



SYDNEY SHELLER

Newsletter of the Shell Club of Sydney
NSW Branch, The Malacological Society of Australasia Limited ACN 067 894 848

Next Meeting:

24th September 2005

(normally 4th Saturday)

Ryde Eastwood Leagues Club 117 Ryedale Rd, West Ryde, Sydney

1.30 for 2.00pm

View these newsletters with more pictures, plus references, and club information at

www.sydneyshellclub.net

Contributions:

Please send contributions to:

Steve Dean

PO Box 316, Mona Vale, NSW 1660 Text by disk or email only. Photos, and disks by mail, or preferably by email to steve@dean.as

If you cannot get your text onto disk, then **Karen Barnes** may be prepared to type it for you - send material to: 1/7-9 Severn St Maroubra
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Shell Club of Sydney Mission Statement:

To appreciate, understand and preserve shells and their environment and to share this with others.



Bursa awatii Ray 1949 (A deep water Philippines form is on the right)



Pallium areola (Linnaeus, 1758) Dead collected Collaroy Beach, Sydney

Some of the topics inside:

- ⇒ Bursidae, meeting presentation(Cover photo)
- Extended Range for Phalium areola
- Bursidae synonyms cross list
- → Bursidae species/subspecies check list



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Bursidae

A paper to compliment - a meeting presentation, with example Bursidae

By Steve Dean

Introduction:

Bursidae are a small family of only 64 valid species and subspecies, plus a further 17 named and unnamed forms and variants.

Bursidae have very attractive aperture shapes and colouring and pronounced body sculpture. Bursidae are similar in shape to Ranellidae (Tritons and Trumpets). However they tend to have a more spiky or lumpy appearance. Because of their rounded shape and warty toad-like appearance they gained the common name of 'Frog Shells'.

Worldwide Bursidae are less rigorously collected than 'the big five'. Comprehensive collections can be achieved because even the rare species and deep water varieties are relatively affordable. Unfortunately Bursidae are getting more popular thus prices are creeping up.

Both Ranellidae and Bursidae have a deeply notched siphonal canal at the anterior end of the aperture. In Bursidae this is short, as it is for the Ranellidae, Genus Charonia (Tritons). Ranellidae and Bursidae both have teeth or undulations around the inner edge of the aperture lip, and often on the columellar. The columellar in both is often glazed and enlarged to form a rased shield.

Many Ranellidae have a small anal slit where the outer lip of the aperture meets the body whorl (next to the suture). In Ranellidae this is formed between a tooth or nodule in the aperture and another on the body whorl.



In all Bursidae this is taken further with a very pronounced anal slit cut into the top of the aperture next to the suture to form a spout. The first picture below is an example of a Bursidae species with a relatively small anal notch.



However many have longer notches, often semi-enclosed and sometimes extending beyond the shell looking like spines on successive whorls.



The large anal slit or notch is the most obvious feature to let a collector know they are looking at a Bursidae rather than a Ranellidae. Other minor differences include little, or no, periostracum and a far more bumpy, spiky and or warty outer surface in Bursidae. For researchers there are also fundamental differences in the protoconch, and in the central teeth along the radula.

Adult Bursidae species vary in size from 15mm to 420mm. They have a horny operculum. Some species are intertidal while others are deep water. All are from tropical or temperate seas, with species found right around the globe (Indo-Pacific, Eastern Pacific, Caribbean, West Africa, Mediterranean, and the Red Sea).

They are carnivorous feeding on polychaete worms, nut worms (sipunculids) and sometimes other molluscs. They have a long thin proboscis that can be extended to 1.5 times the length of the shell when searching for food or while feeding. The end of this often has a broad flat tip and lips.

Bursidae lay egg masses on the underside of rocks. When eggs hatch there is a period where they float around in the currents before settling on the bottom. (Pelagic larval stage).

Bursidae have a short powerful foot. Their eyes are on thickened areas at the base of the tentacles. Females are often larger than males.





Most species of Bursidae are strongly varixed (Thickening of the outer lip at growth pauses). If they have varixes there are usually two per whorl that line up along the side of the spire. This makes these Bursidae appear fatter, or flattened (dorsoventrally compressed). However Bursidae, Genus Tutufa have varixes every 2/3 of a whorl, so they do not look flattened.

Because they are similar shaped, at first glance many Bursidae look the same. It is only when the different species are seen together that the differences are obvious. This is why I have brought along all species and variants and for those I do not have, colour pictures, each adjusted to match the actual size of that species.

Various quirky things:

Four species of Bursidae are found in multiple oceans that are not connected in the tropical or temperate regions. Being temperate/tropical one wonders how their larvae got from one ocean to another? The four are:

• **Bursa granularis** is found in the Caribbean/Brazil as well as throughout the Indian Ocean and Western Pacific, but not in California/West Mexico and not in East Africa.





Bursa granularis granularis f affinis (Oman) on left in each photo. Bursa granularis cubaniana (Brazil) is on the right.

Bursa ranelloides is found in Japan, but also in Philippines and South Africa. A smoother form of the <u>same</u> species
(Sometimes identified as Bursa ranelloides f. tenuisculpta) is found both sides of the Atlantic. Florida to West Indies,
and South Africa to Canary Is.





Bursa ranelloides (Durban South Africa) on the left in each photo, Bursa ranelloides f. tenuisculpta (West South Africa) right

• Bursa rhodostoma is found in the West Atlantic and East Atlantic, and also in the Indo Pacific.





Bursa rhodostoma rhodostoma (Solomon Is) is on the left in each photo, Bursa rhodostoma thomae (Brazil) on right.

• **Bursa latitudo** has four different subspecies, that all look entirely different to each other. **Bursa latitudo natalensis** is found from the Caribbean to Brazil, while the other three are found in subsections of the Indo-West Pacific.





Tutufa rubeta was once a popular species to make into oil lamps.

The horny operculum of *Tutufa bubo* has an extension covering over the posterior canal of the shell.

Family tree:

The Family Bursidae Thiele,1929 is divided into four Genuses:

Bufonaria Schumacher, 1817 Thinner shells and longer anterior siphonal canal than other Bursidae Genus. Sculptured with numerous small granules in rows. Spines or nodules at the shoulder, often long. Aligned varixes. Fan shaped aperture and operculum. Live on mud or sand often in deeper water. Tropical and Sub-tropical. Genus is further divided into three subgenuses:

Aspa H& A. Adams, 1853 Only one living species, very heavy shell, sculpture smooth with concentric ridges. No nodules except some on shoulder.

Bufonaria Schumacher, **1817** 17 species, + 2 geographic forms **Marsupina Dall**, **1904** Only two species

Bursa Röding, 1798 These are thick shelled, coarse sculpture with aligned varixes. Live in shallow water on rocks or coral. Found from tropical to warm temperate zones. Genus has the most species. Genus is further divided into two subgenuses:

Bursa s.s. Röding, 1798 Short spired, D shaped aperture, extended anal slit to form spikes down the spire. 17 species and subspecies, + 1 geographic form

Colubrellina Fischer, 1884 Taller spired. 17 species and subspecies, + 12 geographic forms

Crossata Jousseaume, 1881 Fairly Large, very solid shells. Only Two species, which could still prove to be just one. Eastern Pacific California to Chile

Tutufa Jousseaume, 1881 Medium sized to very large tall-spired shells. Posterior and anterior canals short. Found in shallow water on rocks or coral, in tropical to sub-tropical areas. Some species are from deeper water. Varixes every 2/3 whorl. Genus is further divided into two subgenuses:

Tutufa s.s. Jousseaume, 1881 Very large shells, Columella smooth or weakly plicate. 4 species + 1 form. *Tutufella* Beu, 1981 Medium to large shells, Columella finely plicate. 4 species + 1 variant.

Problems with Bursidae naming.

As seen from the dates in the naming above, and even more in the Species List at the end of this Sheller, parts of the family tree have only been recently described. As a result many collection and dealer shells are incorrectly labelled in the wrong Genus, with Tutufa and Bufonaria often labelled just as Bursa. This does not present much of a problem as the valid species have different specific names. The only exception being one species called *Bufonaria bufo* and an unrelated species called *Tutufa bufo*. In older books some species are given Genus Ranella or Gyrineum, and even now some dealers list their Bursidae within their Ranellidae lists.

Suspect species:

Bufonaria ignobilis is supposed to be a different species to **Bufonaria nobilis** where the main differences are size, aperture shape, shield size, and nodule frequency. However most shells sold by dealers appear to be incorrectly named with the name they choose based solely on size. As a result, from observed shells alone, I am yet to be convinced they are different species.

Some other species of Bufonaria of approximate shape as **Bufonaria rana** look suspiciously similar to each other, and may prove to be size or colour variants of one or another of the Bufonaria.

The uncommon Western Australian Bursidae, *Bursa humilis* may still prove to be a Geographic variant of *Bursa ranelloides*.



B Ranelloides



Bursa humilis (Picture scanned from Australian Seashells Barry Wilson)





Due to limited studies of Bursidae, some shells considered as geographic variants might yet prove to be different species; while some different species may eventually prove to be variants of single species. There is also a good chance of additional new species being discovered, especially from deeper water. (A new species was named in 1995)

Some authors list two subspecies for *Crossata californica*. These are *Crossata californica* (Hinds, 1844) from California, and *Crossata californica sonorana* (Berry, 1960) from West Mexico. However shells are identical through the range with only some of the Mexican specimens having sharper nodules. Therefore I have not listed them as two subspecies.



Left to Right:

Crossata californica californica (San Diego)

Crossata californica sonorana (Antonio, Sonora Mexico)

Crossata ventricosa (Callao, Peru)

(C. c californica and C. c sonorana are probably not valid subspecies of each other, and they are not listed separately in my species check list. It is also possible that both of these will prove to be merely a northern form of C. c ventricosa)

Extra detail required for some species.

To allow collectors to identify geographic variants of particular species, collectors often create subspecies names, even though the variants often do not meet requirements for formal subspecies status. For the most part this has not happened for Bursidae.

However many variants were once thought to be different species and were named. Once it was established that they were merely variant of single species, collectors have continued the use of the invalid names appended to the species name as a form (f.) to enable each of the geographic variants to be specified. Unfortunately for some species there are different forms that have not been named so do not have an easy way to indicate they are different.

Attached at the end of this Sheller I have compiled a removable comprehensive 2 page **Species List** of all the Bursidae, their subspecies and their forms. I have attempted to separately list most common variants of shape and size, but not colour variants or depth variants. Some species have dark or pale forms that collectors may wish to obtain, and deep-water specimens are often less nodulous and less heavy shells. (see front cover) (These depth variants are the same in Ranellidae and Cassidae)

The Species List at the end of this Sheller is for collectors. It has been prepared with four goals in mind:

- to give collectors a check list to establish all the species and variants they may wish to collect
- to help collectors <u>avoid purchasing duplicate shells</u> due to them being named by their synonyms in dealer lists. (I have prepared another list, **Bursidae Synonyms Cross Reference** included with this article, below)
- to allow collectors to <u>label specimens</u> with more correct species information.
- It includes maximum sizes, terrain/depth and some of the localities where each species can be found to <u>aid in collection and/or identification</u>. (Additional localities are slow to get into the references, so you will come across specimens from non-listed locations.)





Bursidae Synonyms Cross Reference

Valid Bui	rsidae Name	Author	Synonyms (Not valid for the particular Bursidae)
Bufonaria	a bufo	(Bruguiere, 1792)	Bufonaria spadicea; Ranella granulata; B crassa
Bufonaria	a crumena crumena	(Lamarck, 1816)	Bufonaria crumenoides
Bufonaria echinata		(Link, 1807)	Ranella spinosa; B bufonia
Bufonaria foliata		(Broderip,1826)	B crumena foliata
Bufonaria	gnorima	(Melvill, 1918)	B koperbergae; Ranella nobilis timorensis
Bufonaria ignobilis		Beu, 1987	Bufonaria nobilis Beu 1977,
Bufonaria margaritula		(Deshayes, 1832)	Ranella neglecta
Bufonaria marginata		(Gmelin, 1791)	Ranella laevigata; B laevigatum; Ranella marginata; Buccinum marginatum
Bufonaria nana		(Broderip & Sowerby, 1829)	Bursa albofasciata
Bufonaria	nobilis	Reeve 1844	Bursa bufonia dunkerii Ladd 1982
Bufonaria	n perelegans	Beu, 1987	B elegans; Gyrineum elegans
Bufonaria	n rana	(Linnaeus, 1758)	Gyrineum cavitensis; Gyrineum scelestum
Bufonaria	subgranosa	(G.B. Sowerby II, 1836)	Bufonaria beckii
Bufonaria	thersites	(Redfield, 1846)	B nobilis Cernohorsky 1967; Gyrineum pacator
Bursa	awatii	Ray, 1949	B rehderi
Bursa	bufonia	(Gmelin, 1791)	B dunkerii; B mammata; B rosa; B luteostoma
Bursa	condita	(Gmelin, 1791)	B candista; B candisata; Colubrella conditina
Bursa	corrugata corrugata	(Perry, 1811)	Bursa caelata; B louisa
Bursa	granularis granularis	(Röding, 1798)	Ranella granifera; B jabik; B kowiensis; B livida; B rubicola; B semigranosa; Ranella semigranosa
Bursa	grayana	(Dunker, 1862)	Bursa pacamoni; Bursa bufoniopsis
Bursa	humilis	Beu, 1981	Bursa ranelloides humilis
Bursa	leo	Shikama, 1964	Ranella siphonata
Bursa	ranelloides f. tenuisculpta	(Dautzenberg & Fischer 1906)	Bursa canarica; Bursa ranelloides finlayi
Bursa	rhodostoma rhodostoma	(Beck in G.B. Sowerby II, 1835)	B paulucciana; B xantostoma
Bursa	rhodostoma thomae	(d'Orbigny, 1842)	Ranella bergeri; Bursa rhodostoma thomae bergeri; B cruenata Reibisch 1865; B cruenatum
Bursa	rosa	(Perry, 1811)	Ranella siphonata; Bursa mammata
Bursa	rugosa	(G.B. Sowerby II, 1835)	Bursa calcipicta
Bursa	scrobilator	(Linnaeus, 1758)	B scrobiculata; B atlantica; B pustulata
Bursa	verrucosa	(G.B. Sowerby I, 1825)	Bursa papilla
Crossata	californica	(Hinds, 1844)	Crossata californica sonorana
Crossata	ventricosa	(Broderip, 1833)	B tenuis
Tutufa	bardeyi	(Jousseaume, 1894)	Tutufa rubeta gigantea
Tutufa	bubo	(Linnaeus, 1758)	Bursa lampas; Bursa gigantea
Tutufa	bufo	(Röding, 1798)	Bursa lissostoma; Bursa californica; Argobuccinum siphonatum; B spadicea
Tutufa	rubeta	(Linnaeus, 1758)	Lampas hians; B tuberosum
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Modern times

How things have changed!

Cyrus says "Daddy, how was I born?"

Dad says "Ah, my son, I guess one day you will need to find out anyway! Well, you see your Mom and I first got together in a chat room on MSN. Then I set up a date via e-mail with your mom and we met at a cyber-cafe. We sneaked into a secluded room, where your mother agreed to a download from my hard drive."

"As soon as I was ready to upload, we discovered that neither one of us had used a firewall, and since it was too late to hit the delete button, nine months later a blessed little Pop-Up appeared and said

"You've Got Male".

Two species of Lyria that do not occur in NSW

By Des Beechey

Lyria pattersonia (Perry, 1811), more commonly known as Lyria nucleus (Lamarck, 1811) and Lyria deliciosa (Montrouzier, 1859) have been recorded as occurring in NSW, but both records can be attributed to mis-localised specimens. Recent references, particularly Barry Wilson's 1971 book Australian Shells and more recently his 1994 book Australian Marine Shells both incorrectly list these species as reaching into NSW.

Lyria pattersonia (Perry, 1811)





Lyria pattersonia is now recognized as occurring only on Norfolk Island. It occurs there fairly uncommonly intertidally, but I collected a few alive under stones and several dead from the beach when I was there many years ago. It has been known until recently as *Lyria nucleus* (Lamarck, 1811) but the recent publication on the group by Bail and Poppe shows that Perry's name was published four months before Lamarck's, so that is the one we have to use.

In 1940, Iredale named a species *Lyria peroniana* Iredale, 1940. He set two specimens aside as types of his new species. There are shown in Fig. 1 and 2, and are obviously *Lyria pattersonia*. Iredale gave their locality as Newcastle, NSW. These specimens are still preserved in the Australian Museum, and bear a label with that locality and a date of pre-1889. These specimens are shown in Fig.1 and 2.

The Museum holds no other specimens of this species from mainland NSW, despite the subsequent 115 years of intensive collecting on the NSW coast. Alan Limpus informs me that he has another specimens with a NSW locality that he obtained with an old collection, but he doubts the accuracy of the locality.

Given the length of time with no new specimens turning up, we can confidently assume the locality of Newcastle for Iredale's two specimens is incorrect. This means we can remove the species *Lyria pattersoniana*, and its synonyms *Lyria nucleus* and *Lyria peroniana* from the list of species which occur in mainland NSW.





Lyria deliciosa (Montrouzier, 1859)



Lyria deliciosa is an attractive species that reaches up to 31 mm in length. It is now recognized to occur as the following two subspecies.

Lyria deliciosa deliciosa occurs in New Caledonia and westwards to the Queensland offshore reefs and the Queensland coast. The Australian specimens held by the Australian Museum range from Bowden Reef, off Townsville, to Port Curtis, Gladstone. These locations are in central Queensland; the Museum holds no specimens from southern Queensland, and I know of no records from there. It is an uncommon shell in Queensland with most specimens beach collected, but a few live specimens have been collected down to 10 m.

The subspecies *Lyria deliciosa howensis* Iredale, 1937, sometimes referred to as the full species *Lyria howensis* Iredale, 1937, occurs only on Lord Howe Island.

In addition to the Queensland specimens held by the Australian Museum there is one specimen with a locality of Evans Head, NSW, collected pre- 1966. This is shown in Fig. 3. This being the only NSW record after two centuries of collecting, we can confidently assume this is an incorrect locality also, being far south of the known range of the species in central Queensland.

This one mis-localised specimen has apparently been the source of the mis-reporting of *Lyria deliciosa* from NSW. Along with *Lyria pattersonia*, we can remove *Lyria deliciosa* from the list of species that occurs in NSW.

Reference

Bail, P. & Poppe, G.T. 2004. The tribe LYRIINI. In series *A Conchological Iconography*. Series eds. G.T. Poppe & K. Groh. ConchBooks: Hackenheim, Germany

Meeting Minutes 23rd July 2005

The President opened the meeting at 2pm and called form nominations for the position of Secretary. Following discussion it was resolved that Sandra Montague be the Secretary.

- 25th Annual Shell Show
 It was reported that the flyer had been prepared and, along with the list of categories, has been sent to members.
- Finance
 The Treasurer reported on difficulties establishing a bank account following the closure of the previous account as at the 30th June 2005.





- Field Trip Long Reef
 It was reported that there will be a field trip to Long Reef on Saturday the 20th August 2005 commencing at 11:30am.
- 4. Next Meeting 27th August 2005
 It was noted that Steve Dean will talk on the family Bursidae and that Sandra Montague will bring the cake.
- New Zealand Shell Show
 It was noted that the 75th Anniversary of the Auckland Shell Club will be held on the 16-19 September 2005. The President tabled a copy of Auckland Shell Club's magazine *Poirieria* which was circulated to members.
- 6. Advertising in the Sheller
 Steve Dean reported that he had received three new advertisements from dealers for insertion in the Sheller.
- 7. 6th National Shell Show

There was considerable discussion in relation to the choice of shell that would be suitable for insertion in the trophy from the various category winners. It was resolved that the *Epitonium jacobiscala* be the shell subject to suitability. It was further suggested that the Cart Rut Shell *Dicathais orbita* be a second choice. The President reported that he was having difficulty in storing the show boxes and lids.

A letter dated 4th July 2005 from the Ryde Eastwood Leagues Club was tabled. That letter referred to a hire fee of the Auditorium for the Friday and Saturday as well as arrangements for the use of tables, lighting and sponsorship.

The President reported that Waves magazine had inserted details of the Annual and National Shell Shows.

The meeting discussed the use of labels when exhibiting at the forthcoming Shell Shows.

8. General Business

Steve Dene reported that the Federal Government was considering bans of the exportation of Australian shells and it was noted that further details will be forthcoming in the future.

The meeting closed at 4:00pm.

Extended range for Phalium areola

Steve Dean

The Australian East coast range for *Phalium areola* (Linnaeus, 1758) is specified as down to Broken Bay NSW.

I have found broken worn pieces of beached specimens 13km further south at Mona Vale. To some extent, these could have washed southwards after death, but perhaps not 13km.

However while I was visiting Phil Colman following our field trip to Long Reef, one of his neighbours dropped in and presented the specimen pictured on the front cover. It was washed in dead at the Southern End of Collaroy Beach next to the Rock Pool two days prior on 18th August 2005. The specimen has been forwarded to the Australian Museum for storage.

The limited wear suggests it could not have travelled far along the coast. IE it was living off Collaroy beach immediately to the North of Long Reef rock platform. This extends the range for Phalium areola a further 19km South along Sydney's beaches.



