

# THE MALACOLOGICAL SOCIETY OF AUSTRALASIA Inc. VICTORIAN BRANCH BULLETIN

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VIC. BR. BULL. NO. 294

## AUGUST/SEPTEMBER 2018

## **50th ANNIVERSARY ISSUE**

## NOTICE OF MEETING

The next meeting of the Branch will be held on the 20<sup>th</sup> of August at the Melbourne Camera Club Building, cnr. Dorcas & Ferrars Sts South Melbourne at 8pm.

Members can bring in examples of variation between species.

There will be no meeting in September.

## Meetings for the remainder of 2018

It has been decided to reduce the number of meetings of the Victorian Branch of the Malacological Society of Australasia from 9 per year to 6.

October 15<sup>th</sup> – Angus Hawke will speak on fossils.

November 19<sup>th</sup> – Christmas meeting "Mega" buy/swap/sell.

Each meeting will also be an opportunity to trade or sell any shells or books – so come along, you never know what you might find and the more people who attend the better!

Currently Branch Bulletin issues from VBB169- 288 can be accessed via the Society's website which includes an index 1-279. . <u>http://www.malsocaus.org/?page\_id=91</u>

Bulletins mentioned in this issue prior to 169 can be obtained from the editors in PDF form on request.

Many thanks to those who have contributed to this special issue of 15 pages.

Secretary / Treasurer Michael Lyons Tel. No. 9894 1526

## 50 years of the Victorian Branch Bulletin

The Malacological Society of Australia Victorian Branch Bulletin No.1 August 18<sup>th</sup> 1968 began with this Editorial note : "This Bulletin will probably be a surprise to most Branch members : we hope it will be a pleasant one! For some time the committee has been aware of the need for an information/news sheet to keep members informed of Branch activities and matters of relevant interest. This, then, is an attempt to answer that need, but is in the nature of an experiment: please help to keep it alive by letting the Editor (Mrs.R.G.Dyke) have any suitable news items.....write or telephone...9 Lawson St. Nth Balwyn (854581)." Now August 2018, 50 years later this, the 294<sup>th</sup> issue is an uninterrupted testament to those words of Jean Dyke.

First printed by a Roneo machine onto Quarto paper and produced quarterly, the Bulletin has progressed through to typing, pasting and photocopying and finally to being computer generated, but the format has barely changed. After 9 issues Jean handed over to Ralph Robertson and No.10 was the first with the distinctive header that has remained until now. Subsequent authors Ken Bell, Barbara Neilson, Robin Willington and for a brief period Edna Tenner continued on until at No.112 the current Editors reluctantly agreed to temporarily continue, but it has turned into something we have enjoyed doing.

Although produced and formatted here, for some time the finished product was posted to first Edna Tenner and then to Fred and Chris Bunyard for copying and distribution at no cost to the Branch other than materials. Eventually the introduction of colour images proved too costly, so the issue of a hard copy ceased and members now receive their bulletin by email, which can be printed out. A decision was made to digitize all issues from No. I and store on a disc, to guarantee the Bulletins long term survival.

The Branch Bulletin is not only a record of meetings and people associated, but an outlet for authors to report and record events, finds, range extensions, invasive species, which will provide a wealth of information for future malacologists and scientists, particularly in the divisive area of pollution, habitat destruction and climate change. Throughout the years the Bulletin has also featured many articles of genuine scientific significance, some never before recorded. More recently the area of micro-molluscs has highlighted original research and stunning images using photo stacking, plus images of rare or undescribed nudibranchs. Throughout the years branch members have maintained a link to Museum Victoria as volunteers, contributing important specimens to the collections and undertaking projects of scientific significance.

From its inception Robert Burn, our Branch Tutor and sea slug expert has provided countless articles of high quality that have assisted greatly in producing each issue. Our thanks also to the many other authors too numerous to name, that have contributed to the quality of the Bulletin. On our recent trip to the Natural History Museum in London, a disc of all the Bulletins to date was gladly accepted and added to their sectional library.

Although these have been wonderful years, sadly membership has declined and one wonders what is the future for what has been a beautiful hobby and one that has contributed to the advancement of science. There is no doubt that crippling collecting restrictions have driven any curious young person from the beaches to other activities. We both think it is hypocritical to see people happily fishing off the pier, abalone, scallops, sea cucumbers, lobsters etc being harvested in great numbers for export and restaurants and not being able to pick up a shell without feeling like a criminal. Maybe the authorities will one day realize they have kicked an own goal. In the meantime we will all continue on as long as possible.

Don & Val Cram

## A report on the gross living morphology of the microsnail Zebinella elegantula (Angas, 1880) (Caenogastropoda: Rissoinidae).

#### Introduction

The superfamily Rissooidea Gray, 1847 contains many small to very small species that form a conspicuous component of the micromolluscan fauna in south eastern Australia. Among shell sand samples from this region, the aptly named *Zebinella elegantula* (Angas, 1880) can be found (Figure 1). Although not uncommon, it is rarely seen alive (at least in the intertidal zone). It was only last year that I first saw living animals, and here report on the external morphology of this snail. It was formerly placed in *Rissoina* d'Orbigny, 1840, but has now been transferred to *Zebinella* Mörch, 1876 (Molluscabase, 2018a), formerly a

subgenus of *Rissoina* (and considered by Ponder, 1984, as a synonym of *Rissoina*). Both *Rissoina* and *Zebinella* are now placed in the family Rissoinidae Stimpson, 1865 (Molluscabase, 2018b). Although Ponder (1984) provided soft tissue information on *Rissoina* (in his review of the family Rissoidae Gray, 1847), this was not informed by details of *Z. elegantula*, and I am not aware of any published soft tissue descriptions of this species.

#### Material and methods

Two live snails collected from littoral algal samples at Harmers Haven (Beach 22), Bunurong Marine Reserve, Monday 1 May 2017 by T. Joan Hales were given to me for further study. They were kept in a copious volume of cooled seawater and studied in a petri dish of seawater under a stereomicroscope and LED lighting, where notes and drawings were made. Photography used a digital SLR camera fixed to a copy stand and mounted with a Canon MP-65mm macro lens, ring flash and remote shutter release. After study, the specimens were preserved in 70% ethanol and have been lodged in the Museums Victoria marine invertebrate collection (their museum reference number is NMV F238778).

#### **Results:**

### Shells and operculae (Figure 1):

Shell lengths 3.9 mm (female specimen, outer lip slightly broken) and 4.0 mm (male specimen). Shells white, tall, whorls flatly convex. Protoconchs smooth under light steromicroscopy, teleoconch whorls sculptured by oblique axial ribs, diminishing on last whorl, and fine spiral sculpture most prominent on abapical part of last whorl. Aperture D-shaped, adapical end acutely angled, abapical end rounder, apertural rim (in intact specimen) strong, outer lip opisthocline. Operculum thin, brown, paucispiral, very slightly externally convex; internal aspect not examined.

<u>Remarks</u>: Ponder (1984) notes that the operculum in *Rissoina* has an internal peg arising from the nucleus.

#### Soft tissue morphology (Figures 1, 2):

Animals active, semi-opaque white, crawling with a smooth, gliding motion. When crawling, usually only anterior foot, distal snout (although the latter not consistently), distal halves of cephalic tentacles, and distal pallial tentacles on both sides protrude beyond shell margin (Figs. 1A, 1H, 2A, 2B). Cephalic tentacles long, dorsoventrally flattened, slightly expanded proximally, minimally tapering, rounded at their ends, translucent, speckled with very fine creamy spots. Eyes black, situated at bases of cephalic tentacles. Snout long, distally bilobed, extensible, transversely wrinkled when not fully extended. Pink buccal mass visible through proximal snout. In male specimen, penis arises from posterior right side of head, semi-translucent white, folded outwards; details of spermatic groove and terminus unable to be ascertained. This structure absent in the smaller specimen, presumed therefore to be female. Foot broader anteriorly (squarish with rounded corners), posteriorly tapering to a bluntly rounded end. Propodium extensible and dexterous, thickened anteriorly at site of dorsal pedal gland, opening to anterior edge of foot via a transverse pedal slit. Foot semi-opaque white, approximately 2/3 of the shell length when fully extended. Two pallial tentacles on left anterior side, semitranslucent white, anterior of the two stouter and shorter; uncertain if they are basally joined. One transparent, relatively long posterior pallial tentacle on right side emerging from adapical 'corner' of the aperture (this structure not definitively seen in the female specimen). Epipodial tentacles absent. Opercular pad thick, ventral to operculum, semi-opaque white, more densely white than foot in general. Dorsal foot posterior to everted operculum thickened, extending posteriorly (a metapodial tentacle fused to dorsal metapodium?) and meeting laterally with thickened lateral foot edges forming a shallow groove at their meeting point, this groove becoming midline at posterior end of dorsal foot (Fig. 2G). Sole bears no obvious slit or opening, difficult to definitively exclude at posterior-most end as the latter, on ventral view, held flexed against adjacent sole (Fig. 2E). Operculum size allows withdrawal to approximately 1/8 of the way inside last whorl. Operculum held in an oblique-transverse position during crawling (Fig. 2C).

<u>Remarks</u>: Ponder (1984) notes the presence of stationary 'setae' on the distal cephalic tentacles in Rissoidae (but lighting here was inadequate to allow a satisfactory assessment for these), and also cilia on the cephalic and pallial tentacles. In *Rissoina*, animals lack external pigmentation (Ponder, 1984), there is no posterior pedal gland (Ponder, 1984), the left anterior pallial tentacle and/or right posterior pallial tentacle may be bifid (Ponder, 1984) and the metapodial tentacle is short and triangular (Ponder, 1984).

#### **Discussion and concluding remarks:**

Like many species of the local micromollusca, *Zebinella elegantula* has hitherto been known only from dead shells. It may be a largely subtidal species given the relative paucity of intertidal records (at least in Victoria), although lack of habitat knowledge may also account for this. Interestingly, Ponder & de Keyzer (1998) note that, in general, rissoids living under stones usually lack a posterior pedal gland and have a translucent white

head-foot, whereas those living on algae usually have a pigmented head-foot and a well-developed posterior pedal gland – the latter facilitating the formation of mucous threads to help secure the animals to their exposed and current-affected habitats. Morphologically, *Z. elegantula* falls into the former group, but these specimens were collected on algal samples. Hopefully, future fieldwork will further clarify its habitat details and provide opportunity for more detailed anatomical study.

#### Acknowledgement

I thank T. Joan Hales for giving me the opportunity to study these snails. Her own work and many interesting fieldwork discoveries have also increased understanding of the local fauna. Thanks also to Chris Rowley, Museums Victoria, for lodging the specimens.

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#### **Platon Vafiadis**



**Figure 1:** Living *Zebinella elegantula*. A-G. Male specimen, shell length 4.0 mm. H-I: Female specimen, shell length 3.9 mm. Key: ct – cephalic tentacle; e – eye; f – foot; lpt – left pallial tentacles; o – operculum; pe – penis; pr – propodium; ppg – propodial gland; ppt – posterior pallial tentacle; s – sole; sn – snout. All images are to scale relative to each other. (Photographs: P. Vafiadis).

4.



**Figure 2: Diagrams of** *Zebinella elegantula*. A-C. Dorsal views of crawling animal showing typical exposure of propodium (A), additional exposure when extended forwards (B), and orientation of everted operculum relative to shell (C); **D.** Dorsal view of head and extended propodium; **E.** View of sole showing distal metapodium flexed ventrally; **F.** Area of operculum relative to outer aperture when operculum sits flush to it. **G.** Dorsal view of distal metapodium and everted operculum. Key: **ct** – cephalic tentacle; **dmp** – dorsal metapodium; **e** – eye; **f** – foot; **g** – groove; **lpt** – left pallial tentacles; **mp** – metapodium; **o** – operculum; **pbm** – pink buccal mass; **pe** – penis; **pr** – propodium; **ppg** – propodial gland; **ppt** – posterior pallial tentacle; **s** – sole; **sh** – shell; **sn** – snout; **tps** – transverse pedal slit. (Diagrams not to scale relative to each other - use known shell sizes in Figure 1 to estimate an approximate scale). (Drawings: P. Vafiadis).

#### A Forgotten Bivalve – Montacuta nitens Gatliff & Gabriel, 1911

Hope Black, nee Macpherson has left us with a wonderful resource in 'Marine Molluscs of Victoria' which she co-authored with Charles Gabriel. Published in 1962 this book is still a very useful addition to the library of any Victorian malacologist. On page 336, under the family Montacutidae a bivalve is listed as *Montacuta nitens* Gatliff & Gabriel, 1911. Locations of Flinders and San Remo are given but there are no other details. For more information it is necessary to consult the original description.

The shell is described as being:-

"minute, white, shining, very inequilateral, smooth, swollen at the umbones, which

are inconspicuous and situated near the front, equivalve.

Dimensions of Type. - Anterior-posterior diameter, 1.5; dorso-ventral diameter, 1.15mm.

Locality. - Ocean Beach, Flinders (type); San Remo

Obs. - This is a simple, minute, white shell of rounded-oval form.

Type in Mr Gatliff's collection." The holotype is now in Museums Victoria with a photograph available on the internet at <a href="https://biocache.ala.org.au/occurrences/search?q=Montacuta#tab\_recordImages">https://biocache.ala.org.au/occurrences/search?q=Montacuta#tab\_recordImages</a>

However, the species is not found on the Atlas of Living Australia by doing a search of the full name. The list of records of *Montacuta* retrieved was checked looking for the registered number as recorded on the image of the holotype - F511. It was found under *Montacuta* but without the species epithet. While both valves are present, they remain closed.

More recently we have the books on Australian bivalves by Lamprell & Whitehead (1992) and Lamprell & Healy (1998). *Montacuta* species are found in Lamprell & Healy under the heading of Galeonmatidae. *M. nitens* is not mentioned. Searching more recent databases on the internet found that the species is missing from

the Codes for Australian Aquatic Biota (CAAB) website which lists Australian species. Neither could it be found on the World Register of Marine Species (WoRMS). The most recent bivalve publications are those by Huber. The family Galeonmatidae features in Volume 2 (2015). Once again, the species could not be found. The only other information that I was able to locate was on a CD from the CSIRO (unable to be opened with recent versions of Windows). However, I have doubts about that identification after comparing the images to the holotype image.

Specimens have been found in shell sand from Flat Rocks (Inverloch), Harmers Haven, and Cat Bay (Phillip Island). All of these locations are not far from the localities cited in the original description. It is not common with specimens only being found occasionally. In all the above instances, only single specimens were found. The translucent Flat Rocks specimen had conjoined valves which subsequently parted revealing the hinge details.

Many Galeonmatidae species appear to be similar in shape and colour. M. nitens had seemingly disappeared despite a holotype being available. The generic description given by Chavan in Moore for *Montacuta* does not fit this shell. Montacuta is described, in part, as being "with radial striae or distant riblets and concentric lamellar growths." None of these attributes apply to M. nitens. The hinge details of the left valve are reminiscent of Mysella species but the tooth in the right valve does not fit that genus either. It will be up to taxonomists to decide which genus is the best fit.

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T.Joan Hales, 06/2018.



Holotype – Museums Victoria

Flat Rocks specimen

#### Eubranchus sp. RB19

The white semi translucent animal is everywhere marked with red lines and bands in a very distinctive pattern. The stubby cerata are a little flattened, each with a subapical and a mid-length red band. The rhinophores are long, smooth, tapering and floppy, each with a redline along the upper and lower edges; the oral tentacles are the same but a little shorter. Anterior foot with strong angular corners, outlined with a submarginal red lines continuous round whole foot. Size: 23mm crawling length.

Habitat and Range: among hydroids (*Plumularia procumbens*) growing on cave roof at 16-18, depth, Tasman Peninsula, Tasmania; among bottom sample including reddish hydroid (*Eudendrium balei*) at 6-8m depth, Crawfish Rock, northern Westernport Bay, Victoria.

Two specimens known and photographed. That from Tasmania by Karen Gowlett-Holmes in February 2000, deposited in South Australian Museum; radula and jaws typical of the aeolid genus *Eubranchus*, though the slightly flattened cerata and the long tapering floppy rhinophores are not at all typical. The Victorian specimen has an anatomical anomaly not ever seen before in any aeolid species by the writer but readily visible in the dorsal image shown here: the opaque slightly curved projection each side of the head just in front of the rhinophores is the pair of salivary glands; normally these are inside the body cavity just behind the buccal mass. The Victorian specimen was found in May 2000.

Burn (2015) reported that "At least 18 species of eubranchid aeolids are known to occur from Bass Strait, with only one named." The situation has not improved and *Eubranchus* sp. RB19 is now the nineteenth species. Imagery by Platon Vafiadis within hours of discovery of the Victorian specimen was above and beyond the call of duty.

Reference: Burn, R. 2015. *Nudibranchs and related molluscs. Museum Victoria Field Guide to Marine Life.* Museum Victoria Publishing: Melbourne.

Robert Burn



*Eubranchus* sp. Resting length 23 mm. Subtidal, 6 - 8 metres, from mixed benthic algal, hydroid, bryozoan and sponge sample (suspected to be upon and feeding on the hydroid *Eudendrium balei*). Crawfish Rock, Western Port Bay, Victoria. Sample collected via SCUBA by Jan E. Watson and Andrew Newton (and sorted by Robert Burn), on Monday 18 May, 2009. (Photographs by P. Vafiadis).

## **DNA - Type specimens and Taxonomy**

On the 30<sup>th</sup> of January 1969 Val and I were accepted as new members of the Malacological Society of Australia, an association that has continued to this day. The newly appointed Curator of Molluscs at the National Museum of Victoria (now Museum Victoria) Dr.Brian Smith, was actively involved with the Victorian Branch of the Society and initiated work days at the Museum of which we soon became involved. He was an avid supporter of amateurs who showed a desire to learn and soon had a team working to the advancement of malacology as a serious science.

Brian became aware of my interest in the genus *Notocypraea*, where current literature and my enquiries with other collectors led only to confusion as to what were the correct names and how they were derived. He then encouraged me to begin an extensive study of these much misunderstood southern Australian cowries and expressed to me the importance of type specimens, original descriptions and all other related literature that must be taken into account, so that any published article has a sound taxonomic basis. This principle I have adopted and adhered to in the many publications that have resulted.

In 1959, R.J.Griffiths described *Notocypraea wilkinsi* as a new species and lodged the holotype F19903 and its radula slide in MV collections. In 1973 under Brian's guidance, I repeated Griffiths' 1962 radular studies, making slides of four species and examined the holotype and radula of *N.wilkinsi*. Although described as a new species its radula was identical to *N.piperita*, which was noted by Griffiths in his 1962 review. A small article (Cram 1973) "*Notocypraea* –Valid Species and Variations" was published in *Australian Shell News* noting "*N.wilkinsi* Griffiths 1959, appears to be an albino form." For 45 years this shell has been listed in every shell book (except those of Barry Wilson) and official listings as a form of *N.comptonii*.

Although to some this may seem trivial, but since it was described, specimens of this uncommon form have been misidentified, then sold and traded at high prices, due to the failure to consult the original description, the holotype and radula, related and subsequent publications, (Cram 2002 & 2006). This is not the only species in this genus that has been affected. My frustrations with the taxonomy of *Notocypraea* in shell books and various publications, where opinion has replaced substance is well documented and need not be repeated here, but the advent of DNA studies again highlights the need of a sound taxonomic basis, before species determination decisions are made.

In late 2017 and early 2018, a new Cowrie Guide by Felix Lorenz has been published : *Cowries-A Guide to the Gastropod Family Cypraeidae*; Volume 1:Biology and Systematics and Volume 2: Shells and Animals. These are beautifully presented books, Volume 1, 644 pages of mainly text followed by Volume 2 of 715 pages and 345 plates, which contain a wealth of information for cowrie collectors world wide. Throughout the first volume much emphasis has been placed on preliminary molecular data and this is evident in the section on *Notocypraea* which will be addressed in an upcoming joint publication, but one example of where taxonomy and molecular data conflict is here outlined.

In his new book, Lorenz has resurrected the name *Notocypraea verconis* Cotton & Godfrey 1932, listing it as an "Associated taxon of uncertain status," for specimens of *N.angustata* found around the St Vincent Gulf SA area. This name was declared invalid by the International Commission of Zoological Nomenclature (ICZM) in 1981. The reviving of this name is no doubt based on molecular studies by (Meyer 2004), where slight differences were found between specimens of *N.angustata* from Port Lincoln SA and specimens from Port MacDonnell.

*Notocypraea angustata* was named by Gmelin in 1791 from an engraving by Gaultieri in 1742. Gray 1825, redescribed *angustata* in detail, adding the locality New Holland. (Wood 1828) gave a clearly recognizable figure. (Sowerby 1832) referred only to Woods figure but for some unknown reason added the locality South Africa. Clear figures were published by (Reeve 1846), (Sowerby 1870) and several others. There was no dispute on the species until 1924, when Iredale rejected the name on the grounds that no South Australian shells could have reached Europe prior to the publication of Gaultierie's figure. Cotton and Godfrey 1932 accepted this and renamed the species *verconis* and gave the name *angustata* to the South African species *C. fuscodentata*.Gray, 1825. The holotype of *verconis* Reg. no D.10173, a worn beach shell from St.Vincents Gulf was lodged in the South Australian Museum. This classification was adopted by (Joyce Allen 1956) in her popular book on worldwide cowries, which then caused great confusion and debate among collectors and academics.

In 1962 in a submission to the ICZN, R.J.Griffiths, pleading the retention of the name *angustata*, noted the voyages of the Dutch, who visited the area inhabited by *angustata* on a number of occasions in the seventeenth and eighteenth centuries. "Furthermore, Gmelin's description uses the words" maculis ad latus rufescentibus." This makes it clear that the sides of the shell are spotted. Since those of *C.fuscodentata* are

always without spots, the assumption that this species is the basis for the name *angustata* cannot be correct." Griffiths then proposed that – "In order to preserve the name *Cypraea angustata* Gmelin, 1791, and to place its interpretation on a secure basis, the holotype of *C.verconis* (Cotton and Godfrey) is here selected as a neotype of *C.angustata* Gmelin. The shell is in the South Australian Museum, Adelaide South Australia."

The official ruling published in the Bulletin of Zoological Nomenclature, Vol. 38 Pt,4 November 1981 reads – (2) The following specific names are hereby placed on the Official List of Species names in Zoology with Name Numbers specified.

(d) *angustata* Gmelin, 1791, as published in the binomen *Cypraea angustata*, and interpreted by the neotype designated in *Bull.zool. Nom.* Vol.19 P.319 (Name Number 2775).

(3) The specific name *verconis* Cotton & Godfrey, 1932, as published in the binomen *Notocypraea verconis* (a junior objective synonym of *Cypraea angustata* Gmelin, 1791) is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology with Name Number 1093.

In Volume 2 plate 167, Lorenz illustrates three specimens : figs. 10,11 and 12 from Kangaroo Island, Stenhouse Bay Yorke Peninsula and Port Lincoln area as *angustata* f. *verconis* Cotton and Godfrey, 1932. Nineteen specimens from outside this restricted range are listed as *angustata*, Gmelin,1791, seemingly only by locality, as there is nothing conchologically that distinguishes these figures, other than in Volume 1, where he states that the *verconis* form is cream in colour and has more discrete spotting. The dorsal colour of specimens of *angustata* varies from dark to light throughout its entire range. Port MacDonnell specimens are typically lighter while the more common darker specimens are widespread, but can occur within the range of Lorenz's *verconis*.

What has been overlooked is that the new name *verconis* was introduced for *angustata*, a name accepted for over a century, not for reasons of difference between shells from the St Vincent's Gulf area and elsewhere, but to replace an existing name. What is also puzzling is why this locality area was selected for this invalid form *verconis*, which is now the type locality of the officially recognized neotype of *angustata*. I pity the poor collector trying to sort out his shells from this plate.

Finally after 45 years, *Notocypraea wilkinsi* Griffiths, 1959 as a form of *N.piperita* has been acknowledged and accepted in this new book, but it seems that the failure to consult type material and original descriptions still exists, being replaced by statements like *preliminary molecular data suggests*. There is no doubt DNA analysis is a powerful diagnostic tool when used in conjunction with shell animal and radular morphology, type material, original descriptions and linked to a known described specimen, but without a sound taxonomic basis, it will create more problems than it solves.

#### Don Cram



D.10173 South Australian Museum The holotype of *Notocypraea verconis* Since 1981 the neotype of *Notocypraea angustata* Scanned from a slide taken in 1978.

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## Pterochelus triformis versus Bassina disjecta.

With its stunning sculpture of raised concentric lamellae, the Venerid bivalve Bassina disjecta is a popular shell with collectors worldwide. Found from NSW around to South Australia, including Tasmania the species is reasonably common throughout its range; however, finding a specimen in 'gem' condition, with all its lamellae intact, can be difficult.

Diving off Portsea, in Port Phillip Bay, these shells are uncommonly encountered in water depths below 8 metres. Occasionally a living example will be found on top of the sand; however, they typically live buried in the sediment, with only white coloured inhalant/exhalent siphons protruding ~5mm above the sand, betraying their presence.

It is my belief that living shells found in an exposed position have 'ejected' themselves from the safety of the sand to avoid an interaction with a predator.

A shell more frequently observed at Portsea is the Muricid,

Pterochelus triformis. It is always found on top of the substrate, and more often than not, is heavily overgrown with encrusting organisms. Evidence, perhaps, that it is unlikely this species burrows beneath the sand when hunting their prey.

On quite a few occasions I have found one or more of these murex shells attached to the outside of a hapless 'excavated' Bassina, and on one occasion I dislodged a murex to find a neatly beveled, round hole drilled into the shell immediately beneath where the murex had been positioned (figure 1).

Could it be that it is only once they are out of their usual abode that Bassina shells are subject to opportunistic attacks by these murex shells or do the murex shells have some mechanism that triggers an escape response, thus bringing the animal to the surface? I guess this question won't be answered until someone observes such an interaction from the beginning!

Besides being impressive ornamental sculpture, it seems that the raised lamellae that adorn these shells also serve as a defensive mechanism and murex shells don't always enjoy a meal - despite all their hard work - as I have found a few *Bassinas* with holes drilled through a lamella (figure 2).

Michael Lyons

## Diving at Stony Point Jetty with Michael Lyons and Simon Wilson

For once the Jetty was almost devoid of fishermen, but there were still plenty of ink stains showing from a recent massacre of squid. Easy entry off the platform and a simple swim drift up to the North end before descending. Visibility was not good. My plan was to work back along the outer edge of the Jetty and luckily the next pylon was sometimes visible in the murk to help with navigation. There were many interesting shells found.

Acanthochitona sp on rubble, very small 7mm and yet to be identified, but most likely is Acanthochitona pilsbryi. Diodora lineata very large on rocks and pylons. Emarginula candida live on shell rubble for the first time at Stony Point. Clanculus aloysii everywhere, Calliostoma comptum on sponge, Zeacrypta immerse very fresh dead large and nice. Pseudamycla miltostoma and Mitrella cf lincolnensis, Cymatiella verrucosa and a nice Cabestana spengleri of average size as well as a large Cabestana tabulata which with the periostracum on blends smoothly into the growth on the pylons. Microculus dunkeri always present in small numbers. Fresh dead Austrodrillia beraudiana and both Murex triformis and Conus anemone.

Many bivalves were also located, mostly dead and including Neotrigonia margaritacea, Hiatella australis, Lutraria rhynchaena, Dosinia victoriae, Notocallista diemenensis, Pholas obturamentum and Irus crenatus. Of interest a single large Eucrassatella kingicola was found under the jetty – usually much further out in the channel. A single valve of *Myadora complexa* was also collected and the best was a 38mm red *Notochlamys* hexactes on rubble near a pylon.



Figure 1 Close up image of successful drill hole



lamella

## THE FAMILY UNGULINIDAE IN VICTORIA

This is a family of bivalve shells, often globose, and often confused with species of Lucinidae. The hinge has two cardinal teeth but the laterals are either absent or somewhat obsolete. Peter Noonan wrote extensively on the family in 1991/1992. These notes give some more detail on the named Victorian species.

### Zemysina Finlay, 1926, Trans. Proc. N.Z. Institute 57, P. 462

The species described below has been placed by Huber in genus **Zemysina Finlay**, **1926** [Extract below] However, WoRMS has them in *Felaniella*. I consider that Finlay's description of *Zemysina* fits our species much better than that of *Felaniella* and so the former is used here.

"Diplodonta globularis Lamarck, 1818" included by Suter, is here also described as a new species (Z. globus nov.), for Lamarck's shell was named from King George's Sound, W.A., and is quite different, the Eastern Australian representative known as globulosa A.Ad. being different again. These three and Z. striatula nov. form an easily recognised branch of the Zemysia line (or vice-versa), having a hemispherical thin and inflated shell, submedian and inflated beaks overtopping a very narrow hinge-line, and small short teeth, and one may emphasize these differences by providing a new subgeneric name Zemysina with Z. globus nov. as type. This group also goes far back in the New Zealand Tertiary.

Section FELANIELLA Dall, 1899. Type *Felania usta* Gld. Shell like *Diplodonta* but heavy, compressed, externally smooth, with a conspicuous dark periostracum and less equilateral valves.

Description of *Felaniella* Dall, 1899, Journal of Conchology 9, P. 244

Zemysina globularis (Lamarck, 1818) Lucina globularis Lamarck, Anim. Sans. Vert. 5, 1818: 544

Lucine globulaire. Lucina globularis.

L. testá subglobosá, tenui, albidá, vesiculosá; dentibus lateralibus nullis. Mus. n.º Habite les mers de la Nouvelle-Hollande, au port du Roi

dabite les mers de la Nouvelle-Hollande, au port du Roi Georges. Largeur, 11 millimètres. Shell sub-globose, thin, white, swollen, no lateral teeth. 11mm, Seas of New Holland – King George Sound. (Lamarck's original description at left)

The photo at I It was taken fr Conchyliologi The figure at r of Recent Bive

The photo at left is of the holotype in the MHN Paris. It was taken from an article by Lamy, in Jounal de Conchyliologie 65, 1920, P. 351. The figure at right is from Hanley, 1856, Catalogue of Recent Bivalve Shells, Pl. 14, fig. 16.



This species is fairly easy to identify, it being more inflated than others in the family. Charles Gabriel dredged it between Phillip and French Islands, Western Port, and off Point Cook in Port Phillip. It is also found in Tasmania, South Australia and south-western W.A. **Length** is up to 25mm.

Species 53. (Mus. Hanley.)

- LUCINA GLOBULARIS. Luc. testá subglobosá, tenui, inflatá, præcipuè circa umbones, lævigatá, aut concentricè irregulariter tenuistriatá, lunulá nullá, cardine dentibus duabus centralibus in utráque valvá; albidá.
- THE GLOBULAR LUCINA. Shell subglobose, thin, inflated, especially around the umboes, smooth or concentrically irregularly finely striated, no lunule, hinge with two central teeth in each valve; whitish.
- LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 231.

Hab. New Zealand.

This shell in Mr. Hanley's cabinet is referred to the above-named Lamarckian species, on the authority of a continental collector from whom it was received.



The description and figure above are from Reeve, Conch. Icon. 6, Plate 9, species 53, 1850.

### Zemysina tasmanica (Tenison Woods, 1877)

Diplodonta tasmanica Tenison Woods, Proc. Roy. Soc. Tas. for 1876 (1877): 158

No. 79. DIPLODONTA TASMANICA. n.s. D.t. orbiculari, subglobosa, tenui, alba, subpellucida, epidermide fusca plus minusve induta ; concentrice striata, striis incrementi tantum sed 2-3 latioribus insignita, natibus lævibus, acutis, ligamento conspicuo, margine dorsali acuto. Long. 17, lat. 18.

Shell orbicular, subglobose, thin, white subpellucid, more or less covered with a fuscous epidermis; concentrically striate with lines of growth only, but distinguished by 2-3 much broader lines; umbones smooth, acute; ligament conspicuous, dorsal margin acute. Storm Bay, and Blackman's Bay, not uncommon. W. F. Petterd, W. Legrand, Rev. H. D. Atkinson.



Fig. from Tate and May, 1901: Proc. Linnean Soc. NSW Pl. 27, fig. 102

Huber has this species in genus Zemysia Finlay, 1926. Finlay's genus description is somewhat vague and it is noted that WoRMS retains it for New Zealand species but none of those from eastern Australia. Lamprell and Healy has Zemysina as a subgenus of Diplodonta. For this article, it is given full generic status. Z. tasmanica was stated by Hedley (in Proc. Linn. Soc. NSW, 29, 1904, P. 196) to be a synonym of Diplodonta zelandica Gray, 1835 (in Yate "Account of New Zealand", Appendix, P. 309 as Lucina) but this appears to be no longer accepted. It is less inflated than Z. globularis and has stronger teeth. Its range appears to be from central NSW to South Australia including Tasmania. Shell length is up to 25mm or a bit more.

#### Diplodonta globulosa A. Adams, 1855

Diplodonta globulosa A. Adams, Proc. Zool. Soc. London, 1855: 226

This is figured in Joyce Allan, 1950, "Australian Shells", P. 312, text fig. 75, fig. 11, and also described in Macpherson and Gabriel, 1962, P. 323. However, I can find no contemporary figure in the literature. For the record I have the original description (below) but I note that Hedley recommended the name be suppressed as unrecognizable. He could not find a specimen of this unfigured species in the BMNH. (P.L.S.NSW 1913: 267). It could be that this is a synonym of *Joanisiella sphaericula* Hedley, 1906 (= *Toralimysia eccentrica* Iredale, 1936). Huber states that this is the case.

Shell thin, rounded, ,

striated, umbones

two cardinal teeth,

subglobose, hardly oblique,

dull white, concentrically

submedial, excavated in

front, posterior rounded;

divaricate, subobsolete, no

22. DIPLODONTA GLOBULOSA, A. Adams. D. testa tenui, rotundata, subglobosa, vix obliqua, sordide alba, concentrice striolata, umbonibus submedianis, anteversis, latere antico superne excavato, postico rotundato : cardinis dentibus apicalibus duobus, divaricatis, subobsoletis, lateralibus nullis.

Hab. Moreton Bay (Mr. Strange). Mus. Cuming. This species appears distinct from any hitherto described, although a great similarity runs through all the species of the genus.

## Numella Iredale, 1924, Proc. Linn. Soc. NSW, 49, P. 206 (adamsi Angas)

#### (180) DIPLODONTA ADAMSI (Angas, 1868).

For this species, described by Angas under the genus Mysia, subgenus Felania, I propose the new generic name Numella. This genus appears to be close to Felaniella Dall (Journ. Conch., ix., 1899, pp. 244-245), proposed for a Japanese species Felania usta Gould.

The two Australian species, adamsi and jacksoniensis, both of Angas, published at the same time, differ a little from each other in their hinge-teeth, but they may, for the present, be classed together. I could not understand how this species had been placed under Diplodonta, and left there so many years, until I found that it was one of the commonest shells of the Sydney beaches, being even used to make ornaments by the aborigines of Botany Bay, and thus, on account of its very commonness, had escaped serious study.

Numella adamsi (Angas, 1868)

Mysia (Felania) adamsi Angas, Proc. Zool. Soc. London, 1867: 910, Pl. 44, fig. 9

## MYSIA (FELANIA) ADAMSI, n. s. (Pl. XLIV. fig. 9.)

Shell depressly orbicularly elongate, white, shining, covered with a very thin transparent horny epidermis ; concentrically very finely irregularly striated, smooth and polished at the umbones; lunule very small; margins simple. Hinge with two teeth in each valve, one of which is bifid.

Long. 6, alt.  $6\frac{1}{2}$ , lat.  $3\frac{1}{2}$  lines. Hab. Port Jackson. Dredged in deep water.

> This little shell is extremely common along the east coast of Australia, from Southern Qld, NSW, Tasmania and central Victoria. Length is to 10mm. Photo at left from Atlas of Living Australia

## Numella jacksoniense (Angas, 1868)

Mysia (Felania) jacksoniensis Angas, Proc. Zool. Soc. London, 1867: 910, Pl. 44, fig. 10

MYSIA (FELANIA) JACKSONIENSIS, n. s. (Pl. XLIV. fig. 10.) Shell triangularly depressly orbicular, posterior side rounded, anteriorly somewhat obliquely produced, pale rosy flesh-colour, covered with a light-green shining epidermis; umbones produced, approxi-mate; concentrically finely irregularly striate, the lines of growth strongly impressed at intervals; interior pinkish.

Long. 4, alt.  $4\frac{1}{4}$ , lat.  $2\frac{1}{2}$  lines.

Hab. Dredged in deep water in Port Jackson.



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laterals. Huber has the next two species in genus Microstagon Cossmann, 1896. WoRMS retains them in

Numella and I am happy to retain

that genus as well.





#### Toralimysia Iredale, 1936, rec. Aust. Mus. 19 (5): P. 273

#### Toralimysia, gen. nov.

Type-T. excentrica sp. nov.

Hedley<sup>19</sup> figured a Sydney shell under the name *Joannisiella sphaericula* Deshayes, but did not compare it with authentic specimens, and no shell was found under the name in the British Museum. The above name is therefore given to the shell Hedley figured, the new generic name being necessary as the type of *Joannisiella* 

Melvill and Standen<sup>20</sup> Diplodonta ethima appears to be the true sphaericula or a very slight variant. Hedley's figures above cited are excellent, and the local shell differs from the type of Joannisiella in form and appearance, and especially in lacking the excavate pseudo-escutcheon in which the external ligament is buried. Our shell clearly shows the ligament outside, and has the cardinal teeth more spaced and the lateral grooving obsolete.

#### Toralimysia excentrica Iredale, 1936

Toralimysia excentrica Iredale, Rec. Aust. Mus. 19, 1936: 273

## Synonym: Joannisiella sphaericula Hedley, 1906, Proc. Linn. Soc. NSW 30: 544, figs. 18-21 (non Deshayes, 1855)

JOANNISIELLA SPHÆRICULA Deshayes.

(Plate xxxii., figs.18, 19, 20, 21.)

A small bivalve from the Parramatta River was recorded and described by G. F. Angas \* under the name of *Mysia sphæricula* or *Diplodonta sphæricula* Deshayes. He did not as usual quote a reference, and apparently regarded the name as an unpublished one.

Subsequent authors who referred to this species and failed to trace the name to its source are, Tryon,<sup>†</sup> Tapparone Canefri<sup>‡</sup> and Pritchard and Gatliff.§ The latter, who extended the range of the shell to Victoria, indeed substituted Angas for Deshayes as the author of the species. Though Deshayes never described a *Diplodonta* under this title, it is obvious that his *Cyrenella sphæricula* || from Moreton Bay, Queensland, was based on the species under discussion.

The thin swollen shell, epidermis and other characters, do not suit the usual classification of this in *Diplodonta*, but appear to claim for it admittance to a genus *Joannisiella*, proposed by Dall¶ for an Oriental group, typified by *Cyrenoida oblonga* Hanley.\*\*

As this species has not yet been illustrated, I add drawings of a specimen from Sydney Harbour, 18mm. long and 16mm. high.

\* Proc. Zool. Soc., 1867, p. 927. + Proc. Acad. Nat Sci. Philad. 1872, p.95. ‡ Acad. R. Sc. Torino (2) xxviii., 1873, p. 238. § Proc. Roy. Soc. Vict. (2) xvii., 1904, p.224. || Deshayes, Proc. Zool. Soc., 1854 (1855), p.340. ¶ Nautilus ix., 1895, p.78. • Hanley, Recent Shells, 1844, pl. xv., fig 6.



**Range:** appears to be from southern Queensland, NSW, Tasmania and possibly Victoria *Felaniella* **Dall**, **1899**, Journal of Conchology 9, P. 244 (See above for Dall's description)

Diplodonta sublateralis E.A. Smith, 1884, Zool. "Alert": 104, Pl. 7, fig. K

#### 44. Diplodonta sublateralis. (PLATE VII. fig. K.)

Shell very inequilateral, much broader behind than in front, scarcely longer than high, moderately inflated, white, finely concen-trically sculptured with the lines of growth. Posterior dorsal margin nearly horizontal, straight at first, then gradually curving into the broadly arcuate lateral outline. Front dorsal edge somewhat oblique, scarcely recurved near the beak, but afterwards rounding into the side margin, which is very much more suddenly curvate than at the opposite end. Ventral margin more sharply arched than the posterior, but less so than the anterior. Umbones small, acute, only slightly elevated, situated far in advance of the centre. Hinge-plate narrow in the right valve, conspicuously grooved in front of the two cardinal teeth ; of these the anterior is very small, lamellar, and falls perpendicularly beneath the beak, the posterior being about three times as thick and deeply bisected. The ligamental furrow is narrow and 51 millim. in length. The muscular scars are subequal, the posterior a trifle broader. Length 19½ millim., height 18½, diameter 10. Hab. Torres Straits, 7–10 fms.



Only a right valve of this species was obtained by Dr. Coppinger. which, however, is apparently distinct in form, the chief distin-

guishing character in species of this genus. It recalls to mind D. lateralis, mihi, from the island of Rodriguez, although it is sufficiently distinct in form. The anterior side is longer, the beaks less lateral, and the height of the shell in proportion to the length is greater.

In Lamprell and Healy (1998), Page 148, fig. 374 is Felaniella (Zemysia) sublateralis. Fig. 374a is of the holotype in the BMNH. However, the photos are not marked as a or b.

**Range:** Although described from Torres Strait, this species is recorded by Macpherson and Gabriel, 1962, from Port Phillip, Victoria.

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Alan Monger