

SYDNEY SHELLER

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

Shell Club of Sydney Mission Statement:

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

Next Meeting:

23rd June 2001
(normally 4th Saturday)

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

1.30 for 2.00pm



Cypraea chinensis live, Little Bay Sydney
Courtesy Chris & Karen Barnes

Contributions:

Please send contributions to:

Steve Dean
166 Narrabeen Park Parade,
Mona Vale NSW 2103

Text in electronic form only. Photos, and discs by mail, or preferably by email to steve@dean.as

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(*The executive plans the field trips*)

Some of the topics inside:

- News and Classifieds
- Mollusc Fauna of Callala Beach
- Jokes
- Cypraeidae of Little Bay (cover photo)
- Sydney Harbour's Hidden Treasures

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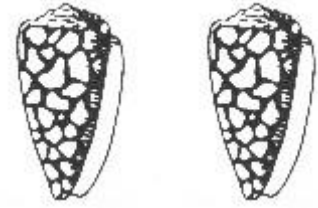
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THE MOLLUSC FAUNA OF CALLALA BEACH, JERVIS BAY

By John Franklin

Callala Beach is located in the Peronian region, south of Nowra New South Wales on the beautiful south coast and almost in the centre of Jervis Bay.

The beach to the north extends to Callala Creek and in the south to Myola. Looking south from Callala Creek one can observe the magical white sand, sweeping curvaceously the full length of the beach, to where it finally joins the Eucumbene River at Myola.

Along the beach fringe there appears a host of Australian native plants including Eucalyptus, Banksias and amongst others, a little flower which resembles the honeysuckle. In fact, John Evans, the explorer and surveyor, in 1846 named the beach Honeysuckle Beach. However with the passage of time the beach became known eventually as Callala Beach.

For some years there was debate over the derivation of the word 'Callala' in that the Aboriginal word for fish was "hallalla" and it so happened, that the birthplace of a prominent local convict was "Calala" in Ireland. Notwithstanding the debate, Callala Beach today stands as one of the most beautiful in the entire Jervis Bay area.

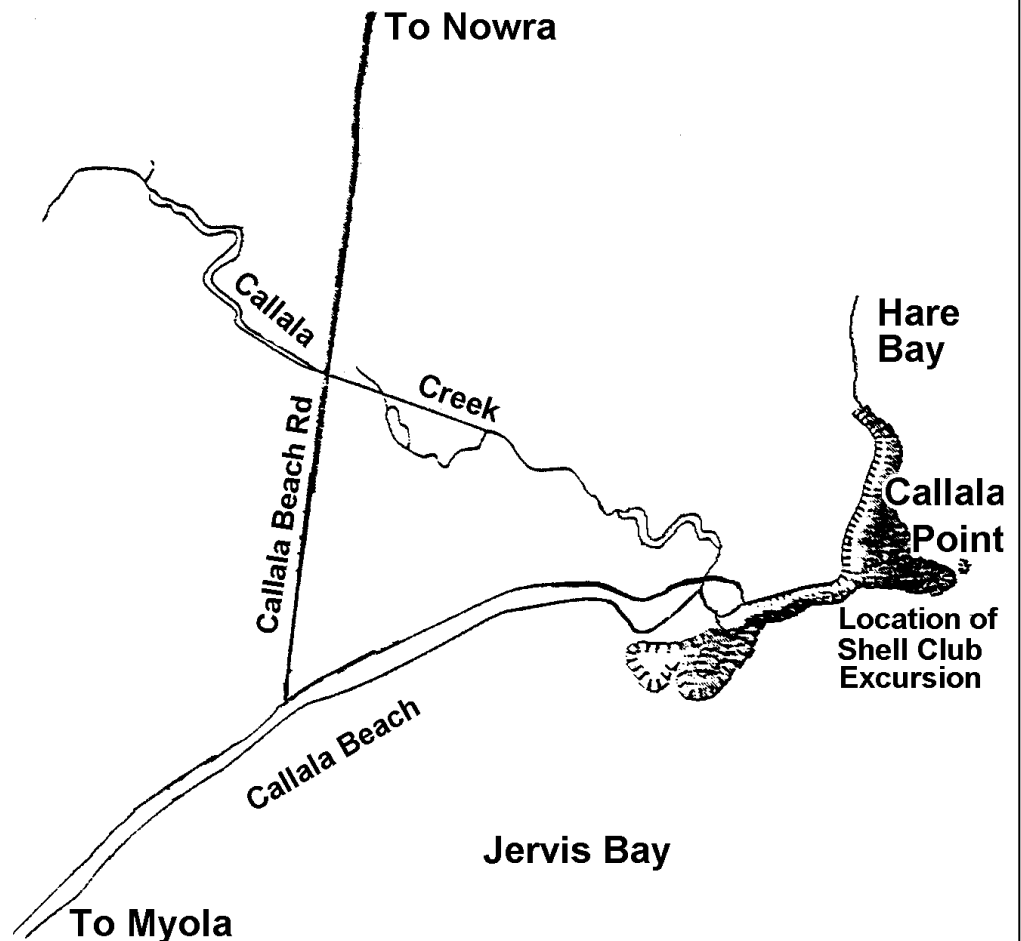
Mollusc fauna observations commenced in approximately 1993 initially on a casual basis and it has only been in the last 12 months that note taking and recording have been undertaken. In particular, the area was intensely studied on the 13, 14, 15 and 16 April 2001.

An interesting feature of the area is it's complexity. At the northern end of the beach there are rock platforms which extend across sandy/mud flats located at the end of the beach and also north across the path of the Callala Creek. At low tide the creek area is surrounded by sandy mud flats, thus making it possible to observe the traditional sandy/mud flat dwellers such as, *Pyrazus ebeninus* (Bruguiere, 1792), *Velacumantus australis* (Quoy and Gaimard, 1834) and *Tylozpera scutulata* (Leach, 1814).

Callala Beach is not a real surf beach in that small waves incessantly break upon the beach bringing with them from time to time, lots of seaweed.

The purpose of the study was firstly to seek to identify by observation those species that inhabit the area. Secondly, to examine, over a period of time, as to whether or not there were any additions or indeed any absences in the number of species inhabiting the area. Thirdly, to use the observations as a background in the future for a study on the comparative analysis of mollusc fauna on a geographical distributional basis.

The observations were confined only to Gastropods and Bivalves.



Observations of Live Mollusc Fauna - Beach

- | | | |
|-------------------|-------------------------------|------------------|
| 1. Naticidae | Polinices ionicus | (Lamarck, 1822) |
| 2. Naticidae | Polinices sordidus | (Swainson, 1821) |
| 3. Mesodesmatidae | Paphies (amesodesma) elongata | (Reeve, 1854) |
| 4. Donacidae | Donax (plebidonax) deltoides | (Lamarck, 1818) |

Notes:

- ∇ All the above species were located at low tide on the intertidal sand flats
- ∇ Polinices conicus leaves a characteristic wiggly trail. So does Paphies elongata
- ∇ Polinices sordidus leaves a rather wide trail on the sand. These specimens were located at the northern end of the beach.

Observations of Live Mollusc Fauna - Mud Flats - Rocks

- | | | |
|-------------------|----------------------------|-------------------------|
| 1. Batillariidae | Pyrazus ebeninus | (Bruguere, 1792) |
| 2. Batillariidae | Velacumantus australis | Quoy & Gaimard 1834) |
| 3. Naticidae | Polinices sordidus | (Swainson, 1821) |
| 4. Fissurellidae | Scutus antipodes | Montfort, 1810 |
| 5. Patelloioae | Cellana tramoserica | (Holten, 1802) |
| 6. Patelloidae | Patella peronii | Blainville, 1825 |
| 7. Lottiidae | Notoacmea petterdi | (Tenison - Woods, 1876) |
| 8. Lottiidae | Patelloida mufria | (Hedley, 1915) |
| 9. Neritidae | Nerita atramentosa | Reeve, 1855 |
| 10. Turbinidae | Subnivalia undulata | (Lightfoot, 1786) |
| 11. Trochidae | Odontotrochus indistinctus | (Wood, 1828) |
| 12. Littorinidae | Littoraria luteola | Quoy & Gaimard 1834) |
| 13. Littorinidae | Nodilittorina acutispira | Smith, 1892 |
| 14. Ranellidae | Charonia lampas rubecunda | (Perry, 1811) |
| 15. Cypraeidae | Cypraea vitellus | L., 1758 |
| 16. Muricidae | Morula marginalba | (Blainville, 1832) |
| 17. Muricidae | Dicarthais orbita | (Gmelin, 1791) |
| 18. Trimusculidae | Gadinalea nivea | Hutton, 1883 |
| 19. Siphonariidae | Siphonaria Zelandica | Quoy & Gaimard, 1833 |
| 20. Siphonariidae | Siphonaria funiculata | Reeve, 1856 |
| 21. Conidae | Conus papilliferus | Sowerby, 1834 |

Class Gastropoda

- | | | | |
|----------------------|---------------------------|----------------------------|-------------------|
| Patellidae | Cellana conciliata | (Iredale, 1940) | |
| | Cellana tramoserica | (Holten, 1802) | |
| | Patella champmani | (Tenison Woods, 1876) | |
| | Patella peroni | (Blainville, 1825) | |
| Lottiidae | Notoacmea petterdi | (Tenison - Woods, 1876) | |
| | Patelloida alticostata | (Angas, 1865) | |
| | Patelloida mimula | (Iredale, 1924) | |
| Neritidae | Patelloida mufria | (Hedley, 1915) | |
| | Merita atramentosa | (Reeve, 1855) | |
| Haliotidae | Smargdia Souverbiana | (Gassies, 1861) | |
| | Haliotis ruber | (Leach, 1814) | |
| Fissurellidae | Amblychilepas javanencis | (Lamarck, 1822) | |
| | Amblychilepas nigrita | (Sowerby, 1834) | |
| | Clypidina rugosa | (Quoy & Gaimard, 1834) | |
| | Diora lineata | (Sowerby, 1835) | |
| | Emarginula candida | (Adams, 1851) | |
| | Scutus antipodes | (Montfort, 1810) | |
| | Tugali parmophoidea | (Quoy & Gaimard, 1834) | |
| | Turbinidae | Austroliotia botanica | (Hedley, 1915) |
| | | Australium kesteveni | (Iredale, 1924) |
| | | Astralium tentoriforme | (Jonas, 1845) |
| | | Ninella torquata | (Gmelin, 1791) |
| | | Phasianella ventricosa | (Swainson, 1822) |
| | | Subnivalia undulata | (Lightfoot, 1786) |
| Tricolia rosea | | (Angas, 1867) | |
| Trochidae | Tricolia variabilis | (Pease, 1861) | |
| | Turbo imperialis | (Gmelin, 1791) | |
| | Astele scitulum | (A. Adams, 1855) | |
| | Austrocochlea concamerata | (Wood, 1828) | |
| | Austrocochlea constricta | (Lamarck, 1822) | |
| | Bankivia fasciata | (Menke, 1850) | |
| | Cantharidella picturata | (A. Adams and Angas, 1864) | |
| | Clanculus brunneus | A. Adams, 1853 | |
| | Clanculus clangulus | (Wood, 1828) | |
| | Clanculus floridus | (Philippi, 1848) | |
| | Clanculus plebejus | (Philippi, 1851) | |
| | Clanculus undatoides | Tenison-Woods, 1879 | |
| | Ethminolia probabilis | Iredale, 1924 | |
| | Eucheleus aspersus | (Philippi, 1846) | |
| Eurytrochus strangei | (A. Adams, 1853) | | |
| Fossarina patula | A. Adams and Angas, 1863 | | |
| Genia impertusa | (Burrows, 1815) | | |

	<i>Granata imbricata</i>	(Lamarck, 1822)
	<i>Leiopyrga lineolaris</i>	(Gould, 1861)
	<i>Minolops pulchemima pulchemima</i>	(Angas, 1869)
	<i>Notogibbula bicarinata</i>	(A. Adams, 1854)
	<i>Odontotrochus indistinctus</i>	(Wood, 1828)
	<i>Phasianotrochus eximus</i>	(Perry, 1811)
	<i>Talopena gloriola</i>	Iredale, 1929
Skeneidae	<i>Cirsonella weldii</i>	(Tenison Woods, 1877)
	<i>Teinosfoma solida</i>	(Laseron, 1954)
Litiopidae	<i>Alaba opiniosa</i>	(Iredale, 1936)
	<i>Alaba monile</i>	(A. Adams, 1862)
	<i>Alaba translucida</i>	(Hedley, 1906)
	<i>Alaba monile</i>	(A. Adams 1862)
Cerithidae	<i>Alaba translucida</i>	(Hedley, 1906)
	<i>Bitium granarium</i>	(Kiener, 1842)
	<i>Velacumantis australis</i>	Quoy & Gaimard, 1834
Batillariidae	<i>Pyrazus ebeninus</i>	(Bruguere, 1792)
	<i>Velacumantis australis</i>	Quoy & Gaimard, 1834
Planaxidae	<i>hinea brasiliana</i>	(Lamarck, 1822)
Turritellidae	<i>Gazameda gunnii</i>	(Reeve, 1849)
	<i>Gazameda tasmanica</i>	(Reeve, 1849)
Siliquariidae	<i>Pyxipoma weldii</i>	Tenison-Woods, 1875
Littorinidae	<i>Bembicium nanum</i>	(Lamarck, 1822)
	<i>Littoraria filosa</i>	(Sowerby, 1832)
	<i>Littoraria luteola</i>	Quoy & Gaimard, 1834
	<i>Littoraria philippiana</i>	Reeve, 1857
	<i>Nodilittorina acutispira</i>	Smith, 1892
	<i>Nodilittorina pyramidalis</i>	Quoy & Gaimard, 1833
	<i>Nodilittorina unifasciata</i>	Gray, 1826
Rissoidae	<i>Alvania (Alvania) eminens</i>	(Laseron, 1950)
	<i>Alvania (Alvania) novarensis</i>	(Frauenfeld, 1867)
	<i>Merelina gracilis</i>	(Angus, 1877)
	<i>Rissoina angasi</i>	Pease, 1872
	<i>Rissoina crassa</i>	Angas, 1871
	<i>Rissoina fasciata</i>	(A. Adams, 1833)
Vitrinellidae	<i>Callomphala eucida</i>	Angas, 1864
Caecidae	<i>Caecum amputatum</i>	Hedley, 1893
Struthiolariidae	<i>Tylospira scutulata</i>	(Leach, 1814)
Hipponicidae	<i>Antisabia foliacea</i>	(Quoy & Gaimard, 1834)
Calyptraeidae	<i>Clypeola hedleyi</i>	(Smith, 1915)
	<i>Crepidula aculeata</i>	(Gmelin, 1795)
	<i>Sigapatella calyptraeformis</i>	(Lamarck, 1822)
Vermetidae	<i>Serpulorbis siphon</i>	(Lamarck, 1818)
Cypraeidae	<i>Cypraea vitellus</i>	L. 1758
Triviidae	<i>Trivia merces</i>	Iredale, 1924
	<i>Proterato lachryma</i>	(Sowerby, 1832)
Naticidae	<i>Eunaticina linneana</i>	(Recluz, 1843)
	<i>Polinices conicus</i>	(Lamarck, 1822)
	<i>Polinices didyma</i>	(Roding, 1798)
Cassidae	<i>Phalium labiatum</i>	(Perry, 1811)
	<i>Phalium pyrum forma spectabile</i>	(Iredale, 1929)
Ranellidae	<i>Charonia lampas rubecunda</i>	(Perry, 1811)
	<i>Cabestana spengleri</i>	Perry, 1811
	<i>Cymatium exaratum</i>	(Reeve, 1844)
	<i>Cymatium pathenopum</i>	(von Salis, 1793)
	<i>Sassia parkinsonia</i>	(Perry, 1811)
	<i>Ranella australasia</i>	(Perry, 1811)
Triphoridae	<i>Aclophoropsis macklosa</i>	Hedley, 1903
Opitoniidae	<i>Opalia australis</i>	Lamarck, 1822
	<i>Graniscala ballinensis</i>	Smith, 1891
	<i>Epitonium jukesianum</i>	Forbes, 1852
	<i>Epitonium perplexum</i>	Pease, 1860
	<i>Epitonium tenellum</i>	Hutton 1885
Janthinidae	<i>Janthina janthina</i>	(Linnaeus, 1758)
Muricidae	<i>Agnewia tritoniformis</i>	Blainville, 1832
	<i>Bedeve hanleyi</i>	(Angas, 1867)
	<i>Chicoreus denudatus</i>	(Perry, 1811)
	<i>Dicathais orbita</i>	(Gmelin, 1791)
	<i>Lepsiella reticulata</i>	Blainville, 1832
	<i>Morula marginalba</i>	(Blainville, 1832)
	<i>Phyllocoma speciosa</i>	Angas, 1871
	<i>Prototyphis angasi</i>	(Crosse, 1863)
Buccinidae	<i>Cominella eburna</i>	Fischer, 1864
	<i>Engina australis</i>	Reeve, 1872
	<i>Nassarius (Pilicircularia) burchardi</i>	(Dunker in Philippi, 1849)
	<i>Nassarius jonasii</i>	(Dunker, 1846)
	<i>Nassarius nigellus</i>	Reeve, 1854
	<i>Nassarius particeps</i>	(Hedley, 1915)

	<i>Nassarius pauperus</i>	Gould, 1850
Collumbellidae	<i>Aesopus pleurosculcatus</i>	Reeve, 1859
	<i>Dentimitrella lincolnsis</i>	Reeve, 1859
	<i>Dentimitrella semiconvexa</i>	Lamarck, 1822
	<i>Mitrella tayloriana</i>	Reeve, 1859
	<i>Parviterebra brazieri</i>	Angas, 1875
	<i>Parviterebra trilineata</i>	A. Adams & Angas, 1863
	<i>Pseudamycla dermestoida</i>	Lamarck, 1822
	<i>Zella beddomei</i>	Petterd, 1884
Volutidae	<i>Amoria zebra</i>	(Leach, 1814)
	<i>Cymbiola magnifica</i>	(Gebauer, 1802)
Olividae	<i>Alocospira marginata</i>	(Sowerby, 1830)
	<i>Alocospira oblonga</i>	(Sowerby, 1830)
Olivellidae	<i>Belloliva triticea</i>	(Duclos, 1835)
	<i>Cupidoliva nympha</i>	(A. Adams and Angas, 1864)
	<i>Olivella leucozona</i>	A. Adams and Angas, 1864
Pseudolividae	<i>Zemira australis</i>	Sowerby, 18
Marginellidae	<i>Austroginella muscaria</i>	(Lamarck, 1822)
	<i>Cysticus angasi</i>	(Crosse, 1870)
	<i>Gibberula subbulbosa</i>	(Tate, 1878)
	<i>Granulina nympha</i>	(Henn & Brazier, 1894)
	<i>Haloginella mustellina</i>	(Angas, 1871)
	<i>Mesoginella infelix</i>	(Jousseume, 1875)
	<i>Mesoginella sinuata</i>	(Laseron, 1948)
	<i>Mesoginella turbinata</i>	(Sowerby, 1846)
	<i>Ovaginella ovulum</i>	(Sowerby, 1846)
Mitridae	<i>Mitra Badia</i>	Reeve, 1845
	<i>Mitra carbonaria</i>	Swainson, 1822
	<i>Mitra cookii</i>	Sowerby, 1874
	<i>Mitra glabra</i>	Swainson, 1822
	<i>Mitra solida</i>	Verco, 1896
Cancellariidae	<i>Sydaphera undulata</i>	Sowerby, 1848
Turridae	<i>Austrodrillia angasi</i>	(Crosse, 1863)
	<i>Epideira hedleyi</i>	(Iredale, 1931)
	<i>Paradrillia coxi</i>	Angas 1867
	<i>Paradrillia metcalfei</i>	Angas, 1867
Conidae	<i>Conus anemone</i>	Lamarck, 1870
	<i>Conus papilliferus</i>	Sowerby, 1834
	<i>Etrema alliterata</i>	Hedley, 1915
Architectonicidae	<i>Adelphotectonica reevei</i>	(Hanley, 1862)
	<i>Phillippia lutea</i>	(Lamarck, 1822)
	<i>Psilaxis oxytropis</i>	(A. Adams, 1855)
Acteonidae	<i>Pupa fumata</i>	(Reeve, 1865)
	<i>Pupa nivea</i>	(Angas, 1871)
Ringiculidae	<i>Ringicula doliaris</i>	Gould, 1850
Bullinidae	<i>Bullinula lineata</i>	(Gray, 1825)
Scaphandridae	<i>Cylichna arachis</i>	(Quoy & Gaimard, 1833)
Amathinidae	<i>Amathina violacea</i>	(Angas, 1867)
Philinidae	<i>Philine angasi</i>	(Crosse & Fisher, 1865)
Bullidae	<i>Bulla angasi</i>	(Pilsbry, 1893)
	<i>Bulla botanica</i>	Hedley, 1918
Haminoeidae	<i>Haminoea tenera</i>	A. Adams, 1850
Retusidae	<i>Cylichnina iredaleana</i>	(Hedley, 1915)
	<i>Volvulella rostrata</i>	(A. Adams, 1850)
Umbraculidae	<i>Umbraculum umbraculum</i>	(Lightfoot, 1786)
	<i>Marinula xanthostoma</i>	H. & A. Adams, 1854
Ellobiidae	<i>Orphicardeus ornatus</i>	(Ferussac, 1821)
	<i>Ophicardelus quoyi</i>	(H. & A. Adams, 1855)
Trimusculidae	<i>Gadinalea nivea</i>	Hutton, 1883
Siphonariidae	<i>Siphonaria deutilata</i>	Quoy & Gaimard, 1833
	<i>Siphonaria funiculata</i>	Reeve, 1856
	<i>Siphonaria nutata</i>	(Hedley, 1908)
	<i>Siphonaria zelandica</i>	Quoy & Gaimard, 1833
Class Bivalvia		
Arcidae	<i>Anadara trapezia</i>	(Deshayes, 1840)
	<i>Barbartia pistachia</i>	(Lamarck, 1819)
Glycymeridae	<i>Glycymeris grayana</i>	(Dunker, 1857)
Mytilidae	<i>Modiolus galloprovincialis</i>	Lamarck, 1819
	<i>Trichomya hirsuita</i>	(Lamarck, 1819)
Mimidae	<i>Lima nimbifer</i>	Iredale, 1924
	<i>Limatula strangei</i>	(Sowerby, 1872)
Ostreidae	<i>Saxostrea glomerata</i>	Gould, 1850
	<i>Ostrea angasi</i>	Sowerby, 1871
Pectinidae	<i>Chlamys aktmos</i>	(Pettard, 1886)
	<i>Mimachlamys asperrim</i>	(Lamarck, 1819)
	<i>mesoepulum fenestratum</i>	(Hedley, 1901)
	<i>Pecten fumatus</i>	Reeve, 1852

	<i>Scaeoclamys livida</i>	(Lamarck, 1819)
Anomiidae	<i>Anomia descripta</i>	Iredale, 1936
Lucinidae	<i>Numella adamsi</i>	Angas, 1867
	<i>Codakia rugifera</i>	(Reeve, 1835)
Diplodontidae	<i>Numella adamsi</i>	Angas, 1867
Lasaeidae	<i>Lasaea australis</i>	(Lamarck, 1818)
Carditidae	<i>Cardita excavata</i>	Deshayes, 1854
	<i>Venericardia amabilis</i>	Deshayes, 1854
	<i>Venericardia bimaculata</i>	Deshayes, 1854
Cardiidae	<i>Fulvia tenuicostata</i>	(Lamarck, 1819)
Mactridae	<i>Lutraria rhynchaena</i>	Jones, 1844
	<i>Mactra antecedens</i>	Iredale, 1930
	<i>Mactra jackonensis</i>	Smith, 1885
	<i>Mactra pusilla</i>	A. Adams, 1855
Mesodesmatidae	<i>Anapella cycladea</i>	(Lamarck, 1818)
	<i>Paphies elongata</i>	Reeve, 1854
Solenidae	<i>Solen vaginoides</i>	Lamarck, 1818
Donacidae	<i>Donax deltoides</i>	Lamarck, 1818
	<i>Donax brazieri</i>	Smith, 1892
Veneridae	<i>Bassina (Callanaitis) disjecta</i>	(Perry, 1811)
	<i>Callista disrupta</i>	(Sowerby, 1853)
	<i>Circe (Circe) scripta</i>	(Linnaeus, 1758)
	<i>Irus crebrelamellatus</i>	(Tate, 1887)
	<i>Irus crenatus</i>	(Lamarck, 1818)
	<i>Tawera lagopus</i>	(Lamarck, 1818)
	<i>Timoclea cardiodes</i>	(Lamarck, 1818)
	<i>Venerupis anomala</i>	(Lamarck, 1818)
Hiatellidae	<i>Hiatella australia</i>	(Lamarck, 1818)
Pholadidae	<i>Pholas australasiae</i>	Sowerby, 1849
Laternulidae	<i>Laternula creccina</i>	(Reeve, 1860)
Myochamidae	<i>Myadora pandoriformis</i>	(Stutchbury, 1830)
	<i>Myadora brevis</i>	(Sowerby, 1829)
Pinnidae	<i>Atrina tasmanica</i>	(Tennison Woods, 1876)
Cleidothaeridae	<i>Cleidothaerus albidus</i>	(Lamarck, 1819)
Spondylidae	<i>Spondylus tenellus</i>	(Reeve, 1860)
Class Scaphlopoda		
Dentaliidae	<i>Cadulus simillimus</i>	Watson, 1879
Class Cephalopoda		
Spirulidae	<i>Spirula spirula</i>	L., 1758

Conclusion

1. Whilst a fair number of mollusc fauna were found to represent the two major Classes, there are still a number of species that remain yet to be identified. This problem arose particularly in the microscopic area involving families such as Triphoridae, Rissoidae, Pyramidellidae, Turridae and others.
2. In 1997 and 1998 at certain periods through the year numbers of species of Bivalves were washed upon the beach. Other species were observed amongst the heavy seaweed. Whilst the periods of observation were somewhat limited, it can be said that there has been a decrease in the number of species washed up on the beach. In more recent times it appears that the mollusc fauna has become more concentrated towards the sandy/mud flat area adjoining Callala Creek.
3. The above lists of Gastropods and Bivalves are not by any means exhaustive, more work needs to be done particularly in the identification of species under 10mm.

A man decided to go on a safari in Africa. He took his pet dog along for company. One day the dog starts chasing butterflies and before long the dog discovers that he is lost. So, wandering about he notices a leopard heading rapidly in his direction with the obvious intention of having lunch. The dog thinks, "Ok no, I'm in for it now." Then he noticed some bones on the ground close by, and immediately settles down to chew on the bones with his back to the approaching cat.

Just as the leopard is about to leap, the dog exclaims loudly, "Wow, that was one delicious leopard. I wonder if there are any more around here?" Hearing this the leopard halts his attack in mid stride, as a look of terror comes over him, and slinks away into the trees. "Whew", says the leopard. "That was close. That dog nearly had me."

Meanwhile, a monkey who had been watching the whole scene from a nearby tree, figures he can put this knowledge to good use and trade it for protection from the leopard. So, off he goes. But the dog saw him heading after the leopard with great speed, and figured that something must be up. The monkey soon catches up with the leopard, spills the beans about the dog's ruse and strikes a deal for himself with the leopard. The leopard is furious at being made a fool of and says, "Here monkey, hop on my back and see what's going to happen to that conniving canine."

Now the dog sees the leopard coming with the monkey on his back, and thinks, "Oh no, what am I going to do now?" But instead of running, the dog sits down with his back to his attackers pretending he hasn't seen them yet. And just when they get close enough to hear, the dog says, "Where's that monkey? I sent him off half an hour ago to get me another leopard, and he's still not back!!"

Cypraeidae of Little Bay; Update, May 2001

By Chris and Karen Barnes

Looking through a lever arch folder containing past "Shellers", I noticed it had been over a year since Karen and I wrote the article on Little Bay cowries. In that time I have observed and/or collected several species either not previously found alive, or recorded at all from this location. I thought it was about time we did so. I guess in chronological order the first addition to our list of Little Bay



Figure 1 Southern Headland Little Bay NSW (rocky reef).

Cypraeidae was a specimen of *Cypraea poraria* Linnaeus, 1758. The shell was collected beneath a large rock at low tide on the 04/03/2000. The day was dull, overcast and stormy and the seas had been quite rough. The first stone I placed on its side was quite large and had an almost black cowry attached to its base. Initially I thought it was a reasonably common specimen of *Cypraea caputserpentis* Linnaeus 1758 but when I picked it up and investigated further, I found a purple base and bright reddish mantle with many fine papillae being withdrawn into the shell. Interestingly, its 29mm length is at the very large end of the scale for this species, yet apparently not unusual for a number of species towards the southern end of their range in temperate waters. While discussing the shells' size with Des Beechey, he suggested parasitic worms could possibly have eaten the testes causing the shell to grow larger as occurs with castrated mammals such as steers. The aforementioned shell made an appearance at the 3rd National Shell Show, Adelaide. At the end of the show whilst packing up and taking photographs, Hugh Morrison noticed the specimen and advised me it would fade with time and of course he was absolutely right, it has faded markedly over the last year. Below are dorsum and base photos of the shell on the day it was collected, plus recent images showing how its depth of colour has lightened (faded) over the past year. These changes have occurred even though the shell has been stored in a dark place, away from any source of light whatsoever.



Figure 2/3 *C. poraria* live, then at 12 months

Figure 4/5 *C. poraria* live, then at 12 months

The second addition to our list is, *Cypraea chinensis* Gmelin, 1791. The specimen was found in the early afternoon on the 27/09/2000, a clear and bright sunny day, with an average low tide for collecting. It was found wandering in three hundred millimetres of water (one foot for the elderly) at the edge of a large boulder. The animal, a brilliant vermilion (scarlet) colour with mantle fully extended, was moving towards a sponge of a similar shade, or maybe a shade or two darker. The animal's mantle was decorated with wattle yellow coloured papillae, of a medium density throughout the mantle. When the mantle was withdrawn into the shell, there were three dark embryonal bands to be viewed through the dorsal netted pattern. The centre band being the largest and most visible, the yellow/tan reticulations forming clear lacunae, with a see through effect, via which the interior shell base colour of cream/blue could be seen. The shell, at forty-eight millimetres was the largest *C. chinensis* we had ever seen (and the only live one). Its base had a glaze of violet/lavender on the columellar side with a central cream coloured patch, and many violet spots of varying size, moving closer to the margin. The outer lip had an orange/cream glaze, though the spaces (interstices) between the dentation ranged from orange to red/black. The columellar teeth were shorter and finer than the outer lips, which extended more than half way to the margin. Both margins were heavily calloused past two thirds of the way to the top, and cream/orange in colour. Both calloused margins were also very busy, overlaid with numerous varying sized violet spots. The anterior end callous was solid violet in colour. The posterior end callous was spotted with violet, and the spire appeared to be slightly depressed (umbilicate), though the callous seems to fill in and cover this in most other specimens I've seen.

In 1938 Schilder & Schilder named a sub species of *C. chinensis* they called "*sydneyensis*", with its type locality as Sydney Harbour. The characteristics were a more ovate shell than usual, less numerous but very coarse labial and columella dentation. Today authors consider "*sydneyensis*" a synonym of *C. chinensis* Myself, being born and residing in Sydney all my life, and very interested in the local marine fauna, find it all fascinating, and consider the "home town" name a very interesting piece of natural history.



Figure 6 *C. chinensis* live



Figure 7 *chinensis* today



Figure 8 *C. chinensis* live



Figure 9 *C. chinensis*, lateral callous today

The third addition to the list is *Cypraea kieneri* Hidalgo, 1906. Found recently, on the 08/04/2001. Located beneath a small stone, at the low water mark, were a pair of cowries. The underside of the stone was covered with a patterned growth of what I believe was a sponge. The beige/cream coloured sponge was like a spider web except much thicker, radiating its reticulate form to cover the stones base. The cowries mantles were of an identical colour to the sponge, except for their mustard/orange tentacles and dark eye stalks, white filaments flaring from its stubby papillae and very tiny black specks dispersed throughout the mantles surface (only noticed when viewed via a dissecting microscope). The well defined blue/grey zones of dorsal patterning could be seen through the fully extended translucent mantles. One shell measured 16mm and the other 14mm, the base and sides are white. Both sides of each terminal end are blotched with very dark brown/black

The larger shell was a young adult with less developed dentation and had very few red/brown spots on the dorsum. The smaller of the two shells had dense red/brown spotting all over the dorsum and slightly darker and larger spotting laterally at each margin, it was certainly the more mature specimen. With this shells' quite well formed dentation in particular indicating a fully mature specimen. The three blue zones on both shells appear to have a red/brown outline/halo, this seems more obvious on the less mature shell, and I believe this is caused by layering of the dorsal pattern during growth/development.

One interesting observation was of the dentation viewed through the microscope. The central columella denticle was the finest, with denticles gradually increasing in size/thickness moving towards either extremity from the mid denticle. The last five or six anteriorly do not extend across the base as the posterior columella dentation does.

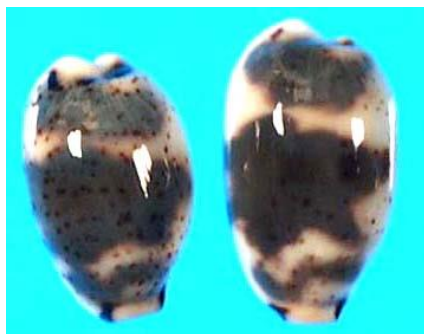


Figure 10 *C. kieneri* 2x



Figure 11 *C. kieneri* base of smaller specimen

The list as such stops growing at this point, though at least two species that were not previously observed alive, now have been. Which may not be as interesting as new additions, but it does alter their status in the table, which will follow.

Cypraea xanthodon Sowerby, 1822, previously only a couple of very dead specimens had been collected at this location. On the 13/10/2000 a juvenile was observed but at this stage we were unsure as to what species it was. A month later on the

11/11/2000 the same shell was observed beneath the same rock yet at that point it was very clear which species this cowry belonged to.

Our sub adult example of *C. xanthodon* was now twenty-five millimetres in length, with a velvety grey/green mantle and orange/amber papillae. Both posterior and anterior ends were pink/rose in colour and the immature dentation was a honey/gold in colour. Margins were glazed with pink/rose also, though deep brown spotting was beginning to form. Unfortunately we did not take the camera on this visit and have not rediscovered this shell since its release.

Cypraea gracilis Gaskoin, 1849, this species has been collected at this site previously, though not alive. The photographs below are of a live collected specimen found beneath a rock on the tide mark at dusk on the 17/12/2000. The animal was a translucent orange in colour, though I have seen reddish mantles for this species in various authors' books. I guess this demonstrates variability of form and environmental impact eg- food and habitat.



Figure 12 *C. gracilis* base.



Figure 13 *C. gracilis* dorsum

As a footnote to the above article, I have collected an additional five species of Cypraeidae from in and around Sydney.

Cypraea hartsmithi (Schilder 1967) which is apparently a synonym of *Cypraea comptoni* Gray 1847.

Cypraea helvola Linnaeus, 1758, I have not yet collected this species live in Sydney, but have a few beached specimens.

Cypraea subviridis Reeve 1835 Recently I collected a fine, very dark fresh dead example of this species. Just around the corner from Little Bay. The specimen has a large dark dorsal blotch and bands plus pink/lilac terminal ends and depressed spire.

Cypraea minoridens Melvill, 1901, I have a number of specimens, though the more I look at them the less sure I am that they are not *C. fimbriata*.

Cypraea walkeri Sowerby, 1832. Over the years I have collected about half a dozen specimens. A fellow Sydney collector took a couple into the Museum some time ago and they were identified as sub fossil *C. walkeri*.

At the February 2000 meeting of the NSW Branch of the MSA, I gave a presentation on Little Bay Cypraeidae. David Tarrant (from Coffs Harbour) was in Sydney, and attended the meeting. David had previously spent a great deal of time collecting in Sydney, so he was able to present me with a list of thirty-four *Cypraea* species he'd collected. Through discussions with Ashley Miskelly and Ernie Uhle, both keen Sydney cowry collectors with Sydney species numbers in the mid thirties, I believe it is conceivable a total of up to forty species could possibly be found in Sydney. I consider shell collecting is like golf, the more you practice the luckier you get. I realise that breeding populations probably do not exist, yet I'm sure we get a bigger number of northern visitors due to the prevailing coastal current than some people are prepared to believe.

The following table contains the *Cypraeidae* species found over the last 30 months during visits to Little Bay, Sydney, NSW.

Legend :- A=Alive, D= Dead, FD=Fresh Dead, J=Juvenile,

Number	Species	Status	Occurrence	Size
1	<i>Cypraea annulus</i>	A	seasonally common	29mm
2	<i>Cypraea arabica</i>	A	seasonally uncommon	55mm
3	<i>Cypraea asellus</i>	A	uncommon	21mm
4	<i>Cypraea caputserpentis</i>	A	common	43mm
5	<i>Cypraea carneola</i>	FD	uncommon	71mm
6	<i>Cypraea caurica</i>	A	uncommon	45mm
7	<i>Cypraea cernica</i>	FD	rare	20mm
8	<i>Cypraea clandestina</i>	A	common	19mm

9	<i>Cypraea erosa</i>	FD	seasonally uncommon	41mm
10	<i>Cypraea erronea</i>	A	common	35mm
11	<i>Cypraea felina</i>	A	uncommon	22mm
12	<i>Cypraea fimbriata</i>	A	uncommon	12mm
13	<i>Cypraea flaveola</i>	A	moderately common	22mm
14	<i>Cypraea gracilis</i>	A	uncommon	18mm
15	<i>Cypraea humphreysii</i>	A/J	rare	13mm
16	<i>Cypraea lynx</i>	A/J	rare	15mm
17	<i>Cypraea moneta</i>	A	seasonally common	29mm
18	<i>Cypraea teres</i>	A	uncommon	35mm
19	<i>Cypraea vitellus</i>	A	common	55mm
20	<i>Cypraea xanthodon</i>	A/J	uncommon	26mm
21	<i>Cypraea ziczac</i>	FD	rare	21mm
22	<i>Cypraea poraria</i>	A	rare	29mm
23	<i>Cypraea chinensis</i>	A	rare	48mm
24	<i>Cypraea kieneri</i>	A	rare	16mm

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Sydney Harbour's hidden treasures

From news.com.au 21/5/01

By SIMON BENSON
Environment reporter

BIZARRE tropical fish, sharks, sea spiders, prehistoric prawns and sea horses. These are just some of the creatures that have been found to be lurking beneath the waters of Sydney Harbour.

A study has now revealed that the 40m-deep waterway has one of the most diverse marine environments of any harbour in the world.

Exclusive pictures taken by underwater photographer Arkos Lumnitzer reveal the contrast between what seems like a marine desert from the surface and what actually lies beneath.

About 600 species, including the rare weedy sea dragon and a previously unknown species of pipehorse, have now been described by marine biologists at the Australian Museum.

Added to this is an estimated 2000 marine invertebrates, including prawns from the Jurassic Age, sea spiders the size of a human hand and sea slugs. An eel which burrows into the sand -- which could be new to science -- has also been discovered.

The last complete survey of Sydney Harbour was conducted in the 1970s by Australian Museum ichthyologist John Paxton who estimated about 500 fish species.

More recently, researchers have added at least another 100 species to that list -- many of which have come as a complete scientific surprise.

"Most people don't have a clue about what's in the harbour," said museum marine biologist Brooke Carson-Ewart. "We were even surprised by some of the things we found. We now believe that Sydney has the most diverse fish fauna of any harbour in the world."

Some of the fish species that have bewildered biologists include the indian red fish, pineapple fish, scorpion fish,

ghost pipe fish, sea dragons and the discovery of the bizarre angler fish.

The discoveries have prompted the launch of a major exhibition of Sydney Harbour and its marine diversity to be held at the Australian Museum in July.

Ms Carson-Ewart claimed five different marine environments had been identified in the harbour -- rocky reef shelves, mangroves, intertidal zones, kelp beds and sea grass.

While most of the diversity of species are concentrated around Manly, eastern suburbs and the heads, Parramatta

River also provided habitat for fish breeding.

This, combined with the fact that Sydney Harbour was a very deep port and was on the border of tropical and temperate marine climates, had provided the perfect marine ecosystem.

Minutes 28/04/2001

The meeting was opened by P. Jansen at 2:03pm.

Field Trip Reports Michael Keats reported on the recent field trip to Hawks Nest. Michael mentioned that conditions were overcast as he set out, but the weather had turned around to be fine on arrival. Yacaaba Head to the south was to produce some quality shell grit and larger specimens wedged between rocks, but these were quite eroded, eg- *Amoria undulata* (Lamarck, 1804), *Cymbiolista hunteri* Iredale, 1931, *Cymbiola magnifica* (Gebauer, 1802).

Steve Dean reported investigating the Port Stephens side of the headland, finding some live species though not many, as the rocky environment smashed up most shells with the wave action. Ron Moylan reported that when he visited Hawks Nest the previous week there were large schools of mullet running. M. Keats also reported on a visit to Huskisson, where he was able to collect some fine shell grit. Michael also mentioned that he'd enjoyed the Dolphin Boat cruise on Jervis Bay to Point Perpendicular (the northern headland at the entrance to Jervis Bay).

Ashley Miskelly reported on another visit to Bottle and Glass Rocks in Sydney Harbour. Among Ashley's finds was a specimen of *Maoricolpus roseus* (Quoy & Gaimard, 1834) a species from New Zealand. Other interesting finds included :-

Haliotis brazieri Angas, 1859, *Haliotis hargravesi* Cox, 1869, *Cypraea subviridis* Reeve, 1835

Cypraea xanthodon Sowerby, 1822, *Cypraea gracilis* Gaskoin 1849 and a large urchin and Pinna.

Patty Jansen reported on two field trips, one to Patonga & Pearl beach, though there were few shells about, Umina was found to be a good picnic spot. Trip number two was to Chinamans Beach and Balmoral headland. Patty commented that the grit was so rich, she imagined the snorkelling and diving should be incredible.

New Acquisitions M. Keats reported that an old collection of shells from Garden Island had come into his possession, a gift from an ex-dockyard worker's daughter. Apparently some of the specimens had come from the excavation of the dry dock.

New Books P. Jansen passed around the Oct-Dec 2000 issue of La Conchiglia. Patty also circulated a book by Alan G. Jarrett titled "Sea Shells of The Seychelles", the book contains six hundred species, individually photographed.

General Business Chris Barnes read a letter from David and Elizabeth Woodhouse regarding their new address and up coming trip to Western Australia. R. Moylan reported on a friends boat which had become stuck on reef in the Solomons. Ron also display the front cover of the Northern Beaches "Weekender" which contained a photograph and article about Phil Colman. It was noted that Io's obituary appeared in the Sydney Morning Herald on April 24th. Io is greatly missed by the group and her efforts still appreciated. M. Keats displayed a folder on

"Protecting Sydney Wetlands" put together by the Protecting Wetlands Steering Committee and in association with Local Councils Development Control Plan. The Proposal would force change to planning approvals. Hopefully seeing run off control implemented, eg-retention bays (\$7,000) to prevent damage to wetland environments.

Presentation Ashley Miskelly gave a slide presentation on Marine Photographic Techniques. Ashley stated that his talk would be along the lines of what not to do rather than what to do. Demonstrating the result of faux pas he had made during his experience, hopefully so as others could glean some knowledge. Points covered included exposures, backgrounds, aquariums, shadows, field and distractions, SLR's, macro lenses, stands and tripods and of course Ashley's favourite, large numbers of urchins encompassing all shapes and sizes. Ashley answered many questions from the group and no one fell asleep during lights out (just joking), it was a colourful and enlightening demonstration of technique.

Meeting closed at 3.30pm

Auction :- M. Keats assumed the role of auctioneer and Thora Whitehead's donation, a book titled "South East Asian Conus" by Lim & Wee was purchased by Steve Dean for forty dollars.

C. & K. Barnes

Secretary