

AUSTRALIAN GASTROPODA OF THE FAMILIES HYDROBIIDAE, ASSIMINEIDAE AND ACMEIDAE

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PLATE IV AND V

In this paper the genera and species of the difficult families Hydrobiidae, Assimineidae and Acmeidae are discussed, and an effort is made to decide which genera are correctly used for the Australian species, which are valid and which are synonyms. Each genus listed is followed by the author, date, genotype, locality and distribution. The first locality is that of the type.

Family HYDROBIIDAE

Genera represented in Australia and Tasmania are *Tatea*, *Petterdiana*, *Tasmaniella*, and *Austropyrgus* gen. nov. The species of *Tatea* have been dealt with in the previous part of this journal (66, (1), 81). The whole of the species of the other three genera are here reviewed. An extensive representative series of the numerous Tasmanian species of this family is in the May Collection, which was purchased some years ago by Sir Joseph Verco and presented to the South Australian Museum.

Genus PETTERDIANA Brazier 1895

Petterdiana Brazier 1895, Proc. Roy. Soc. Tasm., 105. Genotype *Ampullaria tasmanica* Tenison Woods 1876, North Tasmania.

Brazieria Petterd 1888, Proc. Roy. Soc. Tasm., 76 (same genotype), nec *Brazieria* Ancey 1887, Conch. Exch., 2, 22.

Pseudampullaria Ancey 1898, Bull. Mus. Marseille, 1, 147.

Distribution—Northern Tasmania.

The generic description reads: "Shell globosely rounded, imperforate; spire small, body-whorl large; aperture very oblique, effuse; outer lip acute, inner lip thickened; operculum horny, subspiral. Animal, ?" Conchologically this genus is closely allied to the next, *Tasmaniella*, but differs in the more globose shell with shorter spire.

Species recorded are: *Petterdiana paludinea* Reeve 1857, "Tasmania" (= *tasmanica* Tenison Woods 1876, North Tasmania = *tasmaniae* Tate and Brazier 1881, Tasmania); *tasmanica* Tenison Woods 1875, Goulds Country, North-East Tasmania.

Genus TASMANIELLA Ancey 1898

Tasmaniella Ancey 1898, Bull. Mus. Marseille, 1, 148. Genotype *Amnicola launcestonensis* Johnston 1878, North Tasmania.

Beddomeia Petterd 1888, Proc. Roy. Soc. Tasm., 73, genotype *B. launcestonensis* Johnston 1878, preocc., *Beddomea* Neville 1878, Hand List Moll, Ind. Mus., 1, 127, for a land snail.

Distribution—Northern Tasmania.

This genus appears to have been overlooked by Australian and Tasmanian conchologists. Whether it will survive as a separate genus or will be placed as a synonym of the previous one is a matter to be decided by future study. Species we allot to this genus are: *Tasmaniella launcestonensis* Johnston 1878, Launceston and South Esk River; *minima* Petterd 1888, stream near Heazlewood River, North-west Tasmania; *hullii* Petterd 1888, stream near Heazlewood River; *lodderae* Petterd, creek near Upper Castra, River Leven, North-west Tasmania.

Austropyrgus gen. nov.

Genotype *Paludina nigra* Quoy et Gaimard 1935, from small freshwater creeks, D'Entrecasteaux Channel, Tasmania.

Distribution—South Australia, Victoria, New South Wales, and Tasmania.

Shell small, moderately elongated, pointed, whorls four and a half, convex, typically smooth though sometimes more or less sharply carinated or even bearing a spiral line of interrupted pointed spines, variations which might occur in the same species in different localities or may be all represented in the one species in the one pool; in stagnant or still water the shell may be black due to an external coat of decaying vegetable matter, whereas in clear running water the shell is pale yellowish horn-coloured and subtranslucent. Operculum thin, corneous, paucispiral. Animal with a narrow foot which is expanded in front, opaque, white shaded with very pale bluish-grey, tentacles and rostrum shaded with dark bluish-grey; tentacles long, slender and pointed; eyes plainly visible under the lens at the outer base of the tentacles; rostrum thick, projecting and wrinkled; radula with central basal lobe of the rachidian tooth much produced, first lateral very much bent bearing twelve round denticles, second lateral bearing similar denticles which are however in this genus separated and number eleven, marginal tooth with five obsolete denticles; formula of denticles 9/3·3–12–11–5.

Australian and Tasmanian species of this genus have been erroneously placed in various non-Australian genera such as *Hydrobia*, *Bythinella*, *Bythinia*, *Potamopyrgus*, all of which show some conchological similarity but considerable dissimilarity in the animal. A brief description of some of these genera, based on their genotypes is here given to show that minute examination of the animal is essential to the classification of certain groups of freshwater shells. The New Zealand genus *Potamopyrgus* is probably the most nearly related to *Austropyrgus*.

Hydrobia Hartmann 1821. Genotype *Hydrobia acuta* Draparnaud, Europe. Shell ovate, smooth, elongate, subperforate, whorls flattened, apex acute; operculum corneous; animal with foot somewhat pointed behind, rostrum rather long, tentacles somewhat tapering but blunt at the extremity, verge (male organ) simple; radula with rachidian tooth broad with a central basal process; formula long, tentacles somewhat tapering but blunt at the extremity, verge (male organ) of denticles 7/1·1–6–13–25. *Distribution*—Northern Hemisphere.

Bythinella Mouquin-Tandon 1855. Genotype *Bulinus viridis* Poirer, Europe. Shell smooth, elongated, imperforate, whorls rounded, apex obtuse; operculum corneous with the nucleus moderately large; animal with foot rather narrow, rounded behind, rostrum moderately long, tentacles tapering but blunt at the tip, verge typically bifid; radula with rachidian tooth moderately long, with the infero-lateral angles much produced, first lateral with the body longer than broad; formula of denticles 9/1·1–6–18–0. *Distribution*—Europe and North America. Incidentally there appear to be at least two names which have priority. They are *Microna* Ziegler 1852 and *Frauenfeldia* Clessin 1879. Some authors quote *Bythinella* as 1851, but it does not seem to have been correctly introduced as a latinised scientific name until 1855.

Potamopyrgus Stimpson 1865. Genotype *Amnicola corolla* Gould 1852. Shell short, whorls coronated with spines, imperforate, apex acute; operculum corneous; animal with foot rather short, broadest in front and strongly auriculated, rostrum moderately long, tentacles very long slender tapering and pointed, verge ?; radula with rachidian tooth trapezoidal, first lateral with a very long peduncle, third lateral with summit shaped like a chopping-knife; formula of denticles 9/4·4–11–15–20. *Distribution*—New Zealand, freshwater.

The species belonging to the genus *Austropyrgus* are as follows:

(a) Rivers of Victoria and Northern Tasmania, and Eastern New South Wales.

Austropyrgus buccinoides Quoy and Gaimard 1835, Western Port, Victoria, brackish swamps (= *victoriae* Tenison Woods 1878, Lake Connemara, Geelong, Victoria = *angasi* Smith 1882, Compasely River, Victoria); *ruppiac* Hedley 1912, Deewhy Lagoon, a few miles north of Sydney, seems closely allied to the preceding; *grampianensis* Gabriel 1939, Dairy Creek, near Silver Band Falls, Grampians, Victoria; *tasmanica* Von Martens 1858, North Tasmania (= *diemenense* Frauenfeld 1865, North Tasmania = *dulvertonensis* Tenison Woods 1875, Lake Dulverton, North Tasmania = *woodsi* Petterd 1888, South Esk River, North Tasmania); *petterdiana* Brazier 1875, Emu Bay, North Tasmania (= *nigra* Gabriel 1939, Victoria); *brownii* Petterd 1879, stream at Long Bay, North-east Tasmania; *elongatus* May 1920, Apsley River, near Bicheno North, East Coast, Tasmania; *marginata* Petterd 1888, stream near the Heazlewood River, tributary of the Whyte, North-west Tasmania; *smithii* Petterd 1888, Heazlewood River, also Arthur, Waratah and Castray Rivers, on stones, North-west Tasmania; *brazieri* Smith 1882, South Grafton, Clarence River, New South Wales; *petterdi* Smith 1888, Richmond River, New South Wales; *hyalina* Brazier 1875, Eastern Creek, New South Wales, distributed about Parramatta and Chatsworth; *vertiginosa* Frauenfeld 1862, "New Holland," probably New South Wales; *schraderi* Frauenfeld 1862, "Australia"? probably New South Wales. The last three species may prove to belong to another genus, as the operculum of at least one of them (*australis*) is calcareous, and it is quite probable that the other two have a similar type of operculum.

(b) Rivers of South Tasmania.

Austropyrgus nigra Quoy and Gaimard 1835, D'Entrecasteaux Channel, South Tasmania, widely distributed (= *unicarinata* Tenison Woods 1875, ? South Tasmania = *tasmanica* Tenison Woods, Hobart, South Tasmania = *legrandi* Tenison Woods 1875, Browns River = *exigua* Tenison Woods 1879, nom. nov. for *legrandi* = *legrandiana* Brazier 1871, Salmon Ponds, New Norfolk = *wise-maniana* Brazier 1871, creeks near Hobart; all varieties or direct synonyms and all from South Tasmania); *gunnii* Frauenfeld 1863, South Tasmania (= *simsoniana* Brazier 1871, Hobart, Tasmania = *pontvillensis* Tenison Woods 1875, Jordon River, near Brighton, South Tasmania = *dunrobinensis* Tenison Woods 1875, from the Ouse, near Dunrobin); *turbinata* Petterd 1888, River Styx, tributary of the Derwent, South Tasmania.

(c) Rivers of South Australia.

Austropyrgus pattisoni Cotton 1842 (*Bythinella*) River Torrens at Paradise Park, South Australia; the Victorian species *buccinoides* occurs in the South-East of South Australia. We have it from Eight Mile Creek, in that area.

Genus GABBIA Tryon 1865

Gabbia Tryon 1865, American Journ. Conch., 1, 220. Genotype *Gabbia australis* Tryon 1865, New South Wales.

Gabbia iredalei sp. nov.

(Pl. iv, fig. 3, 4, 5)

Shell small turbinate, smooth; whorls globose, apex obtuse and eroded in some specimens, lines of growth slightly irregular, fine; umbilicus minute, aperture oblique; operculum paucispiral, horny but slightly calcareous, with a central nucleus.

Holotype—Height 7 mm., width 5.5 mm., D. 14098, S. Aust. Museum, Storm Creek, Central Australia.

Distribution—Central Australia, Storm Creek, Oodnadatta, etc.

This species is distinguished from the New South Wales genotype by the difference in general shape and comparatively greater width.

Family ASSIMINEIDAE

A few Australian species have been placed in the genus *Assimineca* the genotype of which is European, and other species are recorded from Asia and America. Subgenera have been introduced for Indian and Chinese species, while *Met-assimineca* Thiele 1927, genotype *M. philippinica* Boettger, is recorded from the Philippines and Australia. Australian species are here placed in the typical genus *Assimineca*, though there is some doubt as to the correctness of regarding our species as belonging to this genus.

ASSIMINEA Fleming 1928

Assimineca Fleming 1828, Hist. Brit. Anim, 275. Genotype *A. grayana* Fleming 1928, Naples.

Distribution—European.

Conchologically there is not much difference between the Australian and European species, and still more remarkable is the similarity of the radula of the genotype and *A. tasmanica* Tenison Woods.

Australian species are marine, estuarine and amphibious. They are here listed.

Assimineca granum Menke 1843, Swan River, Western Australia, among white quartz sand; this species is common in South Australia, where it is frequently found living in the tidal influence of rivers. We have found it from Robe, Henley Beach, Venus Bay, Beards Bay, Murat Bay, Denial Bay, American River, Kingston, Streaky Bay also dredged specimens from 35 fathoms, off St. Francis Island, and at localities in Western Australia such as King George Sound, and Albany; *tasmanica* Tenison Woods 1876 Sorell, North Tasmania, in shallow inlets and mudflats, amphibious also from Port Phillip, Port Fairy, and Warrnambool, Victoria, and coastal New South Wales, and also Port River and Gulf St. Vincent, South Australia (= *Rissoa siennae* Tenison Woods 1876, North Coast, Tasmania = *A. bicincta* Petterd 1888, mouth of the River Don, North Coast, Tasmania, "obtained living on stones and grass within the influence of the tide in company with *Tatea rufilabris*," i.e., *huonensis* = *australis* Tate 1888, Kelso, Tamar Heads, North Tasmania); *brazieri* 1875, Isthmus Bay, Bruni Island, South Tasmania, "very plentiful entangled in confervoid growths on rocks" described as a *Rissoina*; *pagodella* Hedley 1903, Manly Lagoon, New South Wales, in brackish water.

Assimineca relata sp. nov.

(Pl. iv, fig. 1, 2)

Assimineca affinis Mousson 1874, Cat. Godeffroy Museum, 5, 103, nom. nud.

Holotype—Height 5 mm., width 3 mm., Burleigh Heads, Queensland, D. 14099, S. Aust. Museum.

This species is more elongate and of a different shape from *A. tasmanica*.

Family ACMEIDAE

About a dozen genera from various parts of the world are placed in this family, and three, *Acmea*, *Coxiella*, and *Coxielladda*, are represented in Australia.

Genus *ACMEA* Hartmann 1821

Acmea Hartmann 1821, *Neue Alpina*, 1, 204. Genotype *A. truncata* Hartmann (designated Iredale 1915).

Truncatella Risso 1826, II. N. Europe, 4, 124. Genotype *T. subcylindrica* Linn.

Truncatula Leach 1847, *Ann. Mag. Nat. Hist.*, 20, 271. Genotype *T. truncata*.

***Acmea vincentiana* sp. nov.**

(Pl. v, fig. 11-13)

Truncatella marginata Cox 1868, *Mon. Aust. Land Shells*, 92; Verco 1912, *Trans. Roy. Soc. S. Aust.*, 36, 203, nec Kuster 1885.

Acmea marginata (May 1921), *List Moll. Tas.*, 57.

Holotype—Height 6.3 mm., width 2.25 mm., Glenelg, South Australia, D. 14106, South Australian Museum.

Distribution—Geraldton, Western Australia, South Australia to Victoria and Northern Tasmania, Recent and Pleistocene.

Shell pyramidal in the juvenile, with an obtuse apex, and in the adult sub-cylindrical with a domed apex; shining, smooth, amber-coloured or pale translucent flesh-coloured in life, with a narrow smooth semi-opaque white subsutural band; adult whorls four to five, a little convex, finely sculptured with axial accremental striae but otherwise smooth; aperture vertical, angularly oval, broadened slightly at the base, peristome continuous, rather expanded; operculum subspiral.

This species was first described and figured by Cox in 1868 from Port Lincoln, South Australia, but he identified it as *marginata* Kuster 1855, a different species described from Labuan, Borneo. The only similarity between that species and *vincentiana* is the tendency to smooth whorls and lack of prominent axial sculpture so common in this genus. The present species differs in the more bulbous shape of the whorls, the much more strongly developed aperture and the tendency to the formation of an opaque white band below the suture; on looking through a large series of specimens from the Flindersian Region there seems sufficient evidence to suspect that more than one species of "smooth" *Acmea* exists.

Found in great numbers along the Southern Australian coastline as a Pleistocene fossil on the raised beaches, and Recent from Western Australia to Western Victoria and also Northern Tasmania. Other species are *scalarina* Cox 1868, Port Lincoln, South Australia (= *Truncatella tasmanica* Tenison Woods 1876, Bass Strait = *Turbonilla tasmanica* Tenison Woods 1876, King Island, Bass Strait = ? *micra* Tenison Woods 1878, Brighton, Victoria). Also occurs in the Recent and Pleistocene from Geraldton to Victoria and is common at certain places on Kangaroo Island; *valida* Pfeiffer 1846, New South Wales (= *brazieri* Cox 1868, Millers Point, Sydney, New South Wales), distributed along the New South Wales and eastern Victorian coast; *ferruginea* Cox 1868, Cape York, North-East Australia, distributed along the Queensland coast and Northern Territory; *teres* Pfeiffer 1856, Trinity Bay, North-East Australia, distributed along the eastern coast of Queensland; *yorkensis* Cox 1868, Cape York, north and eastern coasts of Queensland.

In life the shell of *A. scalarina* may be translucent, transparent or horn-coloured, and when dead it may be white, salmon tint or bleached. The juvenile shell is narrowly pyramidal, whorls round, apex blunt, axial ribs numerous, fading rapidly at the periphery of the last whorl the base of which is smooth, aperture without a definite outer lip which is broken and occasionally corresponds with the curved axial sculpture, general shape of the aperture vertically oval, very slightly channelled at the base; adult shell more solid and may be nearly cylindrical or



Cotton, Bernard C. 1942. "Australian Gastropoda of the families Hydrobiidae, Assimineidae and Acmeidae." *Transactions of the Royal Society of South Australia, Incorporated* 66(2), 124–129.

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