcutta, May 4, 1877.

X.—On *Ovulites margaritula*.

By Professors W. K. PARKER and T. R. JONES.

IN the 'Ann. & Mag. Nat. Hist.' for April 1860, ser. 3, vol. v. pp. 292, 293, we described the little egg-shaped and pearl-like Foraminifer, named *Ovulites margaritula* by Lamarck, and its elongate varieties. At that time we referred it to the *hyaline* group of Foraminifera; but we have lately discovered that it belongs to a different series. Some specimens in particular are beautifully smooth, polished, and sub-translucent, like the most delicate of the *Peneroplides*; and we mistook this for the "clear, smooth, glassy appearance" belonging to the *hyaline* Foraminifers. Far more usually the specimens are quite opaque and *porcellaneous*; and this appearance we wrongly referred to fossilization.

Whether ovoid, clavate, or cylindrical, *Ovulites* is really one of the Dactyloporidæ. D'Orbigny placed *Ovulites* next to *Dactylopora* among his *Monostegia* (in 1851), but these comprise some very heterogenous kinds.

The apertures with which the shell-wall of *Ovulites* is per-

forated are not the tubules of a *hyaline* Foraminifer (though homologous with them), but the passages for large bulbous threads of sarcode, such as in *Dactylopora* pass from the internal mass, at regular intervals, as single or multiple stolon-like threads. These may or may not swell into ganglion-like beads, occupying chamberlets in the thickness of the wall, and communicating with the exterior, more or less freely, by further threads of sarcode. In *Ovulites* the thread-like process was swollen before it reached the surface, and either communicated with the exterior by a small aperture in the shell, or was covered in on the outside. Each of these little processes from the large inner sarcodic mass was invested with its own shell-matter, forming a minute, subhexagonal, perforated block, fitting side by side, with hundreds of others, to form the ovoidal or cylindrical shell. This may be open at both ends, like a distomatous *Lagena*.

The external pores in *Ovulites* are elliptical or suboblong, smaller, in proportion, than in *Dactylopora* and more irregular, and they are bounded by the sutural subhexagonal outlines, or areolation, above indicated. In other words, the general wall consists of more or less six-sided, close-fitting plates, set edge to edge, and each pierced with an elliptical aperture, leading to a round chamber and narrow passage, opening on the inner side. The subhexagonal blocks are homologous with the longitudinally perforated needle-prisms of *Nummulina*, in which each pseudopodial thread is invested with its prismatic coat (as Dr. Carpenter has explained, 'Introd. Foram.' p. 256); and the whole, fitting closely side by side, constitute the shell-wall. In *Globigerina*, also, this prismatic structure is well known, and has been figured by Dr. Wallich in 'The Atlantic Sea-bed,' part i. pl. 6, and in his 'Biology of *Globigerina*' (1876, 8vo, Van Voorst). Here the thick and deeply areolated shell, shown by fig. 6, is homologous with some *Dactyloporæ*, in which the bulbous threads of sarcode, penetrating the shell, thicken into beads (see fig. 9, *Orbulina*); and these external beads, becoming continuous, invest all the structure (fig. 7), and produce a secondary shell-growth, not only as in *Orbulina* and *Globigerina*, but in *Pulvinulina*, *Lagena* even, and many other Foraminifers. The isolation of small pyriform or flask-like morsels of sarcode in the shell-wall of *Globigerina* (*op. cit.* p. 75, figs. 17, 18, 19; see also 'Proc. Roy. Soc.,' February 1875, p. 236) is evidently homologous with the enclosure of sarcode lobes in the walls of the *Dactyloporidæ*. Dr. Carpenter has already remarked that in *Dactylopora* and *Globigerina* there is a corresponding absence of stolon communication

between the chambers ('Intro. Foram.' p. 182); and we may add that *Globigerina* furnishes the intermediate and connecting link between the areolated structure of *Dactylopora* and the finely prismatic tissue of the Nummuline shell.

In some cases, especially in the thin rod-like form of *Ovulites*, external pores cease to exist, the apertures being encroached on and closed by delicate shell-matter; and only minute irregular wrinkles remain on the surface. In a short, thick, biclavate (dumb-bell) *Ovulite* the relatively large chamberlets are closed with translucent films. Some subcylindrical *Ovulites* approach very closely in character to the smallest pipe-like *Dactyloporæ* (*Gyroporella*?, Gmbel) with vesicular wall-chambers.

With their large internal mass of sarcode and its numerous simple or complex lateral processes, the allied groups of *Acicularia*, *Ovulites*, and *Dactylopora* (*Haploporella*, *Dactyporella*, &c., Gmbel*) may be regarded as opaque calcareous frameworks in sarcode, just as the Polycystines have a siliceous skeleton in their sarcodic mass. The *Dactyloporidæ* are thus clearly distinguishable from the *Miliolidæ* and other *porcellaneous* Foraminifera, as indicated by one of us in the 'Monthly Microscop. Journ.' for February 1876, pp. 65, 89.

May 25, 1877.

MISCELLANEOUS.

Zoology of the 'Challenger' Expedition.

To the Editors of the Annals and Magazine of Natural History.

As, in a letter upon this subject in the number of the 'Annals and Magazine of Natural History' for May last, Dr. Martin Duncan, writing as President of the Geological Society, has stated that he speaks "at the instance of a very considerable number of Members of learned Societies," we the undersigned wish to state that we do not agree in the strictures passed by Dr. Duncan upon the manner in which Sir C. Wyville Thomson has distributed the specimens collected by the 'Challenger' Expedition for description.

So far as we have had an opportunity of judging, we are perfectly satisfied that Sir C. Wyville Thomson, in the arrangements which he has made as regards these collections, has acted consistently with the best interests of science.

It was, in our opinion, Sir C. Wyville Thomson's duty to secure the aid of the most competent naturalists without regard to their nationality; and, even if it were proper that national jealousies should be imported into science, Sir C. Wyville Thomson can hardly

* Abhandl. k. bayer. Akad. Wiss. 1872.