



Glyptophysa georgiana (Quoy and Gaimard, 1832)



Glyptophysa georgiana (adult size up to 24.5 mm)



Glyptophysa georgiana. Perched dune lake at Thistle Cove, south Western Australia. Photo: A. Hara & M. Klunzinger.



Distribution of *Glyptophysa georgiana*.

Disclaimer

This genus is in need of revision, as the species concepts we have used have not been rigorously tested. Unpublished molecular data indicate that the species units we are using here are not accompanied by clear-cut morphological characters that allow separation based on shell characters alone. As the species units appear to be overall concordant with state boundaries, we have used these boundaries to aid delimiting species. This situation is not ideal, and can only be resolved by additional molecular and morphological studies involving dense sampling.

Diagnostic features

The taxonomy of *Glyptophysa* is very poorly understood. This is one of several species of relatively smooth shelled *Glyptophysa* that are variable in shape and in periostracal development (periostracal hairs and spirals can be present), even within a single population. A large number of species-group names are available and it is quite possible that more species occur in Australia. At present we are recognising only three, in addition to *G. aliciae*.

This species, as we recognise it, is restricted to SW Western Australia.

Classification

Glyptophysa georgiana (Quoy and Gaimard, 1832)

Common name: South-western pouched snail

Class Gastropoda

Infraclass Heterobranchia

Megaorder Hygrophila

Order Lymnaeida

Superfamily Planorboidea

Family Planorbidae

Subfamily: Miratestinae

Genus *Glyptophysa* Crosse, 1872

Original name: *Physa georgiana* Quoy and Gaimard, 1832. In Quoy, J.R., & J.-P. Gaimard (1834). *Voyage de Découvertes de l'Astrolabe exécuté par Ordre du Roi, Pendant les Années 1826– 1827, 1828, 1829, sous le commandement de M. J. Dumont d'Urville. Vol. 3, part 1. Pp. 366. Paris: J. Tastu Zoologie.*

Synonym: *Physa quoyi* E. A. Smith, 1882.

Type locality: George's Sound (=King Georges Sound), Western Australia.

State of taxonomy

The taxonomy of *Glyptophysa* is very poorly understood. A large number of species-group names are available and it is quite possible that more species occur in Australia.

This species is one of three that we are somewhat tentatively recognising (see statement under Notes) that were previously referred to as *Glyptophysa gibbosa* (now treated as a synonym of *G. novaehollandica*). These taxa are in need of revision, as the species concepts we have used have not been rigorously tested.

Biology and ecology

On water weeds, wood, and similar substrates, in ponds, billabongs, swamps, and sluggish streams and rivers. Feeds on algae and detritus. Egg mass typically a bean(kidney)-shaped jelly strip containing many small eggs. Development direct.

Distribution

South-western Western Australia.

Notes

This genus is similar to the common introduced *Physa acuta* (Physidae) in that both have similar-shaped, sinistral shells. *Glyptophysa* can be distinguished by the shell not being completely smooth (as it is in *Physa*), *Glyptophysa* often having some periostracal ornament and microscopic wrinkles or spiral ridges in the case of *Glyptophysa aliciae*. *Physa* has a mottled mantle which can usually be seen through the semi-transparent shell whereas *Glyptophysa* has a uniformly dark-coloured mantle. The animal of *Physa* has digitations (finger-like

processes) along the mantle edge against the columella whereas this edge is smooth in *Glyptophysa*. *Physa* lacks a false gill (pseudobranch) which is present in *Glyptophysa* and all planorbids. The animal of *Glyptophysa*, if damaged when alive, has red-coloured blood whereas *Physa* blood is clear.

Glyptophysa differs from the otherwise similar genus *Isidorella* in the penial apparatus having a penial stylet and an accessory flagellum. *Isidorella* lacks a stylet and an accessory structure but the penis has two lobes.

This genus is in need of revision, as the species concepts we have used have not been rigorously tested. Unpublished molecular data indicate that the species units we are here using appear to be justified, however they are not accompanied by clear-cut morphological characters that allow separation based on shell characters alone. As the species units appear to be overall concordant with state boundaries, we have used these boundaries to aid in delimiting species. This situation is not ideal, and can only be resolved by additional molecular and morphological studies involving dense sampling.

Further reading

Hubendick, B. (1955). Phylogeny of the Planorbidae. *Transactions of the Zoological Society of London* 28: 453-542.

Smith, B. J. (1992). Non-marine Mollusca. Pp. i-xii, 1-408 in W. W. K. Houston. *Zoological Catalogue of Australia*, 8. Canberra, Australian Government Publishing Service.

Walker, J. C. (1988). Classification of Australian buliniform planorbids (Mollusca: Pulmonata). *Records of the Australian Museum* 40: 61-89.

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

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