

## The Anatomy and Relationships of *Emblanda emblematica* (Hedley) (Mollusca: Mesogastropoda: Emblandidae n.fam.)

W.F.PONDER,

Australian Museum,  
P.O. Box A285, Sydney South, NSW 2000, Australia

**ABSTRACT.** A new monotypic family is created for *Emblanda emblematica* (Hedley), a minute rissoacean gastropod from south-eastern Australia. It is unique in the Rissoacea in possessing a triseriate radula and a penial sheath behind the hypobranchial gland. The alimentary canal is modified for specialized feeding on Foraminifera, especially the wide, simple oesophagus, the spacious stomach with an elongate posterior chamber and the very reduced crystalline style. The female has a glandular section of the oviduct behind the albumen gland, which is of importance in separating *Emblanda* from the related family, Barleeidae.

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**KEYWORDS:** *Emblanda*, Emblandidae, Rissoacea, anatomy, radula.

Convergence in minute gastropods has proved to be one of the main problems in achieving a reliable classification. Historically shell characters have been used as the primary means of classification but, in many cases, where the much larger numbers of characters available from anatomical studies have been used to test these classifications, they have been shown to require considerable modification.

The minute, marine gastropod that is the subject of this paper has a shell very similar in appearance to that of some members of the Barleeidae (see Ponder, 1984) and Rissoidae (see Ponder, 1985). An examination of the radula, however, showed it to be very unusual. An anatomical investigation was carried out to establish the relationships of this otherwise rather undistinguished species.

*Emblanda emblematica*, the only known species of *Emblanda*, is a tiny, rare, prosobranch snail found living in algae in the lowest littoral and shallow sublittoral zones in New South Wales, Australia. It has been mentioned only occasionally in the literature. Hedley (1906), when he first described the species thought it was related to the '*Rissoa cheilostoma* group' (i.e. genus *Merelina*, Rissoidae), a suggestion also made by Laseron (1956). Iredale (1924) placed it in *Anabathron*. Iredale (1955: 81) later introduced a new generic name for this species stating that it differed from

*Anabathron* 'in size, coloration and mouth-features'. I have recently indicated that a new family-group taxon might be required for *Emblanda* (Ponder, 1985).

The present account is incomplete, particularly regarding some aspects of the female genital system, mainly because of the small number of specimens available for study. The available material is all that has accumulated over the last fifteen years of collecting micromolluscs in New South Wales. Nonetheless the information presented below is sufficient for a reasonable estimate of the relationships of this genus.

### Material and methods.

The methods used for radular extraction and mounting are given by Ponder & Yoo (1976). Mounts of five radulae were prepared, one being accidentally mounted upside down. Six specimens were fixed in Bouin's fluid and embedded in paraffin. Serial sections were cut at about 4–6 mm and stained with Mallory's triple stain. Three male specimens were dissected but, mainly because of the small size of this animal, the dissections were not very useful; most of the anatomical information has been ascertained from serial sections. No female specimens have been available for dissection and only one mature and two immature females have been sectioned.