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A New Sea Cucumber from Macquarie Island

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Abstract

A new holothurian is described from the tidal zone at Macquarie Island.

Trachythyone macphersonae n. sp.

DIAGNOSIS. Skin thin, but firm and opaque. Ventral surface of the body with three rows of tube-feet to each of the three radii. Dorsal surface with scattered papillae. Deposits small overlapping buttons, average length 0.2 mm, with few perforations. Cups and dichotomously branching spicules overlie the buttons in the skin.

DESCRIPTION. The single specimen is completely contracted and the tentacles are not visible. The body is approximately cylindrical in shape, bluntly rounded anteriorly, and tapering gently towards the posterior end to form an upwards turned "tail". The skin is thin and firm but opaque, and has a characteristic grainy appearance, due to the presence of large numbers of spicules. There is some transverse wrinkling, especially near the posterior end of the body.

Colour in alcohol, pink; the extremities are greyish-white.

On the ventral side of the body there are three rows of tube-feet to each of the three radii. Towards the anterior and posterior extremities the rows become biserial, and they eventually die out altogether. The last 3 mm of the posterior end of the body are quite naked. The dorsal surface carries a number of scattered papillae which are more numerous laterally.

Spicules of three kinds are present in the skin:

1. Buttons (Fig. 1). The skin contains large numbers of rectangular to oval perforated buttons which are closely aggregated together and overlap in all directions. In general the buttons have two to ten perforations. Average greatest length of the buttons is 0.2 mm.

2. Cups (Fig. 3). Small cups overlie the buttons in the skin, but they are not nearly as numerous. The cups are shallow, approximately circular, and they typically have four perforations. The cup rim carries about ten knob-like projections. Average diameter of each cup is 0.05 mm.

3. Dichotomously branching spicules (Fig. 2). These spicules lie intermingled with the cups in small numbers.

The tube-feet have well-developed end-plates (Fig. 5), which are surrounded by irregular perforated supporting rods (Fig. 4).

HOLOTYPE. The holotype is number H1 in the collection of the National Museum of Victoria, Melbourne, Australia. Dimensions of the Holotype: Total length, 30 mm, greatest diameter, 7 mm.

MATERIAL EXAMINED. Garden Cove, Macquarie Island, at low tide level, among sea anemones, one specimen. Collected by J. Hope Macpherson, 26.12.1959.

DISCUSSION. The present species appears to be rather closely related to *T. bollonsi* (Mortensen), which is known from six specimens taken from off Cape Maria van Diemen in the northernmost part of New Zealand (Mortensen, 1925). *T. bollonsi* and *T. macphersonae* are similar in external appearances, although Mortensen (1925) notes that *T. bollonsi* is “. . . blackish on the dorsal side, otherwise white. The young ones are white”. Differences in spiculation between the two species serve to distinguish them readily. In *T. bollonsi* the buttons are scattered and not overlapping as they are in *T. macphersonae*. The well-developed cups in *T. macphersoni* are paralleled by rudimentary cups in *T. bollonsi*.

T. parva (Ludwig) is also similar to *T. macphersonae* in some respects, but the buttons in *T. parva* are larger and more massive, and the ventral tube-feet are not confined to the radii. *T. parva* is essentially a southern species, and it may well be that these three species were derived from some common source, speciating as a result of their isolation from each other.

ACKNOWLEDGMENTS

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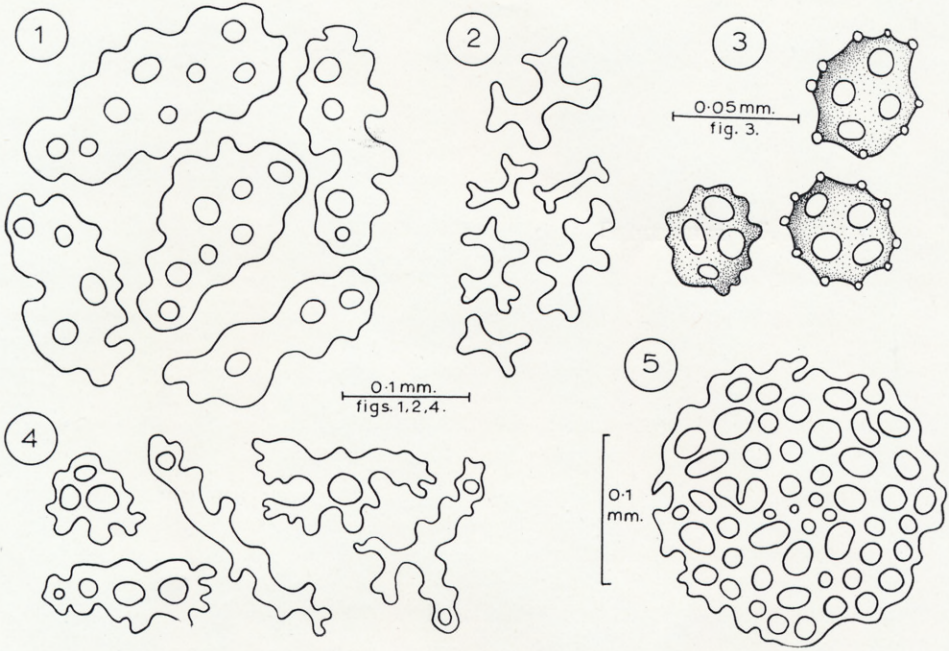


Photo: M. D. King.

Trachythyone macphersonae n. sp.—Fig. 1—Buttons. Fig. 2—Dichotomously branching spicules. Fig. 3—Cups. Fig. 4—Rods from the tubefect. Fig. 5—Endplate from tubefoot. Below: Holotype, viewed from the left ventral side.