

A Review of the Genera of Pectinariidae (Polychaeta) Together with a Description of the Australian Fauna

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ABSTRACT. The polychaete worm family Pectinariidae is represented in Australian waters by five species (*Amphictene favona* n.sp., *A. uniloba* n.sp., *Pectinaria antipoda* Schmarda, 1861, *P. dodeka* n.sp. and *P. kanabinos* n.sp.). *Pectinaria antipoda* is redescribed and a neotype designated. Generic diagnoses are given for all genera including three not known from Australian waters. Additional characters are described for each genus that may facilitate the separation of species. A key to all genera and to species present in Australia is given, as are tables summarising the characters of all described species.

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The family Pectinariidae is poorly known from Australian waters even though it is an easily recognised family with its characteristic “ice-cream cone”-shaped sandy tube. Day & Hutchings (1979) recorded three species in three genera from Australia. Fauchald (1977) recognised five genera worldwide, and elevated several previously recognised subgenera to full generic status, and has been followed in this study. Hartman (1941) recognised five genera or subgenera and provided a key to genera, but little discussion of them. She suggested that *Amphictene*, *Pectinaria* and *Cistenides* are more closely related to each other than to the other two genera, *Lagis* and *Petta*, but does not qualify this statement. Holthe (1986) in his study of the family did not follow Fauchald (1977) and only recognised two genera, *Pectinaria* and *Petta*, and four subgenera within *Pectinaria*, although he does not provide a key to subgenera and stated that “specific characters serve better than the subgeneric ones for the purposes of identification”. He provides no reasons for accepting these as subgenera rather than as separate genera, other than it is a matter of opinion. Similarly, Day (1967) used the concept of the subgenera with no justification. Other studies on pectinariids by Long (1973) and Wolf (1984) have not accepted these subgenera.

We have therefore provided a diagnosis for each genus together with a table providing the diagnostic characters for each species currently assigned to that genus, as well as a table listing the major characters distinguishing the genera.

The family name Pectinariidae Quatrefages, 1865 is used here following the ruling by the International Commission on Zoological Nomenclature (Opinion 1225, 1982) that the name Amphictenidae Grube, 1851 did not have priority over the name Pectinariidae based on common usage.

Although pectinariids are not abundant in benthic samples collected in Australian waters, they are regularly collected but are not easily identified to species as no keys are available. A comprehensive survey of the family was undertaken, examining material available in all Australian museum collections. Five species were distinguished, of which four are new. Two genera were represented. *Pectinaria antipoda* is redescribed and a neotype designated. At least one fossil species of *Pectinaria* has been recorded by Katto (1976), but only living species are included in the relevant table. A key to the world genera and Australian species is given. The distribution of each Australian species is illustrated, with an indication given as to its abundance.