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A CREEPING CTENOPHORAN (PLATYCTENEA: CTENOPHORA) FROM VICTORIA, AUSTRALIA

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Summary

Specimens of a platyctenean ctenophoran tentatively identified as *Coeloplana willeyi*, Abbott, 1907, are described living on red and green algae at the southern end of Port Phillip Bay, Victoria. These constitute the first record of this group of animals from southern Australia and only the second record for Australia.

Introduction

During survey work at the southern end of Port Phillip Bay, Victoria, Mr Phil Hollis of the Underwater Research Group of Victoria discovered several specimens of a small creeping ctenophoran. These were discovered on detailed examination of minute algal faunas in an aquarium following collection of bottom growths from selected deep water areas in the Bay, and were brought in alive to the Museum where they were observed for several days. They were readily identified as platyctenean ctenophorans belonging to the genus *Coeloplana* by their creeping habit, the presence of two retractile pinnate tentacles, a central dorsal statocyst and the absence of swimming comb-plates.

This constitutes the first record for the Order Platyctenea for southern Australia and is only the second record for Australia, the other being for the Great Barrier Reef (Stephenson, 1931). Apart from an otherwise unpublished record by Dayton and Robillard for Antarctica 1968 (pers. comm. in Gordon, 1969) it is the most southerly record for this group of unusual animals.

MATERIAL

Four specimens were discovered on algal growth taken from 15·5 m in a tidal hole 1·5 km north of Portsea in the southern part of Port Phillip Bay, Victoria (38°19′ 5; 144° 45′ E). All specimens were found by Mr Phil Hollis, the first in December 1972 and three more in January 1973. The first and second specimens were found crawling on *Caulerpa* sp. while the others were on red algae. The samples in each case consisted largely of algae though some ascidians and other sessile animals were also present in small numbers. It is therefore not known with certainty on what substratum the animals were originally taken. However, they are not confined to one type of substratum and appear to be able to readily pass from one to the other.

Three specimens are preserved in 5% neutral formalin in the National Museum of Victoria, Reg. No. G2649.

DESCRIPTION

The animal has a very flat flexible body capable of extension in any direction, with a thicker central dome-like region. In the centre of this domed region is a statocyst, composed of a central granule suspended in a vesicle, which is overlaid by a section of the body wall. There is an aperture in the outer body wall, which is figure-8 shaped with a central constriction, the long-axis of the aperture being perpendicular to the inter-tentacular axis. This aperture can be opened and closed very rapidly, presumably by a sphincter muscle system. Surrounding the statocyst in the central area are several clear vesicles or pustules. On the few specimens examined these pustules vary in number from 8 to 25, ranging in size from three times as large as the vesicle containing the statocyst to approximately half its size, and in organization from a regular arrangement of radiating lines around the statocyst to a totally irregular arrangement.

There are two long pinnate tentacles capable of extension to 6 to 8 times the body diameter. These tentacles are completely retractable into two tentacular sheaths at opposite sides of the body in the central domed region. When the

tentacles are retracted the positions of the tentacular sheaths are barely discernible as slightly raised, smaller areas of the central dome region.

The overall body colour is a dark pink to orange-red with small pale or transparent areas and some white blotches. This appears to be made up of small red pigment spots and some white pigment spots in a largely transparent general body structure. Contraction of the body causes an intensification of the colour.

The ventral surface is flat, with less colour, giving the body a semi-transparent appearance. The general distribution of the main body organs can be seen through the ventral surface. The position of the tentacular sheaths can be seen and also a series of canals surrounding a meridional canal.

BEHAVIOUR

When crawling the animals expanded to 12 mm in diameter and the tentacles were capable of extending to at least six to eight times the body diameter. The animals were first observed crawling on the surface of green or red algae. Tentacles were streamed either together or independently and retracted intermittently. The animal crawled freely over the surface of the alga with no particular part leading. However, several independent observations were made of the body being bent round so that the two tentacular sheaths were positioned on the same side, allowing both tentacles to be streamed in the same direction.

The animal was dislodged from the alga and was observed to swim feebly by a series of undulating wave movements of the thin peripheral region. It was also observed to gain the surface film of water in a shallow dish and to float inverted on the surface film by completely expanding its under-surface. While floating in this manner the tentacles were fully streamed several times. On one occasion the tentacles touched the bottom of the dish and appeared to adhere to it for a short period. During this time they were slowly contracted, pulling the animal along.

When stimulated with a needle, when either crawling or floating, the tentacles were retracted very rapidly and completely. After a short period, either one or both were very slowly expanded in stages, each stage being interspersed with further rapid complete contractions. No feeding activity was observed.

IDENTIFICATION

Platyctenean ctenophorans have been recorded from many parts of the world, from Greenland (Mortensen, 1912) to Antarctica (P. Dayton and G. A. Robilliard 1968 in Gordon 1969), with records from practically every contient. However, they are still such rare and unusual animals that they have prompted study whenever they have been discoverd and many new taxa have resulted. This has been especially evident when a specimen has been discovered for the first time in a marine faunal zone or geographical region in which this group of animals has not previously been recorded. This phenomenon, coupled with the absence of any clearly defined taxonomically useful characters, has led to a proliferation of specific and generic names and taxonomic confusion.

Several partial revisions of the group, have been undertaken, principally by Dawydoff (1936, 1938), Komai (1934) and others, while a good general account is provided by Hymen (1940). Following this latter work the present specimens are referred to the genus *Coeloplana* because of the presence of erectile dorsal papillae, the absence of comb-plates, and because the statocyst and tentacles are in hidden tentacular sheaths. The specimens are tentatively identified as *Coeloplana willeyi* Abbott (1907), following Matthews and Townsley (1964) and Gordon (1969), because the size, colour and number of dorsal papillae fall within the variation range of this species. However it is recorded as such, more to provide a convenient label for future reference than with any idea of taxonomic exactitude.

Acknowledgements

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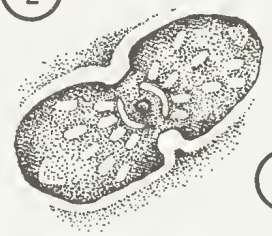

Figs. 1, 2 and 3—Series of drawings of *Coeloplana willeyi* Abbott of the living animal showing the general body shape and the tentacles.
Fig. 4—Central statocyst.
Fig. 5—Animal floating on surface film, using the tentacles for locomotion.

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