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The Biology of the Genus *Arthritica*

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Abstract

THE biology of three species of leptonid bivalve included in the genus *Arthritica* is discussed with particular reference to their mode of life. *A. crassiformis* lives on the large rock-boring pholad *Anchomasa similis*, in what appears to be a commensal relationship. External appearance and ciliation of the mantle cavity of *A. crassiformis* is described. *A. bifurca* is shown to be free living and closely similar to *A. crassiformis* in structure. A new species is described which lives commensally with the sea-mouse, *Aphrodite australis*, in deep water.

INTRODUCTION

THE superfamily Leptonacea consists of a large number of tiny bivalves whose habits and mode of life are still imperfectly known. Many of these species which have been studied in life have been found to live as commensals with larger burrowing invertebrates, including echinoderms, worms, and crustaceans. Within this assemblage the family Leptonidae is the most imperfectly known. The following account describes some aspects of the biology of the species belonging to the New Zealand leptonid genus *Arthritica*.

Arthritica (Finlay, 1927, p. 463) was originally proposed to cover *Kellia bifurca* and certain undescribed fossil species. Powell (1933a) discussed some aspects of classification, including the fact that so called characteristic limy patches on the inner side of the adductor scars are by no means always seen. This was the main character, according to Finlay (1927), that distinguished the genus. Powell, however, retained the generic name, presumably because the group is compact and distinctive, but no generic description has hitherto been provided. The main conchological features are:—

1. Quadrate shape with relatively short anterior and posterior ends.
2. Anterior end slightly longer than the posterior, produced and acutely rounded below.
3. Surface of shell with minute irregular linear wrinkles or smooth.

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