

# A REVIEW OF THE AUSTRALIAN SPECIES ASSIGNED TO *RISSOPSIS* GARRETT WITH A DESCRIPTION OF A NEW SPECIES OF *RISSOPSETIA* (MOLLUSCA: GASTROPODA).

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Plate 5

## SUMMARY

The species referred to *Rissopsis* in Australia are reviewed and reassigned to *Epigrus* (*R. columnaria* May) (*Rissoidae*), *Herviera* (*R. bulminoides* Tate and May), *Eusetia* (*Austrorissopsis*) (*R. consobrina* Tate and May, = *R. brevis* May) and *Rissopsetia* (*R. maccayi* (T. Woods)) (*Pyramidellidae*). A new species of *Rissopsetia* (*R. altispira*) from north Western Australia is described, *Rissopsetia maoria* Dell is recorded from Bass Strait and *Epigrus gracilis* Oliver is included in *Rissopsetia*.

## INTRODUCTION

*Rissopsis* Garrett is one of several genera that have been used as a "dumping ground" for small, rather featureless, "rissoaform" gastropods, partly because the original description of the genus and the type species was brief and the only illustration poor. An assessment of the genus *Rissopsis* and of the Australian species assigned to it, is the purpose of this review, which is undertaken as part of a study of the Australian Rissoacea. Although some of the results are not entirely conclusive, because only the shells are available for study, assessment of taxonomic position based on shell-characters is considered to be sufficiently valid to reassign the species involved to 3 genera in 2 families.

## TAXONOMY

The genus *Rissopsis* was introduced by Garrett (1873: 228) for a new species *R. typica* from "Viti and Samoa Isles". Since then *Rissopsis* has been used for a heterogeneous assemblage of tall, smooth, white shells without any particularly distinctive apertural or sculptural features. Garrett apparently intended his genus to be included in the Pyramidellidae as he introduced it next to species of that family and not near his new rissoid species. Later authors have followed Tryon (1887) in including *Rissopsis* in the Rissoidae. Tryon (1887: 359) used *Rissopsis* as a subgenus of *Rissoia* Fréminville, 1814 (= *Rissoa*) and included only the type species, whereas Cossmann (1921: 46) made *Rissopsis* a subgenus of *Ceratia* H. & A. Adams, 1854, and included two Eocene species from the Paris Basin.

Thiele (1929: 161) used *Rissopsis* as a doubtful "section" of *Cingula* Fleming, 1828 in the Rissoidae, and Wenz (1939: 611) used it as a questionable subgenus of *Cingula*. Coan (1964) in his list of genera of the Rissoi-



dae, listed *Rissopsis* and *Eusetia* Cotton, 1944 (see below) as "groups of uncertain position and rank" within his new subfamily Cingulinae. Ponder (1965, 1967) gave *Rissopsis* generic standing in the Rissoinae and (1967) tentatively listed *Antinodulus* Cossmann and Peyrot, 1919, *Peringiella* Monterosato, 1878 and *Pisinna* Monterosato, 1878 as subgenera, a course now known to be erroneous as these three groups probably require generic recognition and none have any close relationship with *Rissopsis*.

Several Recent Australian species have been included in *Rissopsis*. These include 5 species described from Tasmania:—

*Rissopsis brevis* May, 1919

*Rissopsis buliminoides* Tate and May, 1900

*Aclis columnaria* May, 1910

*Rissopsis consobrina* Tate and May, 1900

*Rissoa* (*Ceratia*) *maccoyi* T. Woods, 1876

Three N.S.W. species were placed in *Rissopsis* by Laseron (1950). Of these *R. puniceus* Laseron, 1950 was transferred to *Heterorissosia* Iredale, 1912 by Iredale and McMichael (1962). Laseron (1950) also recorded from N.S.W. *R. brevis* and, doubtfully, *R. maccoyi*.

*Heterorissosia* is now regarded as a subgenus of *Rissoella* M. E. Gray, 1850 (Ponder, 1966), in the family Rissoellidae. *R. punicea* is certainly a *Rissoella* but investigation of the animal is required to ascertain the correct subgenus. This species will not be dealt with further herein.

Powell (1930) described the Recent *Rissopsis expansa* from New Zealand, and three New Zealand fossil species *R. nukumaruensis* Laws, 1940, *R. castlecliffensis* Finlay, 1930 and *R. fricta* Finlay, 1930, have also been described. Cotton (1944) erected the genus *Eusetia* for *R. expansa* in which he included all of the Australian species known as *Rissopsis* at the time. Dell (1956) included *R. nukumaruensis* and *R. maccoyi* in his new genus *Rissopsetia* (type species *R. maoria* Dell, 1956). Powell (1930), Cotton (1944) and Dell (1956) have indicated that the species assigned to *Eusetia* and *Rissopsetia* have heterostrophic protoconchs but retained these genera in the Rissoidae. Ponder (1967) has shown that the position of the eyes in relation to the cephalic tentacles, the lack of a radula and the heterostrophic protoconch of the type species of both *Eusetia* and *Rissopsetia* suggests placement of these genera in the Pyramidellidae.

Ponder (1965) erected *Austrorissopsis* to cover the Australian species included in *Eusetia* by Cotton (1944) and into which Grant-Mackie and Chapman-Smith (1971) placed the New Zealand fossil species *castlecliffensis* and *fricta* as well as a new species *ponderi*. It is not proposed to deal with the New Zealand fossil species placed in *Austrorissopsis* further, as these have not been examined.

Cotton (1944) remarks that the type of *Rissopsis*, *R. typica*, is a "most peculiar species from Viti and Samoa Islands, which is a long exsert shell with constricted and abnormally narrow whorls with a tendency to oblique, twisted plications more or less obsolete". This description is based on Garrett's poor figure which, as an examination of the type has shown, has misled previous workers in assessing the relationships of this species.





1



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PLATE 5.

- 2-4. *Rissopsetia altispira* n. sp. Holotype. 2. Whole shell, x 61. 3. Protoconch, x 308. 4. Sculpture on penultimate whorl, x 617.  
1. *Rissopsetia maccoyi* (T. Woods). Tasmania (Australian Museum C. 10631), Protoconch, x 82.



In the following taxonomic section the Australian species mentioned above (with the exception of *Rissoella punicea*) are re-assessed and included in two families, the Rissoidae and the Pyramidellidae.

## FAMILY RISSOIDAE

### *Rissopsis* Garrett, 1873

Type species: *Rissopsis typica* Garrett, 1873. Monotypy.

**Diagnosis:** Shell very tall and narrow, rather large for family (about 10 mm in length), translucent, with tiny, tightly coiled planorbid protoconch of about  $1\frac{1}{2}$  whorls. Whorls of teleoconch long, flat. Aperture with complete peristome, an oblique, straight, smooth columella and rather wide, well developed, smooth inner lip; outer lip extended, thin.

The only known species is *R. typica* Garrett from "Viti" (Fiji) and Samoa Islands, Pacific Ocean. This genus is tentatively placed in the Rissoidae on the basis of its aperture and protoconch characters. The protoconch is broken in the lectotype and in the paralectotype examined the protoconch is worn and the apex missing. The only other specimens available were an unlocalised specimen in the South Australian Museum (which has part of the protoconch remaining) and a specimen from Kwajakin, Marshall Islands, in the University of Hawaii which had a complete protoconch. The tall translucent teleoconch suggests the Eulimidae but the protoconch and aperture are not typical of that family. Until the animal of this species can be examined the familial placement must remain in doubt.

The type material of *Rissopsis typica* consists of two syntypes held by The Academy of Natural Sciences of Philadelphia (reg. no. 19075), one 9.94 mm in length, the other 7.50 in length. It is the former which agrees with Garrett's dimensions (10mm) and it is here chosen as the lectotype (text fig. 1).

### *Epigrus* Hedley, 1903

Type species: *Rissoa ischna* Tate, 1899, = *Rissoina cylindracea* T. Woods, 1878. Original designation.

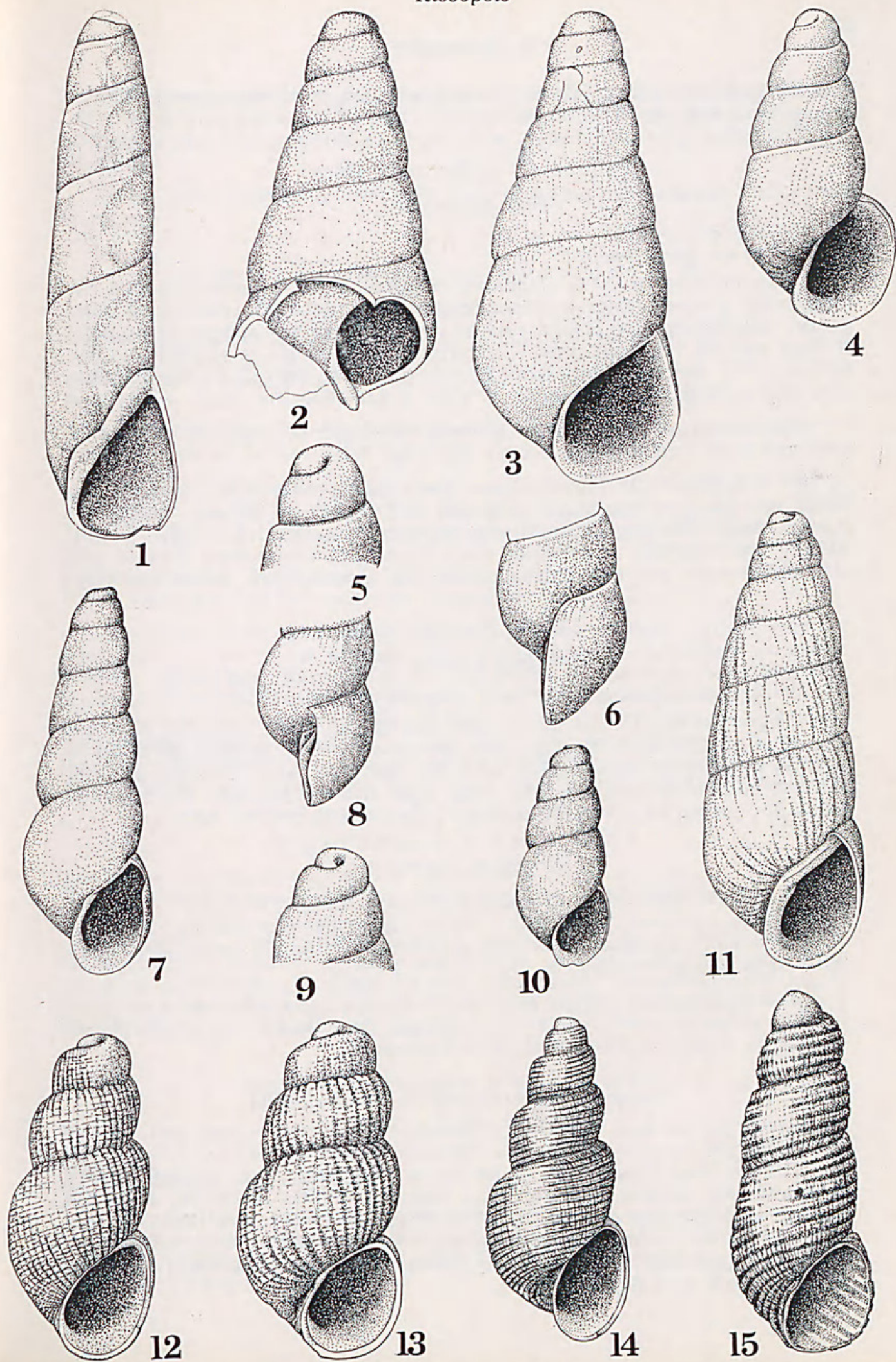
**Diagnosis:** Shell solid, smooth, with tall spire, lightly convex whorls

#### TEXT FIGURES 1-15.

1. *Rissopsis typica* Garrett. Lectotype (Academy of Natural Sciences, Philadelphia, No. 19075). Height 9.94 mm, diameter 2.45 mm.
- 2-3. *Epigrus* (?) *columnaria* (May). 2. Holotype (Tasmanian Museum, No. 7736/E455); height of fragmentary shell 4.00 mm, diameter 1.90 mm. 3. Paratype (Tasmanian Museum, No. 18391/E2856). Height 4.30 mm, diameter 1.82 mm.
- 4-6. *Eusetia* (*Eusetia*) *expansa* (Powell). 4. Holotype. (Powell Collection, Auckland Institute & Museum, No. 4851) height 1.45 mm, diameter 0.7 mm. 5. Protoconch. 6. Aperture.
- 7-10. *Eusetia* (*Austrorissopsis*) *consobrina* (Tate & May). 7. Holotype (Tasmanian Museum, No. 7799/E456); height 3.52 mm, diameter 1.18 mm. 8. Aperture (specimen from Frederick Henry Bay, Tasmania. Australian Museum, C. 10807). 9. Protoconch (specimen from same lot as fig. 8). 10. Holotype of *Rissopsis brevis* May (Tasmanian Museum, No. 7794/E453); height 2.00 mm, diameter 0.80 mm.
11. *Herviera buliminoides* (Tate & May). Holotype (Tasmanian Museum, No. 7795/E454); height 4.25 mm, diameter 1.45 mm.
- 12-13. *Rissopsetia maoria* Dell. 12. Holotype (National Museum, New Zealand, M. 8204); height 1.5 mm, diameter 0.64 mm. 13. 750 m, Bass Strait (Australian Museum C. 92156); height 1.65 mm, diameter 0.76 mm.
14. *Rissopsetia maccoyi* (T. Woods). Derwent Estuary, Tasmania (Australian Museum, C. 92158); height 2.26 mm, diameter 1.02 mm.
15. *Rissopsetia gracilis* (Oliver). Topotype (Australian Museum, C. 92168); height 1.80 mm, diameter 0.56 mm.



*Rissopsis*





and oblique D-shaped aperture. Protoconch large, of few whorls, dome-shaped and smooth.

*Epigrus* (?) *columnaria* (May)

Text figures 2-3.

*Aclis columnaria* May, 1910: 397, pl. 14, fig. 27.

*Eusetia columnaria*, Cotton, 1944: 307.

*Aclis columnaria* May probably requires a new genus but can be tentatively placed in *Epigrus* pending a more detailed revision of that genus. No information is available on the animal of any species of *Epigrus* to date and no "live collected" material of *columnaria* is available to the writer. This species differs from *E. cylindracea* in having a broader aperture and in lacking the oblique, straight columella.

The holotype (text fig. 2) is badly damaged so that, in addition, a paratype is figured for comparison (text fig. 3).

*E. columnaria* is known from the type locality, 183 m off Cape Pillar on the east coast of Tasmania and 73 m off Thouin Bay, Tasmania (May Collection, Tasmanian Museum, no. 18391/E2856). Cotton (1944) has recorded this species from Wilson's Promontory, Victoria and although I have not seen his material, his identification seems unlikely.

Family Pyramidellidae

*Eusetia* Cotton, 1944

Type species: *Rissopsis expansa* Powell, 1930. Original designation.

**Diagnosis:** Shell with moderately tall to tall spire, smooth, of small size (less than 4 mm in length), with immersed, heterostrophic protoconch. Whorls weakly to moderately convex; aperture with smooth, slightly sinuous columella which is free from base and merged into the rounded basal lip. Inner lip a weakly defined callus across parietal area.

Subgenus *Eusetia* s.s.

**Diagnosis:** Shell with moderately tall spire, minute, with glossy surface, translucent, aperture expanded. Outer lip projecting slightly forwards (i.e. ventrally) anteriorly, and swings dorsally where it meets the suture without a sinuation (see fig. 6).

*E. expansa* (text figs 4-6) is the only species which can be assigned to this subgenus with certainty. It was described from 11-18 m, off Mangonui Heads, North Island, New Zealand.

Subgenus *Austrorissopsis* Ponder, 1965.

Type species: *Rissopsis brevis* May, 1919 (= *Rissopsis consobrina* Tate and May, 1900). Original designation.

Differs from *Eusetia* s.s. in having a taller spire, less expanded aperture and dull surface texture. The outer lip differs in having a sinuate outline with the posterior margin flexed forwards (i.e. ventrally) so that a shallow sinus is formed (text fig. 8). The protoconch in *E. (Austrorissopsis) consobrina* is more loosely coiled than that of *Eusetia (Eusetia) expansa* (c.f. text figs 5 and 9).



## Rissopsis

The shell characters may only be superficially similar in *Eusetia* and *Austrorissopsis* but until further information is forthcoming regarding the animals of the two type species they can be regarded as being subgenerically distinct.

The type species is the only one that can be assigned here with certainty.

### *Eusetia (Austrorissopsis) consobrina* (Tate & May)

Text figures 7-10.

*Rissopsis consobrina* Tate and May, 1900: 101; Tate and May, 1901: 394, pl. 27, fig. 94.

*Rissopsis brevis* May, 1919: 63, pl. 16, fig. 19.

*Eusetia consobrina*. Cotton, 1944: 306.

*Eusetia brevis*. Cotton, 1944: 307.

*R. brevis* May (fig. 10) is the juvenile of *R. consobrina* as shown from the examination of the type specimen.

*Eusetia (Austrorissopsis) consobrina* was described from Frederick Henry Bay, Tasmania and several lots exist in Australian museums from this locality. *R. brevis* was described from 73 m off Thouin Bay. One juvenile specimen in the Australian Museum (C. 92155) from Pirates Bay, Eaglehawk Neck, south east Tasmania was collected from brown algae near low tide on rocks by the writer (31 March 1970).

Laserson (1950: 283) recorded *Rissopsis brevis* from Sydney but his specimens prove to be juvenile *Herviera leopardis* (Laserson) as noted below. Gatliff and Gabriel (1909) record *consobrina* from Point Nepean, Victoria (National Museum of Victoria, F. 26791) and these authors (1922) also record *brevis* from "Bass Strait" (= Flinders Island) (National Museum of Victoria, F. 26789). The Point Nepean specimen is a weakly sculptured *Turbonilla*-like species and the Flinders Island shell is a juvenile, with a broken aperture. It is possibly a *Eusetia* but it is not *consobrina*.

### *Herviera* Melvill & Standen, 1899

Type species: *Pyrgulina gliriella* Melvill & Standen, 1896. Original designation.

Synonym: *Rugadentia* Laserson, 1951: 309. Type species: *Odostomia ignava* Hedley, 1908. Original designation.

**Diagnosis:** Shell with tall spire, outline tending oval; protoconch heterostrophic, usually partially immersed. Aperture rather small with complete peristome, the inner lip well developed. Columella fold single, weak, high on columella. Axial ribs usually present, sometimes weak, no spiral sculpture. Shell often coloured.

### *Herviera buliminoides* (Tate and May)

Text figure 11.

*Rissopsis buliminoides* Tate and May, 1900: 101; Tate and May, 1901: 394, pl. 26, fig. 75; Gatliff & Gabriel, 1909: 42.

*Eusetia buliminoides*. Cotton, 1944: 307.

The apertural features of *buliminoides* agree with species of the genus *Herviera* and well preserved specimens show weak axial folds. The type is in poor condition, the surface being rather eroded and the axial folds are inconspicuous.



This species was described from Frederick Henry Bay, south east Tasmania and Gatliff & Gabriel (1909: 42) record it from Port Albert, Victoria. The examination of specimens in the National Museum of Victoria (F. 26787) and in the Australian Museum (C. 31545) from the latter locality confirms this identification. Cotton (1944: 307) records this species from South Australia (St. Francis Is., 64 m) and (1952: 51) from the Kalimnan (Lower Pliocene) of South Australia but I have not seen his material. A specimen from Stanley, north west Tasmania, which is pale brown in colour, is in the National Museum of Victoria (F. 26788).

*Odostomia leopardis* Laseron (1951: 308) from Rose Bay, Sydney Harbour is a *Herviera*, as shown from an examination of the type. Laseron's record (1950: 283) of *Rissopsis brevis* May from Middle Harbour, Sydney, is based on two juvenile specimens of *Herviera leopardis* (Australian Museum C. 9929). *H. leopardis* is very similar to *H. buliminoides*, differing mainly in its smaller size and the presence of faint, broken axial streaks of orange-brown.

*Pseudorissoina exserta* Laseron, 1950, is another species better located in *Herviera*.

### *Rissopsetia* Dell, 1956

Type species: *Rissopsetia maoria* Dell, 1956. Original designation.

**Diagnosis:** Shell small to minute (less than 2.3 mm long), thin, typically imperforate, sculptured with weak axial ribs and numerous, regular spiral lirae. Varices sometimes formed. Protoconch heterostrophic, immersed to slightly exsert (Pl. 5, figs 1,3). Aperture with complete peristome, posterior sinus broad, very shallow.

### *Rissopsetia maoria* Dell.

Text figures 12-13.

*Rissopsetia maoria* Dell, 1956: 37, fig. 42.

This species is distinctive in its minute size (1.5 mm in length), well developed, narrow axial riblets and weak spiral threads, strongly convex whorls and simple aperture with only a very shallow posterior sinus.

*R. maoria* was described from 148 m in Cook Strait, New Zealand. A single dead specimen from deepwater in Bass Strait agrees extremely well with the holotype and can be regarded as the same species (c.f. figs 12 and 13).

**Locality:** 53 km south of Cape Conran, Gippsland, Victoria, in Bass Strait, 148°39'00", 38°18'20", 750 m, coll. C. Phipps (C.92156).

### *Rissopsetia maccoyi* (T. Woods).

Plate 5, figure 1. Text figure 14.

*Rissoa* (*Cerata*) *maccoyi* T. Woods, 1876: 154.

*Rissoa maccoyi*. Hedley, 1900: pl. 26, fig. 11.

*Rissopsis maccoyi*. Tate & May, 1901: 394; Pritchard & Gatliff, 1906: 64.

*Eusetia maccoyi*. Cotton, 1944: 307.

*Rissopsetia maccoyi*. Dell, 1956: 37.



*Rissopsis*

The holotype has not been illustrated but has been examined by the writer during a visit to the Tasmanian Museum.

A comparison of *maoria* and *maccoyi* shows that the Tasmanian species differs in being larger, in having more prominent spiral sculpture, and in usually lacking distinct axial ribs, although it has the tendency to produce occasional varices. It also differs in often being narrowly umbilicate (some specimens imperforate) and in having a deeper sinus on the outer lip. However, despite these differences *R. maccoyi* can tentatively be considered congeneric with *R. maoria* until comparative information on the animals of these 2 species can be obtained. *R. maccoyi* is known from south east Tasmania, from where it was originally described, Flinders, Western Port, Victoria (National Museum of Victoria, F. 26792) (Pritchard & Gatliff, 1906: 64; identification confirmed) and South Australia (Tate, 1899: 234; Cotton, 1944: 307).

*Additional Material Examined:* Derwent Estuary, Tasmania (May Collection, Tasmanian Museum, no. 7799/E458; Australian Museum, C. 10808, C. 92158); Western Port Bay and Port Albert, Victoria (Gabriel Collection, National Museum of Victoria); Shark Bay, Gulf St Vincent, South Australia (Voorwinde Collection, Australian Museum, C. 92160); Emu Point, Oyster Harbour, Albany, south Western Australia (collected W. F. Ponder and B. R. Wilson, 4-5 Jan. 1972; Australian Museum, C. 92157).

A single specimen from Raoul Island, Kermadec Islands (Australian Museum, C. 92161) is almost identical with Australian specimens of *R. maccoyi* and is tentatively referred to this species.

Laseron (1950: 283) was doubtful of Henn's (1896: 500) record of *maccoyi* from N.S.W., and as it does not appear to have been recollected in N.S.W., Henn's record can be rejected as a mis-identification, a likely event considering that at that time *maccoyi* was not even figured.

A single, broken specimen from Fingal Bay, Port Stephens (collected J. Voorwinde, Australian Museum, C. 92159) is possibly a new species of *Rissopsetia* as it differs from *R. maccoyi* in having moderately strong, close axial riblets, but the specimen is too incomplete for positive identification.

*Rissopsetia altispira* n. sp.

Plate 5, figs 2, 3, 4.

*Diagnosis:* Shell elongate, imperforate, with convex whorls, a broad low varix on each whorl, rather strong axial and weaker spiral sculpture. Protoconch (Pl. 5, fig. 3) relatively large, of 1 visible, convex, smooth whorl, the tip immersed. Teleoconch of 4 whorls in holotype,  $3\frac{1}{4}$  in paratype. Spiral sculpture of flat-topped cords (Pl. 5, fig. 4), about 12 on penultimate whorl, which cross the close, rounded axial ribs. The spiral sculpture persists on the base. Aperture oval, somewhat oblique, peristome complete, the outer lip is thickened, with a very slight indentation at the shoulder and slopes slightly dorsally in its anterior section. Inner lip thin, separated as a thin rim from the parietal area. Colour of dead shell yellowish-white.

Holotype.	Height 1.80 mm	Diameter 0.56 mm.
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Paratype.	1.52 mm	0.52 mm.
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*Locality:* 79 m off North West Cape, Western Australia, ex J.



Voorwinde Collection (Australian Museum reg. no. C.92163 holotype; C.92164 paratype).

Differs from *R. maoria* to which it appears to be most closely related, in its much narrower shell and distinct varices.

Ponder (1967: 211) noted that *Epigrus gracilis* Oliver, 1915 from Raoul Island, Kermadec Islands, is a pyramidellid but did not suggest a generic location. This species can also be tentatively included in *Rissopsetia* as it has similar spiral sculpture to *R. maccoyi* and agrees moderately well in other shell features to *R. maoria*. An illustration of a topotype is provided of *Rissopsetia gracilis* (Text fig. 15) to supplement the rather poor original illustration.

### ACKNOWLEDGEMENTS

I thank Miss Alison Green, Tasmanian Museum and Art Gallery, Dr. F. Climo, National Museum, Wellington, New Zealand, Dr. A. W. B. Powell, Auckland Institute and Museum, New Zealand and Dr. R. Robertson, Academy of Natural Sciences of Philadelphia for the loan of type material and Dr. B. J. Smith of the National Museum of Victoria for the loan of specimens. Mr. E. K. Yoo has prepared the line illustrations and Dr. C. Nockolds of the University of Sydney provided the S. E. M. photographs. This work has been supported in part by an A. R. G. C. grant, number D70/17338.

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**View This Item Online:** <https://www.biodiversitylibrary.org/item/295144>

**DOI:** <https://doi.org/10.1080/00852988.1974.10673875>

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