



***Fluviopupa* Pilsbry, 1911**

Diagnostic features

Shell small, pupiform to subtrochiform, non-umbilicate, smooth, with thin periostracum; spire convex in outline; aperture with continuous periostome partially free from parietal area, outer lip slightly to moderately opisthocline. The operculum typically has a white smear on its inner side (present in the type species of *Fluviopupa* and some others) but it lacks the opercular pegs that are seen in many tateids. In the radula there is a flexible connection between the 'head' and lateral extension of the lateral teeth. Members of the '*Fluviopupa* group' can be recognized by their penial characters, primarily the possession of a non-glandular swelling associated with the distal section of the penis, although this is lost in some species (Haase *et al.* 2006), and a well-developed gastric caecum. The female genitalia are typical of the family with a globular posterior bursa copulatrix, a well-developed ventral channel with an anterior opening and a seminal receptacle. However the Little Mulgrave River *Fluviopupa* lacks a seminal receptacle.

Species of *Fluviopupa* are similar to those included in *Potamopyrgus*, but differ in having a bilobed penis. This character, together with the simple operculum, also separates the species of *Fluviopupa* from those in other genera on Lord Howe Island.

Classification

***Fluviopupa* Pilsbry, 1911**

Class Gastropoda

Infraclass Caenogastropoda

Order Littorinida

Suborder Rissoidina

Superfamily Truncatelloidea

Family Tateidae

Genus *Fluviopupa* Pilsbry, 1911

Type species: Fluviopupa pupoidea Pilsbry, 1911.

Original reference: Pilsbry, H. A. (1911). Non-marine Mollusca of Patagonia. Princeton University Expeditions to Patagonia, Report. (Ed. William B. Scott.) Vol. 3, pt 2, pp. 513-633.

Type locality: Fiji.

Synonyms: Fluviorissoina (Preston MS) Iredale, 1944; *Pupidrobia* Iredale, 1944

State of taxonomy

We follow Ponder (1982) & Ponder and Shea (2014).

Biology and ecology

The species on Lord Howe Island live only at low altitudes in permanent streams, with many populations confined to disconnected pools during times of low precipitation. They do not seem to favour any particular microhabitat. It is assumed they feed on bacteria, microscopic algae, diatoms and, possibly, decaying vegetation where snails are abundant. Furthermore, leaves are sometimes reduced to the veins, apparently as a result of feeding by the snails. The Mulgrave River and Little Mulgrave River *Fluviopupa* lives in root mats and amongst leaves along edges of side ponds and the main river channels and tributary streams.

Distribution

Mulgrave River and Little Mulgrave River in the Wet Tropics of Far North Queensland, as well as some tropical Pacific islands - Fiji, New Hebrides, Rapa Island, New Caledonia, Lord Howe Island and possibly New Guinea.

Notes

Further reading

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Zielske, S. & Haase, M. (2014). New insights into tateid gastropods and their radiation on Fiji based on anatomical and molecular methods (Caenogastropoda: Truncatelloidea). *Zoological Journal of the Linnean Society* 172: 71-102.

Zielske, S., Ponder, W. F. & Haase, M. (2017). The enigmatic pattern of long-distance dispersal of minute freshwater gastropods (Caenogastropoda, Truncatelloidea, Tateidae) across the South Pacific. *Journal of Biogeography* 44: 195-206.

https://keys.lucidcentral.org/keys/v3/freshwater_molluscs/

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