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Order ZOANTHIDEA

Family PARAZOANTHIDAE

Parazoanthus lividum n.sp.

Fig. 2, Pl. 9, fig. 4

MATERIAL: Survey area 6 (off Williamstown 29/6/58) 2 specimens.

HOLOTYPE: Nat. Mus. Vict. G1549.

PARATYPE: G1550.

TYPE LOCALITY: Off Williamstown, Vict.

DESCRIPTION: The zoanths in both lots are on the sponge *Spirasterella* sp. According to Dr Patricia Berquist, the zoanthid is dull bluish-grey and the sponge, yellow ochre. In preservative the zoanths of one lot are yellow ochre while in the other they are a pale violet-brown. The pieces of sponge are rather well covered by several colonies of zoanths which consist of two to more than 100 polyps per colony. For the most part the coenenchyme, flattened, band-like and two to 4 polyps wide, meanders in the depressions between nodules on the sponge surface. However, at the distal end of the sponge the coenenchyme is sheet-like and almost completely caps the rounded end of the sponge. In the proximal region of the sponge the colonies are small and separate. The largest opened polyp measures 2 mm in diameter and extends 1 mm above the surface of the coenenchyme. Some of the closed polyps are flush with the surface of the coenenchyme while most appear as hemispheres. The polyps are close together, many with their margins touching. Small polyps are interspersed randomly among large ones. Incrustation consists of fine, uniform-sized grains of quartz and calcareous sand plus a few sponge spicules. It is moderately dense on the polyps, sparse in the middle of the coenenchyme band, and virtually absent along the edges of coenenchyme. The ridges of the scapulus number to 16 and are distinct in semi-open or open polyps. The tentacles number to 29.

Marginal sphincter is entodermal, occupying the entire length of the scapulus (about 120 μ long). It consists of 10 to 12 pleats of which the highest is about 20 μ . The mesogloea in this area is about 6 μ thick.

Mesenteries number to 29 in large specimens with 16 being macrocnemes and 13, micro-

nemes. The retractor muscles of macrocnemes are very weak and consist of a thin sheath of fibres without underlying mesogloea pleating. The filaments are of typical shape, are ciliated, contain numerous nematocysts as well as acidobasophilic gland cells. The parietal portions of the macrocnemes, with respect to the appearance of the mesogloea and muscle fibres, are very similar to microcnemes. Here the mesogloea is thick (25 μ) and the muscle fibres are borne on low mesogloea pleats. The microcnemes extend out from the column mesogloea a distance equal to or slightly greater than the thickness of the column entoderm (about 125 μ). All specimens sectioned lacked discernible gonads.

The actinopharynx is longitudinally corrugated. The siphonoglyph is shallow but distinct. The hyposulcus is slightly shorter and indistinct.

The mesogloea is acellular and in the column contains incrustation and lacunae with entodermal cells. A distinct encircling sinus was not apparent but some of the cords of entodermal cells could have been part of such a sinus.

The ectoderm of the column is disrupted by the incrustation. Intact portions (about 30 μ thick) contain numerous holotrichs and also acido- and basophilic gland cells.

The entoderm contains zooxanthellae in abundance as well as acido- and basophilic gland cells.

Cnidom: Spirocysts of tentacles, 15-20 \times 3 μ , numerous. Microbasic b-mastigophores of tentacles, 16-17 \times 2-2.5 μ , common; of actinopharynx, 18-21 \times 2.5-3 μ , common. Microbasic p-mastigophores of tentacles, 15 \times 3-4 μ , common; of filament, 15-19 \times 4 μ , common. Holotrichs of filaments, 22-25 \times 10-12 μ , few; of column ectoderm, 20-25 \times 10 μ , numerous.

REMARKS: Only *Parazoanthus capensis* Duerden (1907: 180, Pl. 11) from South Africa seems sufficiently close to *P. lividum* to warrant close comparison. Carlgren (1938: 95, Fig. 48, Pl. 1, fig. 4) has given further details of this species. First, *P. capensis* occurs on a different species of sponge, is pale yellow in-

stead of bluish-grey, and the colonies seem never to have as many polyps as the majority of colonies of *P. lividum*. The polyps of *P. capensi* are twice the size of those of *P. lividum* and have 14 scapular ridges instead of 16. The nematocysts of *P. capensis* are in general 2-4 μ longer than in *P. lividum*. In view of these discrepancies and the geographic separation of the two species, I consider the Port Phillip Bay specimens a new species.

Family EPIZOANTHIDAE

Epizoanthus sabulosum n.sp.

Fig. 3, Pl. 9, fig. 3

Survey area 58 (293) 1 colony.

HOLOTYPE: Nat. Mus. Vict. G1551.

TYPE LOCALITY: Point Lonsdale, Vict.

DESCRIPTION: The single lot of zoanthids from area 58 were on a delicate, branching sponge about 8 cm high. The several colonies on

the sponge take the form of tight clusters of up to 6 polyps. Interspersed among these are single polyps. There is a total of about 100 polyps on the sponge. None of the polyps is expanded. The largest of the least contracted polyps is 4 m high and a greatest diameter of 3 mm. The coenenchyme is flattened and scarcely exceeds the circumference of the polyp's base. Both the polyps and coenenchyme are densely incrustated with quartz sand grains. The scapular ridges number to 15, are prominent and are heavily incrustated. Tentacles number to 30 in large polyps.

Marginal sphincter muscle in the mesogloea, alveolar, the 16 to 18 alveoli situated about mid mesogloea. The sphincter is moderately strong, about 200 μ long in section.

The mesenteries number to 30 of which 15 are macrocnemes and 15 are microcnemes. The macrocnemes bear filaments and are fertile. The specimens sectioned are female.

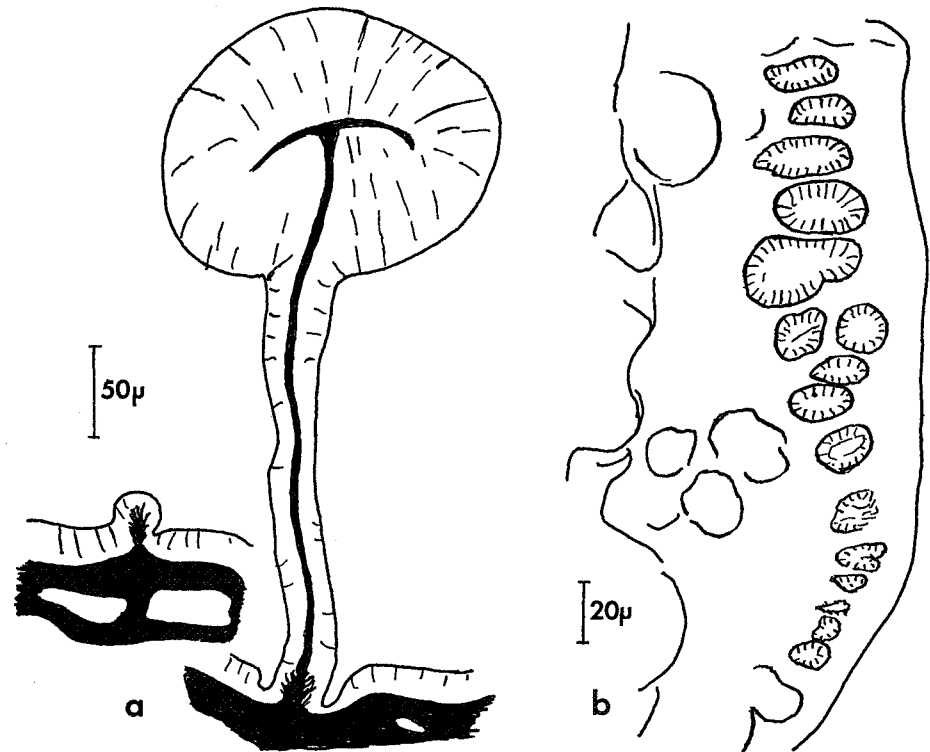


Fig. 3—*Epizoanthus sabulosum* n. sp., a, microcneme and macrocneme; b, marginal sphincter (only mesogloea shown).

The musculature of the macrocnemes is extremely weak and consists of only a thin layer of fibres against the mesogloea lamella. The mesogloea in the parietal part of the mesenteries is about three times as thick as the rest of the mesentery lamella and is pleated against the parietal muscle. The microcnemes are similar in shape and size to the thickened parietal portions of the macrocnemes. The filaments on the macrocnemes are of typical shape in sections but are exceptionally thick.

The actinopharynx is longitudinally corrugated. A distinct siphonoglyph and an indistinct hyposulcus are present.

The mesogloea of the column is thick and contains much incrustation as well as isolated nests of ectodermal cells and acido- and basophilic gland cells.

The ectoderm of the column is greatly interrupted because of the dense incrustation but where present is up to 25 μ thick.

The entoderm contains numerous zooxanthellae, a feature unusual for members of this genus.

Cnidom: Spirocysts of tentacles 15-22 \times 2.5-3 μ , numerous. Microbasic b-matigophores of tentacles 16-20 \times 2 μ , few; of actinopharynx, 16 \times 2.5 μ , few. Microbasic p-mastigophores of filaments 16 \times 4 μ , common. Holotrichs of column 15-20 \times 8-10 μ , few.

REMARKS: Of the 17 species of *Epizoanthus* known from the Pacific and Indian Oceans, nine species are free-living, four form carcinoecia, two are symbionts of gastropods, and two are symbionts of *Hyalonema*. Many of these species can be eliminated from consideration solely on the basis of their geographical and/or bathymetrical range or their growth form. I have not exhaustively compared all other species but I cannot find in my collection or in the literature any species of *Epizoanthus* that is similar enough to the Port Phillip species to warrant a detailed comparison. The Port Phillip species seems to be unique from the standpoint of the type of sponge on which it is found, its occurrence in shallow water, its size, number of septa, and in its possession of zooxanthellae.

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