

NEWSLETTER

AUSTRALIAN SHELL NEWS

NO. 130 OCTOBER 2006

Globe-trotting nudibranch arrives in Australia

Richard Willan



Nudibranchs are especially good at hitching rides on ships' hulls; one could describe them as long-distance back-packers. Their rapid life cycles, high reproductive output, physiological adaptability and opportunistic diets, have preadapted them to travel widely round the globe thanks to mankind's sea voyages. So extensive are their travels that it is now impossible to tell the original distribution of at least two nudibranchs that have become established in Australia in the last 50 years (*Thecacera pennigera* and *Okenia pellucida*).

Although nudibranchs comprise almost half the 28 marine molluscs that have become naturalised in Australia to date, none of them has become a marine 'pest', or is likely to become one. Some of these nudibranchs have spread rapidly within Australia since their arrival, both by natural spread and by additional spread with coastal shipping, and others have hardly spread at all.

Much is made these days about protecting Australia's biosecurity and preventing marine 'pests' from getting established in this country. Certainly, the examples of ecological disasters caused by some of the foreign invertebrates (notably the New Zealand Screw Shell *Maoricolpus roseus* and the Asian Seastar *Asterias amurensis*) in Australian coastal waters are shocking. But what most people don't realise is that most of these foreigners have entered Australia undetected and fitted into marine communities without so much as a ripple. Although they originated from overseas and have become established in Australia, they could never be considered as marine 'pests'. The recent example of the so-called Naples Aeolid, *Spurilla neapolitana*, is a case in point.

Spurilla neapolitana is a very active large aeolid, reaching a maximum size of 100 mm when crawling, though 50 to 75 mm is usual for adults. Its cerata are distinctive, being long and slender, and coiled near the tip like a partially open fern frond. When alarmed, an animal straightens out its cerata so it looks just like a sea anemone. The rhinophores are

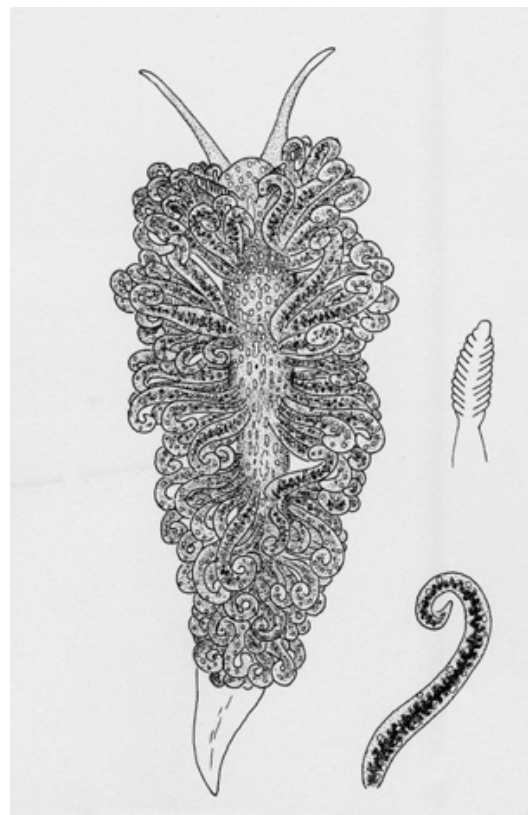


Fig. 1. Drawing of live *Spurilla neapolitana* from Osaka Bay, Honshu Island, Japan. Dorsal view of 25 mm animal with details of posterior aspect of right rhinophore and single ceras (from Hamatani 2000).

lamellate. The background colour is brown or pink or red, and there are white spots all over the body and cerata. The accompanying line drawing (Fig. 1) and photograph (Fig. 2) show these characteristic features very nicely. *Spurilla neapolitana* eats sea anemones, and the type and colour of the sea anemone apparently determines the background colour of the slug's body; for instance it becomes strawberry-red when eating the Red Waratah Sea Anemone *Isactinia tenebrosa*.

Being large and living intertidally means that *Spurilla neapolitana* could not go for long in Australia



MALACOLOGICAL SOCIETY OF AUSTRALASIA

NEWSLETTER



Society information

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All enquiries and orders should be sent to Malacological Society of Australasia, C/o Dr. Mark Norman,, Sciences, Museum of Victoria, GPO Box 666, Melbourne, Victoria 3001

The Society's Newsletter, published quarterly, and the journal *Molluscan Research*, published three times a year, are sent to all members.

Membership fees 2006

Includes <i>Molluscan Research</i> and MSA Newsletter	
Ordinary members (Aust., Asia, W.Pacific)	\$A70
Ordinary members (Rest of the world)	\$A100
Extra family member	\$A5
Affiliate organization	\$A100
Student member	\$A45

Membership fees, in Australian dollars, should be sent to Malacological Society of Australasia, C/o



From the President

Things are going well on all fronts for the Malacological Society this year. Our publications are doing well under Winston's and Des' direction; many thanks for their considerable efforts. Keep sending any mollusc articles to either publication.

Our revised web site is up and running, thanks to Bill Rudman and Alison Miller. It is in the same style as the old one but all the information has been updated. Go to www.malsocaus.org.

Our Molluscs 2006 conference is fast approaching for early December with accompanying workshops on landsnails, cephalopods and the use of major mollusc collections to diagnose biogeographic regions around the Australian coastline. We have received good sponsorship support for these workshops. For those yet to register, be quick to catch the early bird discounts. For further information, see the link on our website to the conference at the Uni-

Dr. Mark Norman,, Sciences, Museum of Victoria, GPO Box 666, Melbourne, Victoria 3001.

Victorian Branch

Secretary Michael Lyons, 19 Banksia Street, Blackburn, VIC 3130. Phone (03) 9894 1526. Meetings are held at the Melbourne Camera Club, cnr. Dorcas and Farrars Streets, South Melbourne, on the third Monday of each month. No meeting in January, July or December.

Queensland Branch

Meetings are held at 7:30 pm on the last Tuesday of each month except December at the TLC Building, 20 Peel Street, South Brisbane,. Correspondence: Mr R Ellis, PO Box 64, Brisbane Albert Street, QLD 4002. Phone (07) 3224 2923 (W); (07) 3848 9270 (H) or email msaqld@powerup.com.au

NSW Branch

NSW Branch meetings are held at 2 pm on the fourth Saturday of each month at the Ryde-Eastwood Leagues Club, 117 Ryedale Rd, West Ryde, Sydney. Contact John Franklin (02) 9986 0057 or email jaffers@easy.com.au

Newsletter

Editor: Des Beechey, Malacology Department, Australian Museum, 6 College St, Sydney, NSW 2010. Phone (02) 9320 6166 Email desb@austmus.gov.au

This publication is not deemed to be valid for taxonomic purposes (See article 8b in International Code of Zoological Nomenclature 3rd Edition (1985).

Web Site

www.malsocaus.org

versity of Wollongong.

Our AGM will be held during the Molluscs 2006 meeting. Anyone with business to be raised at the AGM should send it to me at the contact details below. By now you should have received nomination and proxy forms for election of office bearers.

MSA membership is slowly growing again after our lean years, following the drop after the increase in membership fees. If you know of anybody interested in molluscs that can be encouraged to join, send them details of our website or get them to write to me at the address below. The move to Magnolia Press has significantly reduced our publishing costs and we are now a leaner more efficient society. As a consequence our finances have now stabilized and we are firmly in the black again. Financial reports for the last three years will be presented at the AGM during the Molluscs 2006 conference.



without being noticed. What is really surprising though is that it was observed throughout New South Wales in such a short space of time, suggesting a very rapid dispersal from its original introduction.

Denis Riek encountered the first *Spurilla neapolitana* in Australia on 1 May 2005 in the mouth of the Brunswick River in northern New South Wales (Riek 2005). The 10 animals recorded since then are summarised in the accompanying table. A positive identification was made possible by the collection of an animal at Hastings Point, northern New South Wales, on 2 Feb 2006 by Denis. He was responding to my challenge "you won't find another one!" And, just to show *Spurilla neapolitana* is well and truly established there, Denis collected two more at Hastings Point on 3 October 2006. These two animals were accompanied by several spawn masses.

Spurilla neapolitana was first described in 1823 from Naples in southern Italy. Its spread around the world over the last 50 years has been truly meteoric, with records from the tropical western Atlantic, California (where it was confused with the native *Aeolidiella chromosoma*, but has now been recognised as distinct, Camacho-Garcia et al. 2005, Behrens & Hermosillo 2005), tropical eastern Pacific Ocean, Hawaii, Japan and Hong Kong. Significantly, all the first four records from Australia are from ports (Brunswick River, Jervis Bay and Botany Bay), so it must have spread rapidly along the east coast from these ports because the later four localities are not ports (Long Reef and Hastings Point). Given its rapid spread on the east coast of Australia and latitudinal tolerance, it seems *Spurilla neapolitana* could survive anywhere in this country. So go down to your favourite rocky shore today and have a look for it.

References

Behrens, D.W. & A. Hermosillo 2005. *Eastern Pacific nudibranchs: a guide to the opisthobranchs from Alaska to central America*. Sea Challengers: Monterey.



Fig. 2. Photograph of *Spurilla neapolitana* from Hastings Point, northern New South Wales, Australia, 3 October 2006. Detail of front end of 35 mm animal. Note the lamellate rhinophores and spawn mass besides the animal (Photo: Denis Riek).

Camacho-Garcia, Y., T.M. Gosliner & A. Valdés 2005.

Field guide to the sea slugs of the tropical eastern Pacific. California Academy of Sciences: San Francisco.

Coleman, N. 2005. Indopacific identity crisis. *Sport Diving* 113: 36.

Hamatani, I. 2000. A new recorded species of the genus *Spurilla* Bergh, 1864 from Osaka Bay, Middle Japan (Opisthobranchia, Aeolidacea). *Venus, Japanese Journal of Malacology* 59: 263-265.

Hoare, J.L. 2006. *Spurilla chromosoma?* from Bare Island, Sydney. [Message in] Sea Slug Forum. Australian Museum, Sydney. Available from <http://www.seaslugforum.net/find.cfm?id=15643>

Miles, D.W., 2006 (Mar 16) Another *Spurilla chromosoma* from Sydney. [Message in] Sea Slug Forum. Australian Museum, Sydney. Available from <http://www.seaslugforum.net/find.cfm?id=15975>

Mitchell, M, 2006 (Mar 16) Another *Spurilla chromosoma* from Sydney. [Message in] Sea Slug Forum. Australian Museum, Sydney. Available from <http://www.seaslugforum.net/find.cfm?id=15736>

Riek, D.W., 2006 (Jan 27) Re: *Spurilla chromosoma?* from Bare Island, Sydney. [Message in] Sea Slug Forum. Australian Museum, Sydney. Available from <http://www.seaslugforum.net/find.cfm?id=15668>

No.	Locality	Depth	Date	Collector	Collected	Reference
1	Mouth of Brunswick River	1 metre at high tide	1 May 2005	Denis Riek	No	Riek (2006)
2,3	Mouth of Brunswick River	low tide	15 May 2005	Denis Riek	No	Riek pers. comm.
4	Huskusson, Jervis Bay	low tide	Sept 2005	Neville Colman	No	Coleman (2005)
5	Exit Point, Bare Island, Botany Bay	1 metre at low tide	23 Jan 2006	Jason Hoare	No	Hoare (2006)
6,7	Long Reef Aquatic Reserve, Dee Why	low tide	Jan 2006	Phil Coleman	Yes	Mitchell (2006)
8	Hastings Point	low tide	2 Feb 2006	Denis Riek	Yes	Riek pers. comm.
9	Long Reef Rock Platform, Collaroy	low tide	24 Feb 2006	Donald Miles	No	Miles (2006)
10,11	Hastings Point	low tide	3 Oct 2006	Denis Riek	Yes	Riek pers. comm.

Chronological summary of discoveries of Spurilla neapolitana in Australia





Memories of a 'Snailer'. Brian J. Smith (1939-2006)

Brian Smith was born on 24th June, 1939, in Stockport, near Manchester. He obtained his undergraduate degree and his doctorate at Bangor University in Wales. In 1962 he moved to Melbourne and eventually joined the Museum of Victoria as Curator of Invertebrates.

His children with his first wife, Beryl, grew up with snails and pond dipping nets, so life must have been rather interesting. In 1985 Brian married Helen and they spent some time travelling and working overseas before Brian became ill and returned to Australia before Helen. He lived for a while with fellow 'snailer', the late Ron Kershaw and his wife, Win, and worked at the Queen Victoria Museum and Art Gallery in Launceston.

Helen returned to Australia and joined him in Victoria and after a while they moved to Scottsdale in Tasmania where Helen worked as a GP and Brian commuted to the QVMAG in Launceston. In 2003 they moved to Launceston where Brian was Curator of Zoology until his death.

I first met him when I was 19 years old and he was Curator of Invertebrate Zoology at the Museum of Victoria. He inspired me immediately with his knowledge, and interest in my budding mollusc fascination. Through the years we kept in contact when he was in Australia, and particularly when he moved with Helen to Scottsdale, then Launceston, while he was working at the QVMAG. He made frequent trips to Hobart and always dropped into the Tasmanian Museum for a chat about molluscs and life in the museum lane.

If you can be 'born' to museum work, then that was Brian. He was a natural as a curator, planner and organiser. His knowledge was phenomenal, and nothing was ever too much trouble. He adapted to new museum practices, and kept ahead with plans, policies, and especially information on molluscs. His passion went beyond mollusc research as he was also passionate about museums, always loyal to the institutions he worked in, and caring deeply about their



welfare.

Brian had no intention of retirement in the near future, planning to work as long as possible in his capacity of Curator of Zoology at the QVMAG. He and Ron Kershaw, who was an Honorary Researcher with the QVMAG, were working on an update of Tasmanian mollusc taxonomy for many years, with myself as another co-author. In 2005/2006, after Ron's death, this escalated with the inclusion of Dr Simon Grove of Hobart, a passionate mollusc collector and computer whiz. Simon collated all the data that had been amassed, and out of this was born *A Systematic List of Tasmanian Marine Mollusc*, by Grove, Kershaw, Smith and Turner (in press). Tragically Brian developed brain cancer and died just before the manuscript was sent off for publication. It is a fitting tribute to the lives and work of both Ron and Brian.

Brian will always be sadly missed by his family, friends and colleagues, but his memory will live on with his publications and books. Farwell Brian, my friend and mentor.

Liz Turner, Curator of Invertebrate Zoology
Tasmanian Museum and Art Gallery



Vale Terry Carless and Norm Gardner

Terry Carless

Queensland Branch member Terry Carless passed away suddenly on 11 October, 2006. Terry died while on a field trip in the Lamington National Park with Dr. John Stanisic and a scientific collecting group investigating the effects of global warming on flora and fauna.

Terry was a long-standing member of the Queensland Branch of the Society, and a valued volunteer at the Queensland Museum.

Norm Gardner

Norm Gardner, of Auckland, died at the age of 85 on 7 August 2006. Norm had been actively interested in shells for over 60 years.

Norm was the foremost amateur authority on molluscs in New Zealand over most of his collecting life. He was the author of several New Zealand species of Cyclophoridae, and *Placostylus ambagiosus gardneri* and *Potamopyrgus gardneri* were named after him. His most recent work was on landsnails of the Solomon Islands, in conjunction with Andre Delsaerdt.





Vale Noel Coleman (1947-2006)

Long time Society member and former President, Noel Coleman, died suddenly in July, shortly after he retired.

Noel was born in England and completed his Ph D in zoology at the University of Manchester. In 1973, with his wife Cathy, he migrated to Melbourne to take up a position with the recently established Marine Pollution Studies Group of the Victorian Government.

Noel remained with this group until retirement, surviving both changes in name and research direction. He was a key member of the Westernport Environmental Study (1973-4) and was one of the first to identify the high level of species diversity in benthic communities in Bass Strait. Subsequent projects covered a diverse range of topics, several on fisheries including scallops, and Noel remained a consultant to the Australian Fisheries Management Authority until his death.

Noel was a shell collector from childhood and was

a very active member of the Victorian Branch for over 30 years, holding several offices on the committee. He served as President of the Society 1989-1992. Noel attended his last branch meeting only one week before his death.

Noel will be remembered as a quiet, unassuming, supportive person with a broad range of interests beyond biology, including music and bromeliads. Noel is survived by his wife Cathy and daughter Ruth.



Suzanne Boyd



How did these snails get to Australia?

Graeme Annabell

Some unusual shells have been found in the most northern parts of Australia and one can speculate on how and when they first arrived.

Amphidromus cognatus has been found on islands off Darwin and also on the Coburg Peninsula, the most northern part of the Northern Territory. It is endemic to south-east Asia as well as Indonesia and the Philippines, where it is arboreal in woodlands. It was first reported from Australia by Fulton in 1907. It is possible that it was bought to Australia by early Indonesian travellers.

The shell is sinistral, 8-32 mm tall, with shallow sutures. The lip is weakly to moderately expanded, sharply reflexed, with a narrow umbilical chink. There are occasional weak radial growth lines, and a variable colour pattern.

Solem, A. (1983) First record of *Amphidromus* from Australia, with anatomical notes on several species (Mollusca: Pulmonata: Camaenidae). *Records of the Australian Museum* 35: 153-166



Amphidromus cognatus

Rachistria histrio has been recorded from the Loyalty Islands east of New Caledonia, New Caledonia itself, and Vanuatu, probably originating in Madagascar. It is also aboreal, living in tall forest in the canopy. It is found in Queensland "near the centre of the blackbirding trade".

The shell is of medium size, dextral, about 25 mm long. It is turritiform, solid, smooth, fairly glassy,

with dark brown spots and mid-brown and purple bands on a ground of rose, buff, flesh or cream. Aperture ovate, peristome acute, not expanded.

Solem (1959) suggests that *R. histrio* was imported to New Caledonia, then New Hebrides and Queensland from Madagascar, in the 1800s.

Solem, A. (1959) Systematics of the land and freshwater Mollusca of New Hebrides. *Fieldiana Zoology* 43:1-234.

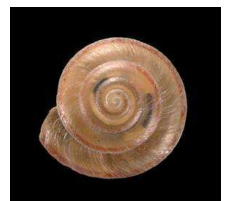
Trochomorpha melvillensis has only been found on Melville Island, north of Darwin. Solem (1989) said that there was an intriguing radiation of this species in Micronesia, where it is recorded from the Caroline Islands, some of the Solomon Islands, and Vanuatu to the Society Islands.

The shell is up to 12 mm diameter, coiled with a moderately elevated spire. Whorls are moderately rounded, sculptured with faint radial lines; the periphery is carinated and is white, with narrow spiral bands. The lip is slightly thickened internally, and the umbilicus wide.

Solem, A. (1989) Non-camaenid land snails of the Kimberley and Northern territory, Australia. I Systematics, Affinities and Ranges. *Invertebrate Taxonomy* 2:455-604



Rachistria histrio



Trochomorpha melvillensis





MOLLUSCS 2006 Meeting Update

The Molluscs 2006 Conference will be held at the University of Wollongong 6th -8th December, with pre-conference workshop 4-5th Dec. and post conference workshop 9-10th December.

Registration: via website at <http://www.uow.edu.au/conferences/MOLLUSCS06/>
or Society website <http://www.malsocaus.org/>

Early bird registration ends on 30th October **Abstracts** due Monday 6th November.

Student travel grants applications close 8th Nov.

Symposia

Evolution and systematics (incorporating biogeography, palaeontology, development etc.). Organisers: Winston Ponder (wponder@bigpond.net.au); Don Colgan (don.colgan@austmus.gov.au)

Keynote speakers

Prof. Mike Johnston (University of WA) Genetic subdivision, local adaptation and speciation in intertidal snails

Prof. Bernie Degan (University of Qld) Advances in molluscan evo-devo studies

Dr Louise Page (University of Victoria, Canada) Larval evolution in gastropods

Prof. David Lindberg (University of California, Berkeley) Abalone evolution

Ecology. Organisers: Angus Jackson (ajackson@mail.usyd.edu.au); David Blockley (dblockley@eicc.bio.usyd.edu.au).

Keynote speakers

Prof Christopher McQuaid (Rhodes University S. Africa) Invasive/indigenous mollusc interactions

Prof Tony Underwood (University of Sydney) Impacts of human development on intertidal molluscs

Dr George Jackson (University of Tasmania) Pelagic squids, life in the fast lane

Human interactions with molluscs (conservation issues, pests, invasive species, intermediate hosts for disease etc.). Organisers: Cameron Slatyer (Cameron.Slatyer@deh.gov.au); John Walker (jwal7956@bigpond.net.au).

Keynote speakers

Mr Cameron Slatyer (Director, ABRS, Canberra). Role of non-marine molluscs in prioritising conservation decisions

Assoc. Prof David Blair (James Cook University, Qld) Molluscs and their trematodes - impacts on human diseases in a changing world

Dr Bob Creese (NSW DPI) Conservation of marine and freshwater molluscs and their habitats

Dr Kirsten Benkendorff (Flinders Univ.) Molluscan medicines

Fisheries and aquaculture (with a special emphasis on abalone). Organisers: Wayne O'Connor (Wayne.O'Connor@dpi.nsw.gov.au); Fred Wells (fwells@fish.wa.gov.au).

Keynote speakers

Ms Jintana Nugranad (Prachuap Khiri Khan Coastal Fisheries R&D Center, Thailand) Tropical molluscan aquaculture

Dr Natalie Molschaniwskyj (University of Tasmania) Australian cephalopod fisheries and aquaculture.

Dr Fred Wells (WA Fisheries). Abalone and other molluscan fisheries in WA.

Speaker to be announced: An overview of Australian Abalone research

There will also be a general papers session

Workshops

4th – 5th December Preconference Workshop : Cephalopod identification and biology. Organisers: Dr Mark Norman (mnorman@museum.vic.gov.au) and Dr Mandy Reid (mandy.reid@optusnet.com.au).

7th December Mid conference workshop : Molluscs in marine bioregionalisation (half day). Organiser Dr Mandy Reid (mandy.reid@optusnet.com.au). Details on conference website.

9th -10th December Postconference Workshop : Land snails their identification, diversity and conservation. Organisers: Dr John Staniscic and Mr Michael Shea (Michael.Shea@austmus.gov.au)





Exotic snails and slugs found in Australia

Michael Shea

There are 47 species of snails and slugs currently known as introduced to Australia. This is a comprehensive and up-to-date review of all the 47 species. It deals with terrestrial snails and slugs, excluding freshwater and marine species. It covers species introduced to the Australian mainland, omitting a few species introduced to remote Australian territories such as Christmas Island. It does not include relocations of native Australian species within Australia. (The first 8 species are published here—the remainder will appear in the next issue of the Newsletter -Ed.)

Family Veronicellidae (Vaginulidae)

1. *Sarasinula plebeius* (Fischer, 1868)

Description. Large flattened slug with leathery upper surface (notum), mantle cavity and pneumostome (breathing pore) extremely small and not readily apparent, broad foot. Notum colour light to dark brown. 60mm.

Distribution. Eastern coastal QLD, NT and WA. Native to Tropical America.

Key localities. Currumbin Bird Sanctuary gardens; Besant Street residential gardens, South Brisbane.

Habitat and ecology. Suburban gardens, paddocks and cultivated areas – often seen crawling on wet lawns.

Remarks. Introduced to many tropical areas around the world.



2. *Laevicaulis alte* (Ferussac, 1821)

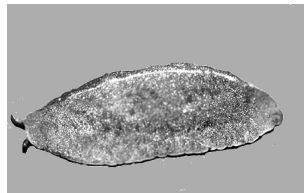
Description. Large flattened slug with slightly elevated minutely granular leathery notum, mantle cavity and pneumostome extremely small and not readily apparent, broad foot. Notum grey to dark grey with cream median dorsal stripe. 60mm.

Distribution. Eastern coastal QLD, NT and WA. Thought to have originated in Asia.

Key localities. Brisbane Convention and Exhibition Centre gardens, South Brisbane.

Habitat and ecology. Suburban gardens, paddocks and cultivated areas – often seen crawling on walls after rain.

Remarks. Introduced to many tropical areas around the world. Differs from *Sarasinula plebeius* in darker colour and pale median dorsal stripe.



Family Cionellidae (Cochlicopidae)

3. *Cochlicopa lubrica* (Muller, 1774) 'The Slippery Moss Snail'

Description. Shell small, smooth, glassy, pupiform-elongate, imperforate, outer lip thickened on inside, columella slightly sinuate. Transparent amber to flesh coloured with pinkish lip. Up to 7.5mm.

Distribution. Southern Australia, ranging from Sydney, NSW to SW Western Australia. European native.

Key localities. Glebe Gully, Randwick, Sydney; Kingsford Smith Park, Katoomba; Red Hill, Canberra.

Habitat and Ecology. Gardens with exotic plants, in cooler climate areas. Lives under leaves, pots, rubbish etc.

Remarks. May occur in almost plague proportions in suitable areas. Very slippery and difficult to pick up when alive.



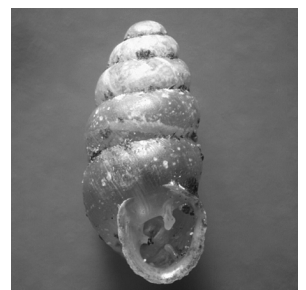
Family Pupillidae

4. *Gastrocopta servilis* (Gould, 1843)

Description. Shell very small, pupiform-elongate-cylindrical, smooth, aperture subquadrate with five to six lamellae. Light brown. Up to 2.6mm.

Distribution. Native to the West Indies but introduced into the Asia-Pacific and now widespread. Found across northern Australia from Broome to mid-eastern Queensland and off shore islands.

Key localities. Chillagoe Caves; Chapel Hill, Brisbane, QLD.



Habitat and ecology. In urban and plantation areas, ports and areas of habitat disturbance. In litter.

Remarks. Has a slender, longer shell, slender lamellae and brown colouration compared to native species.

Family Valloniidae

5. *Vallonia excentrica* Sterki, 1892 'The Eccentric Grass Snail'

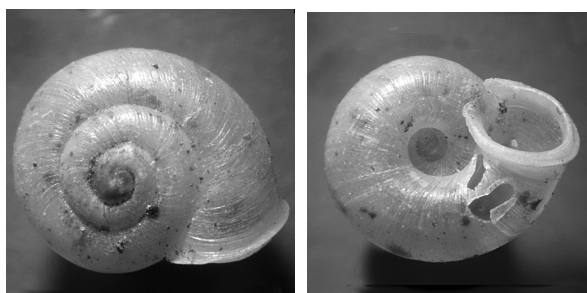
Description. Shell very small, smooth and silky, discoidal, last whorl flares out at edge, outer lip circular, greatly thickened and reflected, fairly wide umbilicus with 'eccentric' spiral. Translucent white. Up to 2.2mm

Distribution. Southern half of Australia including Norfolk and Lord Howe Islands. European native.

Key localities. South Maroubra and Hyde Park in Sydney; Cemetery Bay, Norfolk Island; Stephens Reserve, Lord Howe Island.

Habitat and ecology. Wherever exotic plants occur; in grass, under pots, rocks and drifts of leaves etc.

Remarks. Abundant in some areas. Resembles *Hawaiiia minuscula* but has fewer whorls and a thick outer lip. Australian specimens of this species were until recently known as *Vallonia pulchella*.



Family Pleurodiscidae

6. *Pleurodiscus balmei* (Potiez & Michaud, 1838)

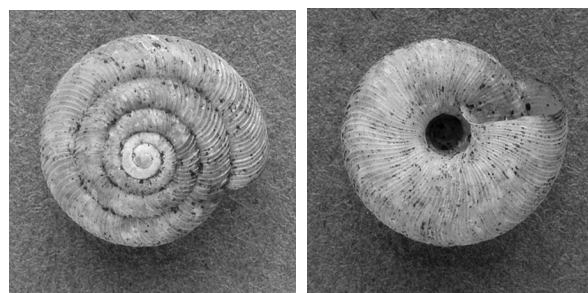
Description. Shell medium, discoidal, low dome spire in adults, whorls shouldered in juveniles with many regular sharp radial ribs, aperture edge unthickened, umbilicus fairly wide. Pale golden-brown. 8mm – 11mm.

Distribution. Introduced into the Sydney and Blue Mountains areas of NSW. Native to the eastern Mediterranean.

Key localities. Waverley Cemetery; Darling Point; Glebe Gully at Randwick; 'Everglades' at Leura.

Habitat and ecology. Associated with old stone walls and dumped masonry - bricks, roof tiles etc.

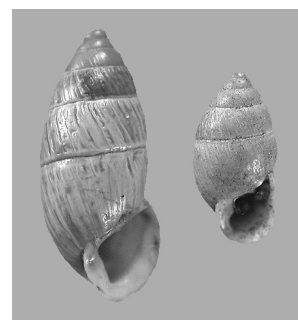
Remarks. Empty shells common. Resembles Charopidae but lacks complex secondary sculpture between ribs.



Family Enidae

7. *Chondrula (Mastus) pupa* (Linnaeus, 1758)

Description. Shell medium, ovoid elongate, with irregular growth lines and malleations, reflected outer lip, small denticle present on the parietal wall of aperture. Radially striated white and brown. 11.5mm **Distribution.** Castle Hill, Sydney. Native to the Mediterranean region (Malta etc.). **Key localities.** Formerly occurred at Excelsior Avenue, Castle Hill. **Habitat and ecology.** On cypress pines and herbs. Natural habitat – grassland, garigue, maquis, limestone. **Remarks.** First recorded in 1952 but apparently no longer occurs at the above locality.



Family Cerastidae (Cerastuidae)

8. *Rachistia histrio* (Pfeiffer, 1855)

Description. Shell medium, conical, rounded whorls, thin smooth and opaque. Cream, yellow or pink with solid or broken spiral bands of black, reddish brown and bluish grey, apex dark blue – grey. Animal white with black ocular tentacles. Up to 22mm. **Distribution.** From Kalpowar SF, SE QLD to Mt Garnet in the Einasleigh uplands of NE QLD. Native to east Africa. **Key localities.** Limestone Creek SF, SW of Gin Gin; Kalpowar SF; Forty Mile Scrub SW of Mt. Garnet.

Habitat and ecology. Rainforest and vine thicket, on leaves of trees.

Remarks. Generally uncommon.

