



***Taiwanassiminea* Kuroda and Habe, 1950**

Diagnostic features

Shell ovate conic to conic, imperforate to distinctly perforate, commonly with distinct spiral ridge or groove surrounding umbilicus, smooth or with subsutural, suprasutural or peripheral cord on last whorl; colour uniform or with two to four colour bands on last whorl. Sutures moderately to deeply impressed. Operculum pyriform to subcircular, flattened or concave, paucispiral, horny, thin, translucent yellow to white, or entirely transparent. Calcareous deposit absent. Head with only eye lobes, cephalic tentacles absent. Foot large, wide, with simple flat sole.

Classification

Taiwanassiminea Kuroda and Habe, 1950

Class Gastropoda

Infraclass Caenogastropoda

Order Littorinida

Suborder Rissoidina

Superfamily Truncatelloidea

Family Assimineidae

Subfamily: Assimineinae

Genus *Taiwanassiminea* Kuroda and Habe, 1950

Type species: *Assiminea* (*Assiminopsis*) *hayasii* Habe, 1942, by original designation.

Original reference: Kuroda, T. & Habe, T. (1950) Nomenclatural notes. *Illustrated Catalogue of Japanese Shells* 1, 16.

Type locality: Taiwan.

Synonym: *Assiminopsis* Habe 1942: 44–45 (non Locard 1897).

State of taxonomy

Taiwanassiminea includes both amphibious and fully terrestrial species. The strongly supported clade indicated by a recent molecular analysis and encompassing *T. affinis*, and two northern Australian species (one freshwater and one terrestrial), warrants further study. This is because such a seemingly non-marine lineage is unusual among Australian mainland Assimineidae (the vast majority of which occurs in mangrove and saltmarsh habitats), and additional study may elucidate adaptations for semi-terrestrial and terrestrial environments.

Biology and ecology

Semi-terrestrial in low salinity conditions in the upper tidal reaches of rivers and large streams, where it can be common under dead leaves, bark and stones, or around the bases of plants, including grasses, on muddy banks. It occurs in the upper half of the intertidal zone to the high tidal line, or slightly above, and can be abundant. A terrestrial species assigned to this genus occurs in doleritic rock scree among leaf litter, vine thickets and fig vegetation on Middle Osborn Island, Kimberley, Western Australia (Hallan & Fukuda, 2015).

Distribution

The genus is widely distributed in the Indo-Pacific region. In Australia, it ranges from the northwest, across the north and southward to southern New South Wales.

Notes

Taiwanassiminea includes both amphibious and fully terrestrial species. The strongly supported genetic lineage indicated by a recent molecular analysis and encompassing *T. affinis*, and two northern Australian species (one freshwater and one terrestrial), warrants further study. This is because such a seemingly non-marine lineage is unusual among Australian mainland Assimineidae (the vast majority of which occurs in mangrove and saltmarsh habitats), and additional study may therefore elucidate such apparent adaptations into semi-terrestrial and terrestrial environments.

Willan & Kessner (2021) record an apparently undescribed species that is somewhat similar to *T. affinis* known from two freshwater creeks flowing into the Daly River, Northern Territory. This is figured by them (their figure 22).

Further reading

Beesley, P. L., Ross, G. J. B. & Wells, A., Eds. (1998). *Mollusca: The Southern Synthesis. Parts A & B*. Melbourne, CSIRO Publishing.

Fukuda, H. (2019). Assimineidae H. & A. Adams, 1856. Pp. 94-100 in C. Lydeard & Cummings, K. S. *Freshwater Mollusks of the World: a Distribution Atlas*. Baltimore, John Hopkins University Press.

Fukuda, H. & Ponder, W. F. (2003). Australian freshwater assimineids, with a synopsis of the Recent genus-group taxa of the *Assimineidae* (Mollusca: Caenogastropoda: Rissooidea). *Journal of Natural History* 37: 1977-2032.

Fukuda, H., Ponder, W. F. & Hallan, A. (2015). Anatomy, relationships and distribution of *Taiwanassiminea affinis* (Böttger) (Caenogastropoda: Assimineidae), with a reassessment of *Cyclotropis* Tapparone-Canefri. *Molluscan Research* 35: 24-36.

Hallan, A. & Fukuda, H. (2015). *Taiwanassiminea phantasma* n. sp.: a terrestrial assimineid (Caenogastropoda: Truncatelloidea) from Middle Osborn Island, Kimberley, Western Australia. *Molluscan Research* 35: 112-122.

Willan, E. C. & Kessner, V. (2021). A conspectus of the freshwater molluscs of the Daly River catchment, Northern Territory. *Northern Territory Naturalist* 30: 108-137.

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

To contact the authors for comment or suggestions, please email: fmollusc@gmail.com

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