

DEPARTMENT OF MINES AND ENERGY
SOUTH AUSTRALIA

REPT.BK.NO. 88/3
COASTAL QUATERNARY
STRATIGRAPHY MOLLUSCA

GEOLOGICAL SURVEY

by

N.H. LUDBROOK

JANUARY, 1988

DME.142/83
BIOSTRAT.NO.8/87

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CONTENTS

Summary	p.1
Introduction	p.1
Faunal list	p.4
Gastropoda	p.4
Scaphopoda	p.31
Bivalvia	p.31
References	p.39
Acknowledgements	p.40
Explanation of figures	<u>PLAN NO.</u>
Fig. 1 Locality plan	87-856
Fig. 2 Gastropoda	
Fig. 3 Gastropoda	
Fig. 4 Gastropoda	
Fig. 5 Bivalvia	
Fig. 6 Bivalvia	

TABLES

	<u>PLAN NO.</u>
1a	87-848
1b	87-849
2a	87-850
2b	87-851
3a	87-852
3b	87-853
4a	87-854
4b	87-855

COASTAL QUATERNARY STRATIGRAPHY

MOLLUSCA

by N.H. LUDBROOK

SUMMARY

Molluscan assemblages recovered by Vibrocore drilling in Holocene sediments of the St Kilda Formation in nine shallow bays on the far west coast of South Australia are identified and the extent to which they reflect the tidal to supratidal environments in which they were deposited is noted. Most of the approximately 200 species identified were small; many were juvenile. Most belong to living species, but some were described originally from the Dry Creek Sands.

INTRODUCTION

A vibrocore drilling programme was initiated in 1984 by A.P. Belperio of the Regional Geology Branch of the Geological Survey of South Australia to examine the stratigraphy and fauna of the St Kilda Formation in coastal bays and salt lagoons in the west of South Australia. Part of the area is included in the NUYS 1:250 000 Geological Map (Flint 1986). Continuous cores were taken to a maximum depth of 5 to 6 metres from which some 180 samples of approximately 100 gm weight were selected for their molluscan content. Some Glanville Formation material, collected from outcrops, was also included.

Drilling was carried out on the margins of shallow bays or marine lagoons which represented differing environments or differing modes of filling. It was hoped that the molluscan assemblages would exhibit variations in species content which reflected these environments. This was proven to a limited degree only. No deep water faunas, nor faunas from rocky coasts were represented. The main contrasts were between species living among seaweeds and the infaunal inhabitants of intertidal sands.

Some 170 species of gastropods , 3 species of scaphopods and 53 species of bivalves were identified, the abundance of each species being recorded in Tables 1a-4b.

Abbreviations used to indicate the relative abundance of individuals in a sample are : v= very rare(1-2 specimens), r= rare (3-5 specimens), f= frequent (6-10 specimens), c = common (11-25 specimens), a= abundant (25+ specimens) .

From west to east, the bays drilled, their distinctive features and the main elements of their molluscan faunas are:

Yalata Swamp(Illcumba 5135 RS 7- 16) : Gypseous coastal swamp. A single specimen of Fusinus australis recovered, probably not in situ .

Fowlers Bay (Coorabie 5334 RS 15-16, 18,21-22, 24-31,33,35,37) Restricted gypseous lagoon.

Bivalves rare, Mysella donaciformis 1-10 specimens in 5 samples; most abundant gastropod Diala lauta in 12 samples; Liloea brevis (1-5 specimens) in 8 samples.

Lake MacDonnell(Sinclair 5433 RS 11-13, Charra 5533 RS 104) Restricted gypseous marine lagoon and gypsum lake. Molluscs in core samples consist of fragments only.

Tourville Bay (Charra 5533 RS 107-120,122-132,134-137,141-147, 150-163; Thevenard 5633 RS 41-48,51-62)

Intertidal and supratidal sand banks and sand flats , mangroves, filling by growth of seagrass banks.

Bivalves fairly well distributed, but in small numbers. The most widespread is Mysella donaciformis .

The most ubiquitous and abundant gastropod is Diala lauta, with Hydrococcus brazieri ; Elachorbis tatei is almost ubiquitous, but

rarely with more than 1 to 5 examples. Others that are well distributed are Starkeyna cancellata , Lucidestea atkinsoni , Batillaria (Zeacumantus) bivaricata , Diala translucida , Eubittium lawleyanum , Chemnitzia acicularis , Retusa chrysoma and Liloea brevis .

Smoky Bay (Thevenard 5633 RS 68, 71-74, 76, 78-80, 83-89, 92-96, 100-112, 117-118, 123-128)

Intertidal sand banks and flats and tidal channel, some mangroves and seagrass banks; filling by progradation .

Bivalves, the infaunal inhabitants of the sandy intertidal zone, occur in most samples, but seldom abundantly. The most commonly occurring is Mysella donaciformis . Most samples contain gastropods, some abundantly, the dominant forms being Hydrococcus brazieri and Diala lautae with Lucidestea atkinsoni , Diala translucida , Eubittium lawleyanum and opisthobranchs in small numbers.

Venus Bay (Talia 5831 RS 37-48, 52-55, 57-59, 62.

Flood-tide delta, sandbody with intertidal and subtidal sand banks, filling in from the sea.

Bivalves were recovered from about half the samples, with Lasaea dromanaensis and Mysella donaciformis in most of them. Gastropods dominated by Hydrococcus brazieri , which is abundant and ubiquitous, Diala lautae , Eubittium lawleyanum , Retusa chrysoma and Liloea brevis .

Lake Newland Talia 5831 RS 65-69

Marginal restricted salt lagoon.

The only bivalve in any numbers is Spisula (Diaphoromactra) versicolor ; gastropods absent except for rare specimens of Coxiella sp.

Elliston Lagoon Elliston 5830 RS 28-34

Restricted salt lagoon.

Most abundant are saline lagoonal bivalves with Spisula (Diaphoromactra) in two samples; Nucula pusilla and Mysella donaciformis (fewer than 10 specimens) in three samples. Most common gastropod is Diala lauta, with rare examples of Hydrococcus brazieri, Eubittium lawleyanum, Chemnitzia acicularis and several other species.

Sheringa Lagoon Sheringa 5930 RS 45-57

Restricted salt lagoon.

No bivalves; Coxiella striata abundant in one sample, Diala lauta rare, single examples of Oliva australis and Liloea brevis.

In the faunal list which follows, the original reference and the distribution noted in the sediments intersected in the present drilling programme are given. No synonymies are included.

Species which were figured in Ludbrook (1984) are not refigured but referred to as Q.M. followed by the figure number in that volume.

Information on the nature of the sediments and drilling logs were provided by A.P. Belperio.

FAUNAL LIST

GASTROPODA

FISSURELLIDAE

Amblychilepas crucis (Beddome, 1883)

Fissurella crucis Beddome, 1883, Proc. R. Soc. Tas. for
1882:169

Elliston Lagoon .

Amblychilepas oblonga (Menke, 1843) Q.M. Figs 13e,f

Fissurella oblonga Menke , 1843, Moll. Nov. Holl.: 33
Tourville Bay .

Amblychilepas sp. juveniles

Tourville Bay

Rixa watsoni (Henn & Brazier, 1894) Fig. 2.a

Glyphis watsoni Henn & Brazier, 1894, Proc. Linn. Soc. NSW
19: 177, pl.14, fig. 15

Tourville Bay

Tugali cicatricosa A. Adams , 1851 Q.M. Fig. 13h

Tugali cicatricosa A. Adams , 1851, Proc. zool. Soc.: 89
Tourville Bay, Smoky Bay.

Clypidina (Montfortula) rugosa (Quoy & Gaimard, 1833) Q.M.Figs 131-k
57b

Emarginula rugosa Quoy & Gaimard, 1833, Voy. Astrolabe
Zool. Atlas , 1833, pl.68, figs 17-18 ; Zool. vol. 3, 1834:
331

Smoky Bay.

ACMAEIDAE

Collisella sp. nov. Fig. 2.b

cf Notoacmaea flammea, C. mixta & C. onychitis (Ponder &
Creese, 1980, p.177)

Fowlers Bay.

Asteracmea illibrata (Verco, 1906) Fig. 2.c

Helcioniscus illibrata Verco, 1906, TransR. Soc. S. Aust,
30: 205, pl.10, figs 6-14
Smoky Bay.

Notoacmea flammea (Quoy & Gaimard, 1833) Fig. 2e

Patelloidea flammea Quoy & Gaimard, 1833, Voy. Astrolabe
Zool. Atlas pl.71, figs 15 -24, vol. 3, 1834, p. 354

Tourville Bay, Smoky Bay.

Patelloidea sp. juvenile

Elliston Lagoon

LEPETELLIDAE

Cocculinella salisburyensis Ludbrook, 1956 Fig.2. f

Cocculinella salisburyensis Ludbrook, 1956, Trans R. Soc.
S. Aust. 79: 26, pl.2, fig.1

Tourville Bay.

TROCHIDAE

Herpetopoma scabriuscula (Adams & Angas, 1867) Fig. 2. g

Euchelus scabriuscula Adams & Angas, Proc. zool. Soc. for
1867: 215

Smoky Bay

Fossarina (Minopa) petterdi Crosse, 1870

Fossarina petterdi Crosse, 1870, J. de Conchyl. :303,
1871, pl.12, fig.1

Venus Bay.

Monodonta (Austrocochlea) constricta Lamarck, 1822, Q.M. Figs
16c-d, 631, Pl.1f

Monodonta constricta Lamarck, 1822, Anim. s. vert. 7:36

Tourville Bay, Smoky Bay.

Calliostoma (Fautor) legrandi (Tenison Woods, 1876) Q.M. Fig.68a

Zizyphinus legrandi Tenison Woods, 1876, Pap. Proc. R. Soc
Tas. for 1875:154

Tourville Bay, Smoky Bay.

Calliostoma (Fautor) rubiginosum (Valenciennes, 1846) Q.M. Fig. 68b

Trochus rubiginosus Valenciennes , 1846, Voy. 'Venus' pl. 4, fig. 1

Tourville Bay.

? Benthastelena sp. Fig. 2. d

Smoky Bay.

cf. Diloma (Chlorodiloma) odontis (Wood, 1828)

Trochus odontis Wood , 1828, Index Test. 2nd ed. Suppl.: 17, pl. 6, fig. 37

Fowlers Bay.

Diloma (Fractarmilla) concamerata (Wood, 1828) Q.M. Figs 16e,f; 63m,n; Pl. 1h.

Trochus concamerata Wood, 1828, Index Test. 2nd ed. Suppl.: 17 , pl. 6, fig. 35

Tourville Bay, Smoky Bay, Venus Bay, Lake Newland, Elliston Lagoon.

Diloma (Fractarmilla) rudis (Gray, 1827) Q.M. Fig. 57f

Monodonta rudis Gray , 1827, in King , Narr. Surv. coasts Aust. Appendix B Moll. II ; 480

Tourville Bay.

Thalotia conica (Gray, 1827) Q.M. Figs 16s, 63i; pl. 10f

Monodonta conica Gray, 1827, in King , Narr. Surv. coasts Austs. Appendix B Moll. II: 479

Tourville Bay, Elliston Lagoon.

Thalotia (Odontochus) chlorostoma (Menke, 1843)

Trochus chlorostomus Menke , 1843, Moll. Nov. Holl. 17

Tourville Bay.

Gibbula (Notogibbula) lehmanni (Menke, 1843)

Turbo lehmanni Menke, 1843, Moll. Nov. Holl.: 18

Fowlers Bay, Tourville Bay, Smoky Bay.

Cantharidus (Phasianotrochus) eximius (Perry, 1811) Q.M. Figs
16n, 57g; Pl. 10d

Bulimus eximius Perry, 1811, Conchology, pl.30, fig.20
Elliston Lagoon.

Cantharidus (Phasianotrochus) irisodontes (Quoy & Gaimard, 1833)
Q.M. Figs 16 o,p; 63 j,k; Pl.10e

Trochus irisodontes Quoy & Gaimard, 1833, Voy. Astrolabe,
Zool. Atlas, 1833, pl. 63, figs 7-12; Zool. vol. 3, 1834: 246
Tourville Bay.

Astele (Astelena) multigranus (Dunker, 1871).

Zizyphinus multigranus Dunker, 1871, Malak. Blatt. 18:69
Smoky Bay.

Clanculus (Isoclanculus) dunkeri (Koch, 1843) Q.M. Figs 17h-j, 68d,
Pl. 11g

Trochus (Monodonta) dunkeri Koch, 1843, in Philippi,
Abbild. und Beschreibung neuer Conchylien I: 67, pl.2, fig.1
Fowlers Bay, Tourville Bay, Smoky Bay.

Clanculus (Isoclanculus) philippi (Koch, 1843) Q.M. Figs 17k-m, 68e

Trochus philippi Koch, 1843, in Abbild. und Beschreibung
neuer Conchylien I pl. 2, fig.7
Venus Bay, Elliston Lagoon.

Clanculus (Mesoclanculus) plebeius (Philippi, 1851) Q.M. Figs
17n-p

Trochus plebeius Philippi, 1851, Zeits.fur Malak. 8:41
Fowlers Bay, Tourville Bay, Smoky Bay.

Ethminolia elveri Cotton & Godfrey , 1938

Ethminolia elveri Cotton & Godfrey , 1938, Rec. S. Aust.
Mus. 6(2): 200
Smoky Bay.

Ethminolia vitiliginea (Menke, 1843) Fig. 2.h

Trochus vitiliginea Menke, 1843, Moll. Nov. Holl. 18.

Fowlers Bay, Tourville Bay, Smoky Bay,

Venus Bay, Lake Newland, Elliston Lagoon.

TURBINIDAE

Astraea (Bellastraea) hesperus Ludbrook, 1956 Fig. 2.k

Astraea (Bellastraea) hesperus Ludbrook , 1956, Trans.R.

Soc. S. Aust. 79:23, pl.2, fig.8

Elliston Lagoon.

Argalista fugitiva (Hedley, 1911) Fig 2.J

Leptothyra fugitiva Hedley, 1911, Voy. Endeavour, Zool.I:

103, pl.18, figs 18-20

Tourville Bay, Smoky Bay.

Argalista roseopunctata (Angas, 1880) Fig. 2.i

Collonia roseopunctata Angas, 1880, Proc. zool. Soc.:417,

pl. 40, fig.8

Tourville Bay.

Munditia tasmanica (Tenison Woods, 1876) Fig. 2.l.m

Liotia tasmanica Tenison Woods, 1876, Pap. Proc. R. Soc.

Tas. for 1875: 153

Elliston Lagoon.

CYCLOSTREMATIDAE

Elachorbis tatei(Angas, 1878) Q.M. Figs. 78 c-g . Figs 2.n,o

Cyclostrema tatei Angas, 1878, Proc. zool .Soc. :862,

pl.54, fig.10

Fowlers Bay,

Tourville Bay, Smoky Bay,

Venus Bay.

Lissotesta contabulata (Tate, 1899) Figs 2.p-r

Cyclostrema contabulata Tate, 1899, Trans. R. Soc. S. Aust. 23: 222, pl.7, fig.6.

Tourville Bay, Smoky Bay, Venus Bay, Elliston Lagoon

This species may be confused with Hydrococcus brazieri.

The spire is, however, not gradate as in H. brazieri, the whorls increase more gradually and are more gently rounded in profile. The outer lip is less expanding and the inner lip is reflected; there may be a thin parietal lip and callus attached about halfway up the last whorl. The composition of the shell has not yet been determined, but the last whorl often has an unusual pattern of irregular alternating opaque and translucent radial patches.

The genus has not been studied anatomically and its location in the Cyclostrematidae is tentative.

Starkeyna cancellata (Tate, 1879) Figs 2.s,t

Ethalia cancellata Tate, 1879, Trans.R. Soc. S. Aust. 2 : 139, pl.5, figs 11a,11c

Fowlers Bay, Tourville Bay, Smoky Bay.

PHASIANELLIDAE

Phasianella australis (Gmelin, 1791) Q.M. Figs 20a, 571, 64k

Buccinum australe Gmelin, 1791, Linn.Syst.Nat. ed 13, 1: 3490

Smoky Bay.

NERITIDAE

Nerita (Melanerita) atramentosa Reeve, 1855 Q.M. Figs 18e,f; 64i,j; Pl.10

Nerita atramentosa Reeve, 1855, Conch.Icon. 9, Nerita, pl.6 fig. 25

Tourville Bay.

LITTORINIDAE

Bembicium auratum (Quoy & Gaimard, 1833) Q.M. Fig. 20c-d

Trochus auratus Quoy & Gaimard, Voy. Astrolabe, Zool.

Atlas 1833, pl.62, figs 15-19 ; Zool. Vol. 3, 1834: 276

Tourville Bay.

Bembicium melanostoma (Gmelin, 1791) Q.M. Figs 20f-h

Trochus melanostomus Gmelin, 1791. Linn. Syst. Nat. ed 13

(1): 3581

Tourville Bay, Smoky Bay, Venus Bay.

Bembicium nanum (Lamarck, 1822) Q.M. Fig. 20i

Trochus nanum Lamarck, 1822. Hist. nat. Anim. s. vert.

7: 30

Venus Bay.

Littorina (Austrolittorina) praetermissa May, 1909 Fig. 2.u

Littorina praetermissa May, 1909, Pap. Proc. R. Soc. Tas. for 1908: 57, pl.6, fig.3

Venus Bay.

Littorina (Austrolittorina) unifasciata Gray, 1827 Q.M. Figs 20j,k;6

Littorina unifasciata Gray, 1827, in King, Narr. Surv. Coasts Aust. Appendix B, Mollusca II: 383

RISSOIDAE

Laevilittorina mariae (Tenison Woods, 1876)

Rissoa mariae Tenison Woods, 1876, Pap. Proc. R. Soc. Tas. for 1875: 147

Venus Bay.

Pisinna frenchiensis (Gatliff & Gabriel, 1908) Fig. 2.v

Rissoa frenchiensis Gatliff & Gabriel, 1908, nom. nov. for

R. cyclostoma ^{Tenison} Woods, 1877 non Recluz, 1843, Proc.

R. Soc. Vict. (n.s.) 21(1): 379

Venus Bay.

Lucidestea atkinsoni (Tenison Woods, 1877) Figs 2.w

Rissoa (Cingula) atkinsoni Tenison Woods, 1877, Pap.
Proc. R.Soc. Tas. for 1876: 153

Ubiquitous: Fowlers Bay, Tourville Bay,
Smoky Bay, Venus Bay, Lake Newland, Elliston Lagoon.

Lucidestea sp. Fig. 2.x

Tourville Bay, Smoky Bay, Elliston Lagoon.

HYDROBIIDAE

Hydrobia buccinoides (Quoy & Gaimard, 1833) Fig. 2.y

Paludina buccinoides Quoy & Gaimard, 1833, Voy. Astrolabe
Zool., Atlas 1833 II, pl.58, figs 13-15; vol. III 1834: 175
Tourville Bay

The species has a wide salinity tolerance, according to
Smith & Kershaw, 1979.

RISSEOELLIDAE

Rissoella (Jeffreysiella) wilfredi (Gatliff & Gabriel, 1911) Fig.2

Jeffreysia wilfredi Gatliff & Gabriel, 1911, Proc. R. Soc.
Vict. (n.s.) 24 (1) : 188, pl.46, fig.3 (synonymy Ponder
& Yoo, 1977, Rec. Aust. Mus. 31 (4) : 159)

Tourville Bay.

Rissoella sp. Fig. 2.A

Venus Bay.

Merelina demessa (Tate & May, 1900) Fig. 2. B

Rissoa demessa Tate & May, 1900, Trans.R. Soc. S. Aust.
24 : 98, 1901, Proc. Linn. Soc. NSW 26: 391, pl.24, fig.18,
pl. 26, fig. 72

Smoky Bay.

EATONIELLIDAE

Eatoniella melanochroma (Tate, 1899) Fig. 2. C

Rissoa (Cingulina) melanochroma Tate, 1899, Trans. R.Soc.
S. Aust. 23(2) : 234 nom. nov. for Rissoa melanura Tenison
Woods , 1877 non C.B. Adams , 1850
Smoky Bay
(lost during photographing)

POMATIOPSIDAE

Coxiella striata (Reeve, 1842) Q.M. Fig. 21a

Truncatella striata Reeve, 1842, Conch. Syst. 2: 94, pl.182, fig. 94

Fowlers Bay, Tourville Bay, Elliston Lagoon, Sheringa Lagoon.

Coxiella sp.

Lake Newland, Tourville Bay.

HYDROCOCCIDAE

Hydrococcus brazieri (Tenison Woods, 1876) Figs 2.F,G

Rissoina (Setia) brazieri Tenison Woods, 1876, Pap.Proc. R. Soc. Tas. for 1875: 146

Abundant and ubiquitous Fowlers Bay, Tourville Bay, Smoky Bay, Venus Bay, Lake Newland, Elliston Lagoon.

ACICULIDAE

Acme scalarina (Cox, 1868) Q.M. Fig. 67g . Fig. 2.H

Truncatella scalarina Cox, 1868, Aust. Land Shells: 93, pl.15, fig.10

Tourville Bay, Smoky Bay, Venus Bay.

Acme vincentiana Cotton, 1942 Q.M. Fig. 67j. Fig. 2.I

Acmaea vincentiana Cotton, 1942, Trans. R. Soc. S. Aust. 66 (2): 128

Tourville Bay, Smoky Bay.

BARLEEIDAE

Anabathron (Anabathron) contabulatum Frauenfeld, 1867 Fig. 2.J

Anabathron contabulata (= contabulatum emend.) Frauenfeld, 1867, Moll. Reise Novara 2(3): 13 ; Ponder, 1983, Rec. Aust. Mus. 35: 251, figs 18E-H

Smoky Bay, Venus Bay, Elliston Lagoon.

ASSIMINEIDAE

Assiminea tasmanica Tenison Woods , 1876 Fig. 2.D

Assiminea tasmanica Tenison Woods, 1876, Pap. Proc. R. Soc. Tas. for 1875 : 79: Hedley, 1906, Proc. Linn. Soc. NSW 30: 527, pl.32, figs 27,28,29

Tourville Bay.

CINGULOPSIDAE

Eatonina (Eatonina) shirleyae Ponder & Yoo, 1980 Fig. 2.E

Eatonina (Eatonina) shirleyae Ponder & Yoo, 1980, Rec. Aust. Mus. 33(1): 25, figs 2i, 6h-j

Tourville Bay.

TURRITELLIDAE

Gazameda iredalei Finlay , 1927 Q.M. Figs 21e,64f, Pl. 8m

Gazameda iredalei Finlay, 1927, Trans.N.Z. Inst. 57 : 496

nom. nov. for Turritella clathrata Keiner, 1843 non

Deshayes, 1833

Fowlers Bay, Tourville Bay, Smoky Bay, Elliston Lagoon.

POTAMIDIDAE

Batillaria (Batillaria) australis (Quoy & Gaimard, 1833) Q.M. Figs 21c,d

Cerithium australis Quoy & Gaimard , 1833, Voy. Astrolabe Zool. Atlas, 1833, pl.55, fig.7; vol. III 1834: 131

Fowlers Bay, Tourville Bay, Smoky Bay, Elliston Lagoon.

Batillaria (Batillariella) estuarina (Tate, 1893) Q.M. Figs 21h,i; 64e; Pl. 11c

Bittium estuarinum Tate, 1893, Trans. R.Soc. S. Aust. 17: 190, pl.1, fig. 12

Fowlers Bay, Tourville Bay, Smoky Bay.

Batillaria (Zeacumantus) bivaricata (Ludbrook, 1941) Q.M. Figs 78n,

Clyneomorus bivaricatus Ludbrook, 1941, Trans. R. Soc. S.

Aust. 65(1): 89, pl.4, fig.20

Fowlers Bay, Tourville Bay, Smoky Bay.

Batillaria (Zeacumantus) diemenensis (Quoy & Gaimard, 1833)

Q.M. Figs 21f,g; 57q, 64g, 78p

Cerithium diemenense Quoy & Gaimard, Voy. Astrolabe Atlas,
1833, pl.55, figs 11-13; Vol. III 1834: 128

Ubiquitous : Fowlers Bay, Tourville Bay,
Smoky Bay, Venus Bay, Lake Newland, Elliston Lagoon.

CERITHIIDAE

Fig. 3

Bittium (Semibittium) granarium (Kiener, 1842) Q.M. 21n, 68p. /

Cerithium granarium Kiener, 1842, Spec. Gen. Icon. Coq.
viv. 5:72, pl.19, fig.5

Fowlers Bay, Tourville Bay, Smoky Bay.

Bittium (Semibittium) icarus (Bayle, 1880) Fig. 3.g

Cerithium icarus Bayle, 1880, J. de Conchyl. 28: 249
Smoky Bay.

3.a

Diala lauta A. Adams, 1862, Q.M. Figs 21k,l; 68j; 78k; Pl.11e: Fig./

Diala lauta A. Adams, 1862, Ann. Mag. nat. Hist. ser.3,
10: 298

Ubiquitous: Fowlers Bay, Tourville Bay,
Smoky Bay, Venus Bay, Lake Newland, Elliston Lagoon,
Sheringa Lagoon.

Diala lauta A. Adams, 1862. Nodulose form Fig. Fig. 3.b

Tourville Bay, Smoky Bay.

Diala monile (A. Adams, 1862) Fig. 3.c

Alaba monile A. Adams, 1862, Ann. Mag. nat. Hist. ser.3,
10: 296.

Tourville Bay, Smoky Bay, Venus Bay, Elliston Lagoon.

Diala monile (A. Adams, 1862). Nodulose form. Fig. 3.d

Tourville Bay, Smoky Bay.

Diala translucida Hedley, 1905. Fig. 3.e

Diala translucida Hedley, 1905, Proc. Linn. Soc. NSW 30:
522, pl.33, fig.35

Fowlers Bay, Tourville Bay, Smoky Bay,
Venus Bay.

Hypotrochus monachus (Crosse & Fischer, 1864) Q.M. Figs 21 p,q;
68k, 78l, pl. 11d

Cerithium monachus Crosse & Fischer, 1864, J. de Conchyl.
12: 347

Tourville Bay, Smoky Bay, Venus Bay.

Eubittium lawleyanum (Crosse, 1863) Q.M. Figs 21j, 68o, 78m;
pl.11f.

Bittium lawleyanum Crosse, J. de Conchyl. 11: 87, pl.1, fig.
Fowlers Bay, Tourville Bay, Smoky Bay, Venus Bay, Lake
Newland, Elliston Lagoon.

CERITHIOPSIDAE

Seila (Notoseila) triplanincincta Ludbrook, 1957 Q.M. Fig. 79g. Fig. 3

Seila (Notoseila) triplanincincta Ludbrook, 1957, Trans.
R. Soc. S. Aust. 80:34, pl.2, figs 13,14

TRIPHORIDAE

Monophorus angasi (Crosse & Fischer, 1865) Fig. 3.j

Triphoris angasi Crosse & Fischer, 1865, J. de Conchyl.
13: 46, pl.1, figs 12,13

Tourville Bay.

Obesula albovittata (Hedley, 1903)

Triphora albovittata Hedley, 1903, Proc. Linn. Soc. NSW
27: 699, pl.32, figs 26,27

Smoky Bay.

Triphora nivea Verco, 1909 Fig. 3.^k

Triphora tasmanica var. nivea Verco, 1909 : 291

Tourville Bay, Smoky Bay, Elliston Lagoon.

Eutriphora pseudocana Marshall Fig. 3.^l

Eutriphora pseudocana Marshall, 1983, Rec. Aust. Mus.

Suppl.2: 55, fig. 23D-g, Table 24

Tourville Bay.

EPITONIIDAE

Epitonium (Acutiscula) minora (Iredale, 1936) 3.^m

Acutiscula minima Iredale, 1936, Rec. Aust. Mus. 19 : 297,
pl.22, fig. 6

Smoky Bay.

Clathrus jukesianus (Forbes, 1852)

Scalaria jukesianum Forbes, 1852, Voy. Rattlesnake, Append.
ii: 383, pl.3, fig.7

Venus Bay.

Epitonium (Gyroscala) perplexum (Pease, 1867)

Scalaria perplexa Pease, 1867, Amer. J. Conch. 3:228

Tourville Bay.

Plastiscala invalida (Verco, 1906) 3.ⁿ

Scala invalida Verco , 1906, Trans. R. Soc. S. Aust. 30:
148, pl.4, figs 9,10

Elliston Lagoon.

EULIMIDAE

Eulima lodderae (Hedley, 1903) Fig. 3.^o

Leiostraca lodderae Hedley, 1903, Mem. Aust. Mus. 4:369,
fig. 82

Smoky Bay.

PYRAMIDELLIDAE

Cossmannica jacksonensis (Dall & Bartsch, 1906) Fig. 3. p

Pyramidella (Tiberia) pusilla jacksonensis Dall & Bartsch,
1906, Proc. U.S. Nat. Mus. 30: 325, pl. 36, fig. 8

Tourville Bay.

Agatha australis Angas, 1871. Fig. 3. q

Agatha australis Angas, 1871, Proc. zool. Soc. :15, pl. 1, fig
Tourville Bay, Smoky Bay, Venus Bay, Elliston Lagoon.

? Agatha jonesiana (Tate, 1898) Fig. 3. r

Odontostomia jonesiana Tate, 1898, Trans. R. Soc. S. Aust.
22(1):70

Odontostomia (Syrnola) jonesiana Tate, 1898, Trans. R.
Soc. S. Aust. 22(1): text fig. p. 83

Tourville Bay, Smoky Bay.

Puposyrnola tasmanica (Tenison Woods, 1877) Fig. 3. s

Styloptygma tasmanica Tenison Woods, 1877, Proc. R. Soc.
Tas. for 1876 : 151

Smoky Bay.

Syrnola elliottae Cotton & Godfrey, 1932 Fig. 3. t

Syrnola elliottae Cotton & Godfrey, 1932, S. Aust. Nat.
14(1): 23, pl. 1, fig. 7

Tourville Bay.

Pyrgiscus erubescens (Tate, 1879) Fig. 3. u

Turbonilla erubescens Tate, 1879, Trans. R. Soc. S. Aust.
2: 138, pl. 5, fig. 10

Tourville Bay, Smoky Bay, Venus Bay.

Pyrgiscus (?) fuscus (A. Adams, 1853)

Chemnitzia fusca A. Adams, 1853, Proc. zool. Soc. : 181

Tourville Bay.

Pyrgiscus cf. hedleyi Laseyron, 1951 Fig. 3. v

Pyrgiscus hedleyi Laseyron, 1951, Rec. Aust. Mus. 22 (4):

322, fig. 61

Smoky Bay.

Elodiamea cf. caelatura Laseron, 1951 Fig. 3. w

Elodiamea caelatura Laseron, 1951, Rec. Aust. Mus. 22(4):
310, fig.28

Tourville Bay.

Eulimella micra (Petterd, 1884) Fig. 3.x

Aclis micra Petterd, 1884, J. de Conchyl. IV:136

Eulimella micra : Tate & May, 1901, Proc. Linn. Soc. NSW
26: 384, pl.25, figs 43,44

Tourville Bay.

Eulimella turrita (Petterd, 1884) Fig. 3.y

Aclis turrita ; Tate & May, 1901, Proc. Linn. Soc. NSW
26: 3384, pl.25, fig.38

Smoky Bay.

Linopyrga brevis (Pritchard & Gatliff, 1900) Fig. 3.z

Turbonilla brevis Pritchard & Gatliff, 1900, Proc. R. Soc.
Vict. 13: 135, pl.21, fig.4

Tourville Bay, Smoky Bay, Venus Bay, Elliston Lagoon.

Linopyrga portseaensis (Gatliff & Gabriel, 1911) Fig. 3. A

Turbonilla portseaensis Gatliff & Gabriel, 1911, Proc. R. Soc.
Vict. 24:188, pl.46, fig.1
Smoky Bay, Venus Bay.

Chemnitzia acicularis (Adams, 1853) Fig. 4.a

Turbonilla acicularis Adams, 1853, Proc. zool. Soc.: 132

Fowlers Bay, Tourville Bay, Smoky Bay, Venus Bay, Elliston
Lagoon.

Chemnitzia scalpidens (Watson, 1886) Fig. 4.b

Odostomia (Turbonilla) scalpidens Watson, 1886, Voy.
Challenger, Zool. : 49, pl.32, fig.1

Turbonilla scalpidens (Watson, 1886) ; Hedley, 1903,
Mem. Aust. Mus. IV: 362, fig.84

Tourville Bay.

Scalenostoma subcarina Laseron, 1951 Fig. 4. c

Scalenostoma subcarina Laseron, 1951, Rec. Aust. Mus. 22(4):
308, Fig.21

Tourville Bay.

Odostomia belperioi Ludbrook sp. nov. Figs 4. g-j

Shell small, pupiform, translucent, protoconch small, smooth, heterostrophic with tip submerged. Adult whorls $3\frac{1}{2}$, only slightly convex, rapidly increasing in height, sutures with whorls adpressed, whorls slightly constricted below the suture, last whorl nearly three-quarters height of shell; shell surface with fine collabral growth striae and microscopic pitting visible under magnification. Aperture elongate-oval, outer lip thin, attached adapically at about one-third height of whorl; columellar lip with a prominent tooth at approximately the middle, below which the lip is thickened and reflected, curving roundly to the abapical margin; a thin parietal callus above the tooth, a small narrow shallow, adapical channel.

Dimensions: Holotype 5633 RS 44 (living specimen) height 2.4, diameter 1.2, height of aperture 1.3, width of aperture 0.9mm, height of last whorl 1.8mm. Paratype 5633 RS 44 (fossil) height 2.3, diameter 1.1, height of aperture 1.2, width of aperture 0.6, height of last whorl 1.7mm. Paratype 5633 RS 78 at 10cm depth.

Type locality: Tourville Bay, 5633 RS 44, living specimen with dried animal, surface sample S84 depth surface to 30cm. The sample contains both living and fossil specimens.

Formation: Le Hunte Formation

Environment: Gypseous salt marsh.

Material: Twelve primary types from the Le Hunte Formation, Tourville Bay, and one or two specimens from surface or 10 to 60 cm depth at 4 locations in Smoky Bay, St Kilda Formation.

The species is named for Dr Antonio Belperio of the Regional Geology Branch, Geological Survey of South Australia, who initiated the Coastal Quaternary Studies Project and carried out the vibrocoreing.

Tourville Bay, Smoky Bay.

Odostomia deplexa (Tate & May, 1900) Figs 4. e, f

Odontostomia deplexa Tate & May, 1900 , Trans.R. Soc. S.Aust
24:97, pl.25, fig .45

Tourville Bay, Smoky Bay.

Odostomia metcalfei Pritchard & Gatliff, 1900 Fig. 4. d

Odostomia metcalfei Pritchard & Gatliff, 1900, Proc. R. Soc. Vict. 13 (n.s.) (1):136, pl.21, fig.3

Tourville Bay, Smoky Bay, Venus Bay.

HIPPONICIDAE

Hipponix (Sabia) conicus (Schumacher) Q.M. Figs 20o-p, 57t, 64l;
Pl.5h

Amalthea conica Schumacher, 1817 , Ess. nouv. Syst. hab.
Vers Testaces : 181, pl.21, fig.4

Tourville Bay, Smoky Bay, Venus Bay, Elliston Lagoon.

Hipponix (Antisabia) erma (Cotton)

Sabia (Antisabia) erma Cotton , 1939, Proc. R. Soc. Vict.
51 (1): 171, pl.7 , fig.8

Elliston Lagoon.

Hipponix (Antisabia) foliaceus Quoy & Gaimard, 1833

Hipponix foliaceus Quoy & Gaimard, 1833, Voy. Astrolabe,
Zool. Atlas, 1833, II, pl. 72, figs 23-24: Vol. III 1834:
434

Elliston Lagoon.

TRICHOTROPIDIDAE

Icuncula torcularis (Tenison Woods, 1878) Fig. 4.k

Cingulina torcularis Tenison Woods, 1878, Proc. Linn. Soc.

NSW 2:263

Trichotropis torcularis ; Hedley, 1901, Rec. Aust. Mus.

4: 22, fig.2

Tourville Bay.

CAPULIDAE

Capulus australis (Lamarck, 1819)

Hist. nat.

Hipponix australis Lamarck, 1819, /Anim. s. vert. 6 (1): 335

Fowlers Bay, Smoky Bay.

Capulus banksi Cotton, 1939

Capulus banksi Cotton, 1939, Proc. R. Soc. Vict. 51 (1):

171, pl.7, fig.7

Smoky Bay.

Capulus violaceus Angas, 1867

Capulus violaceus Angas, 1867, Proc. zool. Soc.: 114,

pl.13, fig.23

Fowlers Bay.

NATICIDAE

Polinices (Conuber) conicus (Lamarck, 1822) Q.M. Figs 24a, 64n,
pls 8, 10c

Natica conica Lamarck, 1822, Hist. nat. anim. s. vert

6(2):198

Porter Bay.

Sigaretotrema umbilicatum (Quoy & Gaimard, 1832)

Natica umbilicata Quoy & Gaimard, 1832, Voy. Astrolabe

II (1832): 234, Atlas (1833) II, pl.66, figs 22-23

Smoky Bay.

Proxiuber microsculptum Ludbrook, 1958

Proxiuber microsculptum Ludbrook, 1948, Trans. R. Soc. S. Aust. 81: 49, pl.1, figs 15,16

Tourville Bay.

MURICIDAE

Lepsiella flindersi (Adams & Angas, 1863) Q.M. Figs 27h,i; 66a,b
Pl. 1p,q

Purpura flindersi Adams & Angas, 1863, Proc. zool. Soc.:42
Tourville Bay, Venus Bay.

Benthoxystus petterdi (Crosse, 1870) Fig. 4.1

Trophon petterdi Crosse, 1870, J. de Conchyl. 18: 303
Smoky Bay

Bedeua paivae (Crosse, 1864) Q.M. Figs 27e,f; 65d,e; Pl. 10h

Trophon paivae Crosse, 1864, J. de Conchyl. 12: 278,
pl.11, fig.7

Tourville Bay.

COLUMBELLIDAE

Mitrella acuminata (Menke, 1843)

Buccinum acuminatum Menke, 1843, Moll. Nov. Holl.:20
Smoky Bay, Tourville Bay.

Mitrella (Dentimitrella) lincolnensis (Reeve, 1859) Q.M. Figs
27g: 68t; Pl.10m

Columbella lincolnensis Reeve, 1859, Conch. Icon. 11,
pl.29, figs 184a,b

Fowlers Bay, Tourville Bay, Smoky Bay, Venus Bay.

Mitrella (Dentimitrella) semiconvexa (Lamarck, 1822)

Buccinum semiconvexum Lamarck, 1822, Hist. nat. Anim. s. vert. 7: 272

Tourville Bay, Smoky Bay, Venus Bay.

Macrozafra atkinsoni (Tenison Woods, 1876) Figs 4.m,n

Mangelia atkinsoni Tenison Woods, 1876, Pap. Proc. R. Soc. Tas. for 1875: 141

Tourville Bay, Smoky Bay.

Euplica bidentata (Menke, 1843) Q.M. Fig. 68u

Columbella bidentata Menke, 1843, Moll. Nov. Holl.:23

Glanville Formation, Fowlers Bay.

BUCCINIDAE

Cominella eburnea (Reeve, 1846) Q.M. Figs 20x,y; 57x

Buccinum eburnea Reeve, 1846, Conch. Icon. 3, pl.12, fig.93

Fowlers Bay, Tourville Bay, Venus Bay, Elliston Lagoon.

NASSARIIDAE

Niotha pauperata (Lamarck, 1822) Q.M. Figs 27n,o; 65h,i; Pl. 11i

Buccinum pauperatum Lamarck, 1822, Hist. nat. Anim. sans vert. 7:278

Tourville Bay.

Niotha pyrrhus (Menke, 1843) Q.M. Figs 27l,m; 65f,g; Pl.11h

Buccinum pyrrhus Menke, 1843, Moll. Nov. Holl. : 21, No.93

Tourville Bay, Smoky Bay, Venus Bay.

FASCIOLARIIDAE

Josepha tasmanica Tenison Woods, 1879 Q.M. Fig. 67a

Josepha tasmanica Tenison Woods, 1879, Pap. Proc. R. Soc.

Tas. for 1878:32

Fowlers Bay, Tourville Bay.

Fusinus australis (Quoy & Gaimard, 1833) Q.M. Figs 28c;66h,i

Fusus australis Quoy & Gaimard, 1833, Voy. Astrolabe,

Zool. II: 495; Atlas, pl.34, figs 9-14

Yalata Swamp.

Microcolus dunkeri (Jonas, 1846) Q.M. Figs 66f,g

Fusus dunkeri Jonas, 1846, Abhand. Naturw. ver.
Hamburg I : 129

Tourville Bay, Venus Bay.

OLIVIDAE

Oliva australis Duclos, 1835 Q.M. Fig. 28e

Oliva australis Duclos, 1835, Monog. Oliva sp. 56, pl.8,
figs 3,4

Fowlers Bay, Elliston Lagoon.

MITRIDAE

Mitra (Eumitra) glabra Swainson, 1821 Q.M. Figs 28i; 66l; Pl.1

Mitra glabra Swainson, 1821, Exotic Conchology, pl.24
Franklin Harbor.

Mitra vincentiana Verco, 1896

Mitra vincentiana Verco, 1896, Trans. R. Soc. S. Aust.
20: 223, pl.8, fig.3

Tourville Bay.

Austromitra schomburgki (Angas, 1878)

Mitra schomburgki Angas, 1878, Proc. zool. Soc.: 33,
pl.18, figs 12,13

Smoky Bay.

Proximitra pica (Reeve, 1845)

Mitra pica Reeve, 1845, Conch. Icon. 2:31, sp. 247

Tourville Bay.

VASIDAE

Vasum (Altivasum) flindersi (Verco, 1914)

Altivasum flindersi Verco, 1914, Trans. R. Soc. S. Aust.

38: 484, nom. mut. for Latirus aurantiacus Verco, 1895

non Montfort, 1810

Tourville Bay.

MARGINELLIDAE

Microginella cymbalum (Tate, 1878)

Marginella cymbalum Tate, 1878, Trans. R. Soc. S. Aust. 1:86

Smoky Bay.

TURRIDAE

Guraleus bordaensis Cotton, 1947 Fig. 4.p

Guraleus bordaensis Cotton, 1947, S. Aust. Nat. 24(3): 15,
pl.1, fig.7

Smoky Bay .

Etrema cf elegans Hedley, 1922 Fig. 4.o

Etrema elegans Hedley , 1922, Rec. Aust. Mus. 13 , No.6:
278, pl.47, fig.77

Fowlers Bay.

Paramontana modesta (Angas, 1877) Fig. 4.q

Clathurella modesta Angas, 1877, Proc. zool. Soc.: 38,
pl.4, fig.16

Tourville Bay, Smoky Bay.

Paramontana sp. Fig. 4.r

Tourville Bay.

Pseudodaphnella cf. retellaria Hedley, 1922

Pseudodaphnella retellaria Hedley, 1922, Rec. Aust. Mus.
13 (6): 351, pl.56, fig.189

Fowlers Bay.

Differs from P. retellaria in having only spiral threads
on the base and neck.

Nepotilla sp.

Tourville Bay.

Splendrillia harpularia (Desmoulins, 1842) Q.M. Fig. 67e

Pleurotoma harpularia Desmoulins, 1842, Act. Soc. Linn.

Bordeaux 12: 162, nom. nov. for Pleurotoma harpula

Keiner, 1840 non Deshayes

Tourville Bay.

CONIDAE

Conus (Floraconus) anemone Lamarck, 1810 Q.M. Figs 25a, 66o

Conus anemone Lamarck, 1810, Ann. Mus. Hist. nat. Paris
15: 272

Fowlers Bay, Smoky Bay,

TEREBRIDAE

Strioterebrum (Pervicacia) crassum (Tate, 1886)

Terebra crassa Tate, 1886, Southern Science Record n.s.
2 (1):7

Smoky Bay.

RINCICULIDAE

Ringiculadda australis (Hinds, 1844) Fig. 4.s

Ringicula australis Hinds, 1844, Proc. zool. Soc. 1844:97
Elliston Lagoon

Ringiculadda hardingi (Cotton & Godfrey, 1933) Fig. 4t

Ringicula hardingi Cotton & Godfrey, 1933, S. Aust. Nat.
14 (3) : 80, pl.1 fig.8

Tourville Bay.

SIPHONARIIDAE

Siphonaria zelandica Quoy & Gaimard, 1833 Q.M. Fig.30j,k;57a,67k

Siphonaria zelandica Quoy & Gaimard, 1833, Voy. Astrolabe
Zool. II: 344, Atlas, 1933, pl.25, figs 17,18

(= Siphonaria baconi Reeve; Jenkins, 1983)

Tourville Bay, Elliston Lagoon.

Siphonaria sp. juveniles

Fowlers Bay, Venus Bay.

Pugillaria stowae (Verco, 1906) Fig. 4. u

Siphonaria stowae Verco, 1906, Trans. R. Soc. S. Aust.
30: 223, pl.8, figs 3-8

Venus Bay, Elliston Lagoon.

ELLOBIIDAE

Plectotrema ciliata Tate, 1879 Figs 4. v,w

Plectotrema ciliata Tate, 1879, Trans. R. Soc. S. Aust. 2:
135, pl.5, figs 7a,7b

Tourville Bay, Smoky Bay.

AMPHIBOLIDAE

Salinator fragilis (Lamarck, 1822) Q.M. Figs 30 f,g

Ampullaria fragilis Lamarck, 1822, Hist. nat. Anim. s.Vert
6: 179

Tourville Bay, Smoky Bay, Venus Bay.

Salinator lawsae Ludbrook, 1978

Salinator lawsae Ludbrook, 1978, Bull. geol. Surv. W. Aust
125: 192, pl.23, figs 20-23

Tourville Bay.

Salinator solidus (von Martens, 1878) Q.M. Figs 30h,i; Pl. 11a

Ampullaria solida von Martens, 1878, Jahrb. Deutsch.
Malak. Gesell:2

Tourville Bay, Venus Bay.

OPISTHOBRANCHIA

Classification of fossil opisthobranchs can be based on the shell only, since no soft parts remain. This is regarded by workers on living specimens as unreliable, but the palaeontologist is left with no alternative. The classification used here is that which has been in common use for opisthobranch shells .

RETUSIDAE

Retusa chrysoma Burn, 1974 Fig. 4. x

Retusa chrysoma Burn, 1974 , Mem. Nat. Mus. Vict. 35:115

Fowlers Bay, Tourville Bay, Smoky Bay, Venus Bay, Elliston Lagoon.

Retusa eumicra (Crosse & Fischer, 1865) Fig. 4.y

Bulla eumicra Crosse & Fischer, 1865 , J. de Conchyl. 40:
pl.2, fig.7

Smoky Bay, Venus Bay.

Volvulella rostrata (A. Adams, 1850) Fig. 4.z

Bulla rostrata A. Adams, 1850, in Sowerby, G.B. Thes . Conch
XI(1850) Bullidae: 596, pl. 125, fig. 154

Tourville Bay, Smoky Bay.

PHILINIDAE

Philine angasi (Crosse & Fischer, 1865) Fig. 4.A

Bullaea angasi Crosse & Fischer, 1865, J. de Conchyl. 13:
38, pl.2, fig.8

Smoky Bay, Venus Bay

The species burrows just below the surface of sandy mud
(Burn, 1965) .

SCAPHANDRIDAE

Acteocina fusiformis (Adams, 1854) Fig. 4.B

Bulla fusiformis Adams, 1854 in Sowerby, G.B.jr Thes.
Conch. II : 570, pl.121, fig.37

Tourville Bay, Smoky Bay, Venus Bay, Elliston Lagoon.

Cylichna arachis (Quoy & Gaimard, 1833) Fig. 4.C

Bulla arachis Quoy & Gaimard, 1833 , Voy. Astrolabe,
Zool. II: 361, Atlas, pl.26, figs 28-30

Fowlers Bay, Tourville Bay, Smoky Bay.

Austrocylichna exigua (A. Adams, 1850) Fig. 4.D

Bulla (Atys) exigua A. Adams, 1850, Thes Conch XI: 589,
pl. 125, fig. 129

Austrocyclichna exigua (A. Adams); Burn, 1978, J. malac.
Soc. Aust. 4(2): 196, figs 1-7

Tourville Bay , Smoky Bay.

HAMINOEIDAE

Haminoea maugeansis Burn, 1965 Fig. 4.E

Haminoea maugeansis Burn, 1965, nom. nov. for Haminoea tenera Pritchard & Gatliff non Adams Rec. S. Aust. Mus. 15(1) : 330, figs 1-2

Tourville Bay

Crawls and browses on Zostera and Posidonia (Burn, 1965)

Liloea brevis (Quoy & Gaimard, 1833) Q.M. Fig. 68r . Figs 4.G,H,J

Bulla brevis Quoy & Gaimard, 1833, Voy. Astrolabe , Atlas (1833) pl.26, figs 36-37; Zool. III (1834): 358

Fowlers Bay, Smoky Bay, Venus Bay, Elliston Lagoon, Sheringa Lagoon.

Liloea hordeacea A. Adams, 1850 Fig. 4.I

Bulla (Atys) hordeacea A. Adams, 1850, Thes. Conch. XI: 590, pl.125, fig.131

Tourville Bay, Smoky Bay, Venus Bay.

Cylichnatys campanula Burn, 1978

Cylichnatys campanula Burn , 1978, J. malac. Soc. Aust. 4(2): 104, figs 11-17

Fowlers Bay, Tourville Bay, Smoky Bay, Venus Bay, Elliston Lagoon .

BULLIDAE

Bulla quoyii Gray in Dieffenbach, 1843 Q.M. Fig. 67h, pl. 10q (as B. botanica)

= Bulla botanica Hedley, 1914

Bulla quoyii Gray in Dieffenbach , 1843, Trav. N.Z. 2: 243 Fowlers Bay, Tourville Bay, Smoky Bay.

SCAPHOPODA

DENTALIIDA

Dentalium sp. juvenile

Tourville Bay.

Antalis sp. juvenile

Smoky Bay.

GADILIDAE

Cadulus (Gadila) angustior Verco, 1911Cadulus angustior Verco, 1911 , Trans. R. Soc. S. Aust.
35: 211, pl.26, figs 5a, 5b

Smoky Bay.

BIVALVIA

NUCULIDAE

Nucula pusilla Angas, 1877 Figs 5. a, bNucula pusilla Angas, 1877, Proc. zool. Soc.:177, pl.26,
fig. 26Fowlers Bay, Tourville Bay, Smoky Bay, Venus Bay, Elliston
Lagoon.

ARCIDAE

Barbatia (Acar) squamosa (Lamarck, 1819)Arca squamosa Lamarck, 1819, Ann. Mus. Hist. nat. Paris
6(1): 45

Smoky Bay.

MYTILIDAE

Brachidontes erosus (Lamarck, 1819) Q.M. Figs 37a, b; 70e, f; Pl. 3b,Mytilus erosus Lamarck, 1819, Hist. nat. anim. s. vert. 5:1

Fowlers Bay, Tourville Bay, Venus Bay.

Brachidontes (Austromytilus) rostratus (Dunker, 1856) Q.M. Figs
37c,d;70a-d

Mytilus rostratus Dunker, 1856, Proc. zool. Soc.:538
Tourville Bay, Smoky Bay.

Trichomusculus barbatus (Reeve, 1858) juveniles

Lithodomus barbatus Reeve, Conch. Icon. X(1858), pl.5 fig.27
Venus Bay.

Musculus nanus (Dunker, 1856) Fig. 5.c

Lanistena nanus Dunker, 1856, Proc. zool. Soc.: 365
Tourville Bay, Smoky Bay.

Musculus semiradiatus(Verco, 1908)Fig. 5.d

Modiolaria semiradiata Verco, 1908, Trans. R. Soc. S. Aust.
32 : 195, pl.13, figs 14,15

Tourville Bay, Smoky Bay, Venus Bay.

Xenostrobus inconstans (Dunker,1856)

VolSELLA inconstans Dunker, 1856, Proc. zool. Soc.: 363
Fowlers Bay, Tourville Bay, Smoky Bay, Venus Bay, Lake New-
land.

PTERIIDAE

Electroma georgiana (Quoy & Gaimard, 1833)

Avicula georgiana Quoy & Gaimard, 1833, Voy. Astrolabe
Zool. Atlas(1833) pl.77, figs 10,11; III(1833) : 457
All fragmentary.

Tourville Bay, Smoky Bay, Venus Bay, Elliston Lagoon.

LUCINIDAE

Anodontia (Cavatidens) perplexa (Cotton & Godfrey, 1938) Q.M.

Figs 71f-i

Cavatidens perplexa Cotton & Godfrey ,1938, Moll. S. Aust.
I: 199, fig. 208

Tourville Bay, Smoky Bay, Lake Newland.

Epicodakia tatei (Angas, 1878) Fig. 5.e,f

Lucina tatei Angas, 1878, Proc. zool. Soc.: 863, pl.54, fig.
Tourville Bay.

CHAMIDAE

Chama ruderalis Lamarck, 1819, Q.M. Figs 43e-g: 72a-d . Fig. 6.n

Chama ruderalis Lamarck, 1819, Hist. nat. anim. s. vert.
VI:96

Fowlers Bay.

Superfamily LEPTONACEA

This superfamily is in need of revision, and the classification tentatively used here is that of Chavan in the Treatise on Invertebrate Paleontology Part N Mollusca 6(2): N518-537.

ERYCINIDAE

Lasaea australis (Lamarck, 1818) Fig. 5.g

Cyclas australis Lamarck, 1818, Hist. nat. anim. s. vert.
5: 560

Elliston Lagoon.

Lasaea dromanaensis (Gatliff & Gabriel, 1912) Figs 5. n-q

Montacuta dromanaensis Gatliff & Gabriel, 1912 , Proc. R. Soc. Vict. 25 (n.s.): 167, pl.9, figs 1-4

Fowlers Bay, Tourville Bay, Smoky Bay, Venus Bay.

Myllita deshayesii d'Orbigny & Recluz, 1850 Fig. 5.j

Myllita deshayesii d'Orbigny & Recluz , 1859, J. de Conchyl.
I: 292, pl.11, figs 12,13, pl.14

Elliston Lagoon.

Melliteryx acupunctum (Hedley, 1902) Figs 5. h,i

Erycina acupunctum Hedley, 1902, Mem. Aust. Mus. 4: 321, fig.6
Tourville Bay.

Melliteryx sp. Figs 5.k-m

Tourville Bay, Venus Bay.

LEPTONIDAE

Lepton australe Angas, 1878 Fig. 5.r

Lepton australe Angas, 1878, Proc. zool. Soc.:863, pl.54,
fig.14

Smoky Bay.

Lepton trigonale Tate, 1879 Fig. 5.s

Lepton trigonale Tate, 1879, Trans. R. Soc. S. Aust.
2: 131, pl.5, fig.5

Tourville Bay.

MONTACUTIDAE

Mysella anomala Angas, 1877, juvenile

Mysella anomala Angas, 1877, Proc. zool. Soc.:176, pl.26, fig
Tourville Bay.

Mysella donaciformis Angas, 1878 Figs 5. t,u

Mysella donaciformis Angas 1878,
/Proc. zool. Soc. : 863, pl.54,
fig. 13

Ubiquitous: Fowlers Bay, Tourville Bay, Smoky Bay, Venus
Bay, Lake Newland, Elliston Lagoon.

Mysella sp.

Species with weak hinge teeth

Tourville Bay, Smoky Bay.

KELLIIDAE

Borniola lepida (Hedley, 1906) Figs 6a,b

Bornia lepida Hedley, 1906, Proc. Linn. Soc. NSW 30: 543,
pl.32, figs 22,23

Smoky Bay.

GALEOMMATIDAE

Scintilla meridionalis (Tate, 1887) - Fig. 6.c

Montacuta meridionalis Tate, 1887 , Trans. R. Soc. S. Aust.

9: 68, pl.5, fig.4

Tourville Bay, Smoky Bay.

CYAMIIDAE

Cyamiomactra mactroides (Tate & May, 1900)

Cyamium mactroides Tate & May, 1900, Trans. R. Soc. S.

Aust. 24: 102

Venus Bay.

CARDITIDAE

Cyclocardia (Vimentum) excelsior (Verco, 1908) Figs 6.d,e

Venericardia excelsior Verco, 1908 , Trans. R. Soc. S. Aust.

32: 348, pl.14, fig.9

Tourville Bay, Elliston Lagoon.

Cardita crassicosta Lamarck , 1819 Q.M. Figs 43j,k; Pl.5m,n

Cardita crassicosta Lamarck, 1819, Hist. nat. Anim. s.vert.

6:22

Venus Bay.

Cardita cf. excavata Deshayes , 1852

Cardita excavata Deshayes , 1852, Proc. zool. Soc.: 100,

pl.17, figs 103

Elliston Lagoon.

CARDIIDAE

Fulvia tenuicostata (Lamarck, 1819) Q.M. Figs 45f-h;72 e-f; Pl.7g,h Figs 6.o-q

Cardium tenuicostatum Lamarck , 1819, Hist. nat. Anim. s.

Vert. 6(1):5

Tourville Bay, Smoky Bay.

MACTRIDAE

Spisula (Diaphoromactra) versicolor (Tate, 1887) Q.M. Figs 45g-i

Figs 6

Hemimactra versicolor Tate, 1887, Trans. R. Soc. S. Aust.

9: 64, 74, pl.4, figs 12a,b

Fowlers Bay, Tourville Bay, Smoky Bay, Venus Bay, Lake Newland, Elliston Lagoon.

Spisula (Notospisula) trigonella (Lamarck, 1818) Q.M. Figs m-o, 74e-h, Pl. 11p

Mactra trigonella Lamarck, 1818, Hist. nat. Anim. s. Vert. 5: 479

Tourville Bay, Smoky Bay, Venus Bay.

MESODESMATIDAE

Anapella cycladea (Lamarck, 1818) Q.M. Figs 45j-l; 74a-d; Pl. 11n,

Crassatella cycladea Lamarck, 1818, Hist. nat. Anim. s. Vert. 5: 483

Tourville Bay, Smoky Bay.

Amesodesma angusta (Reeve, 1853) Q.M. Figs 46d,e; 58g,h; 74i-k; Pl. 9c,d,g,h

Mesodesma angusta Reeve, 1853, Conch. Icon.8: pl.1, fig.3 Smoky Bay.

Amesodesma cuneata (Lamarck, 1818) Q.M. Figs 46i-h, 58i-j, 74l, 80g,h; Pl. 9, figs a,b,e,f

Crassatella cuneata Lamarck, 1818, Hist. nat. Anim. s. Vert. 5:483

Tourville Bay, Smoky Bay, Venus Bay.

TELLINIDAE

Tellina (Macomona) deltoidalis Lamarck, 1818 Q.M. Figs 48c-e, 74n-q, 80m-o, Pl.9i

Tellina deltoidalis Lamarck, 1818, Hist. nat. Anim. s. Vert. 5: 532

Tourville Bay.

Tellina (Macomona) mariae Tenison Woods, 1876 Q.M. Figs 74r-t

Tellina mariae Tenison Woods , 1876 Pap. Proc. R. Soc. Tas.
for 1875: 162

Tourville Bay, Smoky Bay.

Tellina(Semelangulus) tenuilirata Sowerby, 1867

Tellina tenuilirata Sowerby , 1867, Conch Icon. 17, pl.39,
fig. 219

Tourville Bay.

Tellina (Pseudarcopagia) victoriae Gatliff & Gabriel, 1914 Q.M. Figs
48f,g; 81a,b . Fig. 6.17

Tellina victoriae Gatliff & Gabriel, Vict. Nat. 31: 83

Smoky Bay.

PSAMMOBIIDAE

Gari brazieri (Tate, 1886)

Psammobia brazieri Tate, 1886, Trans. R. Soc. S. Aust. 9:65

Smoky Bay, Venus Bay.

Sanguinolaria (Psammotellina) biradiata (Wood, 1815) Q.M. Figs 46i,j

Solen biradiata Wood, 1815. General Conchology: 135, pl.33,
fig.1

Tourville Bay, Smoky Bay.

Sanguinolaria (Psammotellina) donacioides (Reeve, 1857) Q.M. Figs

75i-k

Soletellina donacioides (Reeve, 1857) Conch. Icon. 10,
pl.3 sp. 11

Smoky Bay, Venus Bay.

SEMELIDAE

Abra (Syndosmya) exigua (A. Adams, 1861) Q.M. Figs 68y,z

Semele exigua A. Adams, 1861, Proc. zool. Soc. : 385

Tourville Bay.

GAIMARDIIDAE

Neogaimardia tasmanica (Beddome, 1883) Figs 6.k-m

Modiolaria tasmanica Beddome, 1883, Pap. Proc. R. Soc. Tas.
for 1882: 168; Tate & May, 1902, Proc. Linn. Soc. N.S.W.
26: 439, fig.12

Venus Bay.

PISIDIIDAE

? Sphaerium (Musculium) sp. Figs 6.i-j

This is a pisidiid species resembling Sphaerium (Musculium)
tasmanicum (Tenison Woods, 1876) as illustrated by Smith
and Kershaw (1979). The fossilised shell is solid and
microscopically sculptured with fine concentric lirae and
punctations. According to Smith & Kershaw S.(M.)tasmanicum
occurs throughout southeastern Australia in freshwater
where there is weed growth. The sample from which it was
recovered at Tourville Bay was taken at depth 25cm in
slightly calcareous mud with mangrove detritus.

VENERIDAE

Tawera gallinula (Lamarck, 1818) Q.M. Pl. 7g,h

Venus gallinula Lamarck, 1818, Hist. nat. Anim. s. Vert.
5: 592

Tourville Bay, Smoky Bay.

Tawera lagopus (Lamarck, 1818) Q.M. Figs 49o,p

Venus lagopus Lamarck, 1818, Hist. nat. Anim. s. Vert.
5: 591

Tourville Bay, Smoky Bay.

Katelysia peronii (Lamarck, 1818) Q.M. Figs 49h,i, 81e-h ; Pl.11k

Chione peronii Lamarck, 1818, Hist. nat. Anim. s. Vert.5:
606

Tourville Bay, Smoky Bay, Venus Bay.

Katelysia rhytiphora (Lamy, 1935) Q.M. Figs 49l-n; 75b,c; Pl. 7d-e
Marcia (Katelysia) rhytiphora Lamy, 1935, Bull. Mus. Natn.
Hist. nat. Paris ser. 2, 7(6): 358 (nom. nov. for Venus
corrugata Lamarck non Gmelin)

Fowlers Bay, Tourville Bay, Smoky Bay, Venus Bay.

Katelysia scalarina (Lamarck, 1818) Q.M. Figs 49j,k; 75d-f; Pl. 7f
Venus scalarina Lamarck, 1818, Hist. nat. Anim. s. Vert.
 5: 599

Tourville Bay, Smoky Bay, Venus Bay.

Venerupis iridescens Tate, 1888 Q.M. Figs 51g-i

Venerupis iridescens Tate, 1888, Trans. R. Soc. S. Aust.
 11: 61, pl. 11, fig. 10

Fowlers Bay.

Irus (Notopaphia) griseus Lamarck, 1818 Q.M. Figs 51t-u

Venus grisea Lamarck, 1818, Hist. nat. Anim. s. Vert. 5: 600
 Venus Bay.

Circomphalus disjectus (Perry, 1811) Q.M. Figs 52e,f; 75a; Pl. 8g

Venus disjecta Perry, 1811, Conchology pl. 58, fig. 3
 Tourville Bay, Venus Bay

HIATELLIDAE

Hiatella australis (Lamarck, 1818) Q.M. Figs 53c,d

Corbula australis Lamarck, 1818, Hist. nat. Anim. s. Vert.
 5: 495

Smoky Bay, Venus Bay.

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 Dept of Mines and Energy, Handbook No. 9
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ACKNOWLEDGMENTS

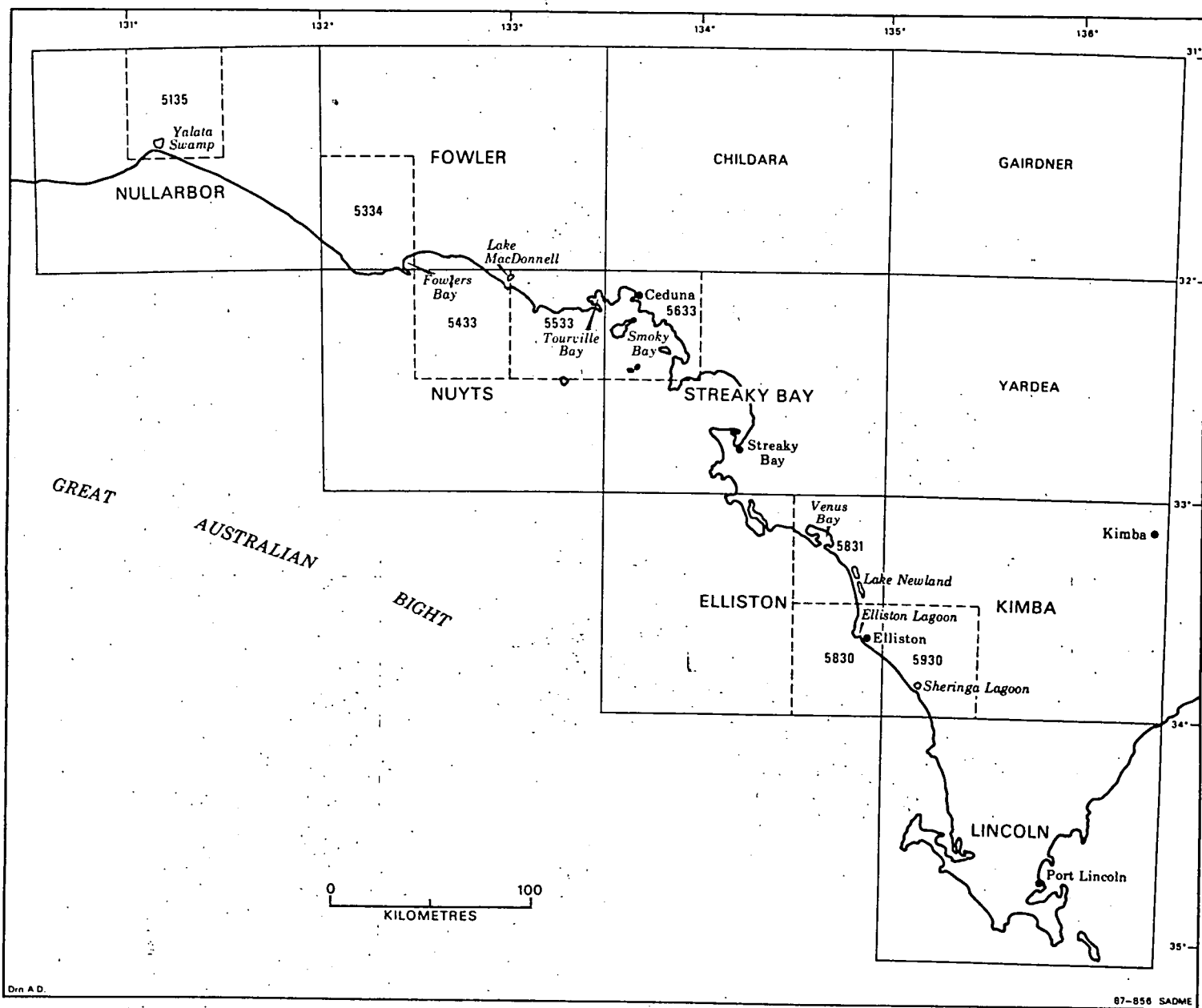
I am greatly indebted to Dr Winston Ponder of the Australian Museum, Sydney, for assistance with the identification of small species, and for granting access to the Australian Museum Collection.

Photographs of the small molluscs were taken by E.D. Madden in the Drafting and Survey Branch of the S.A. Department of Mines and Energy and printing assistance given by the Biostratigraphy Branch of the Geological Survey of South Australia.

EXPLANATION OF FIGURES

Figure 1 Locality Plan

Figure 1 Locality Plan



EXPLANATION OF FIGURES.

Fig. 2

- 2a Rixa watsoni 5533RS 146 x20
- b Collisella sp.nov. 5334 RS 36 x13
- c Asteracmea illibrata 5633 RS 128 x12
- d ?Benthastelena sp. 5633 RS 128 x8
- e Notoacmea flammea 5533 RS 111 x7
- f Cocculinella salisburyensis 5533 RS 147 x25
- g Herpetopoma scabriuscula 5633 RS 128 x20
- h Ethminolia vitiliginea 5334 RS 37 x25
- i Argalista roseopunctata 5533 RS 117 x20
- j Argalista fugitiva 5633 RS 126 x15
- k Astraea (Bellastraea) hesperus 5830 RS 32 x8
- l,m Munditia tasmanica 5830 RS 32 x10
- n,o Elachorbis tatei 5533 RS 147 x8
- p,q,r Lissotesta contabulata 5633 RS 109 x10
- s,t Starkeyna cancellata 5533 RS 159 x10
- u Littorina (Austrolittorina) praetermissa 5831 RS 41 x8
- v Pisinna frenchiensis 5831 RS 49 x15
- w Lucidestea atkinsoni 5334 RS 37 x20
- x Lucidestea sp. 5533 RS 120 x20
- y Hydrobia buccinoides 5633 RS 58 x15
- z Rissoella (Jeffreysiella) wilfredi 5533 RS 127 x15
- A 'Rissoella' sp. 5831 RS 55 x15
- B Merelina demessa 5633 RS 111 x10
- C Eatoniella melanochroma 5633 RS 93 x10
- D Assimineia tasmanica 5633 RS 59 x12
- E Eatonina (E.) shirleyae 5533 RS 161 x15
- F Hydrococcus brazieri 5633 RS 41 x9
- G Hydrococcus brazieri 5831 RS 57 x9
- H Acme scalarina 5633 RS 86 x8
- I Acme vincentiana 5633 RS 86 x8
- J Anabathron contabulatum 5633 RS 93 x25

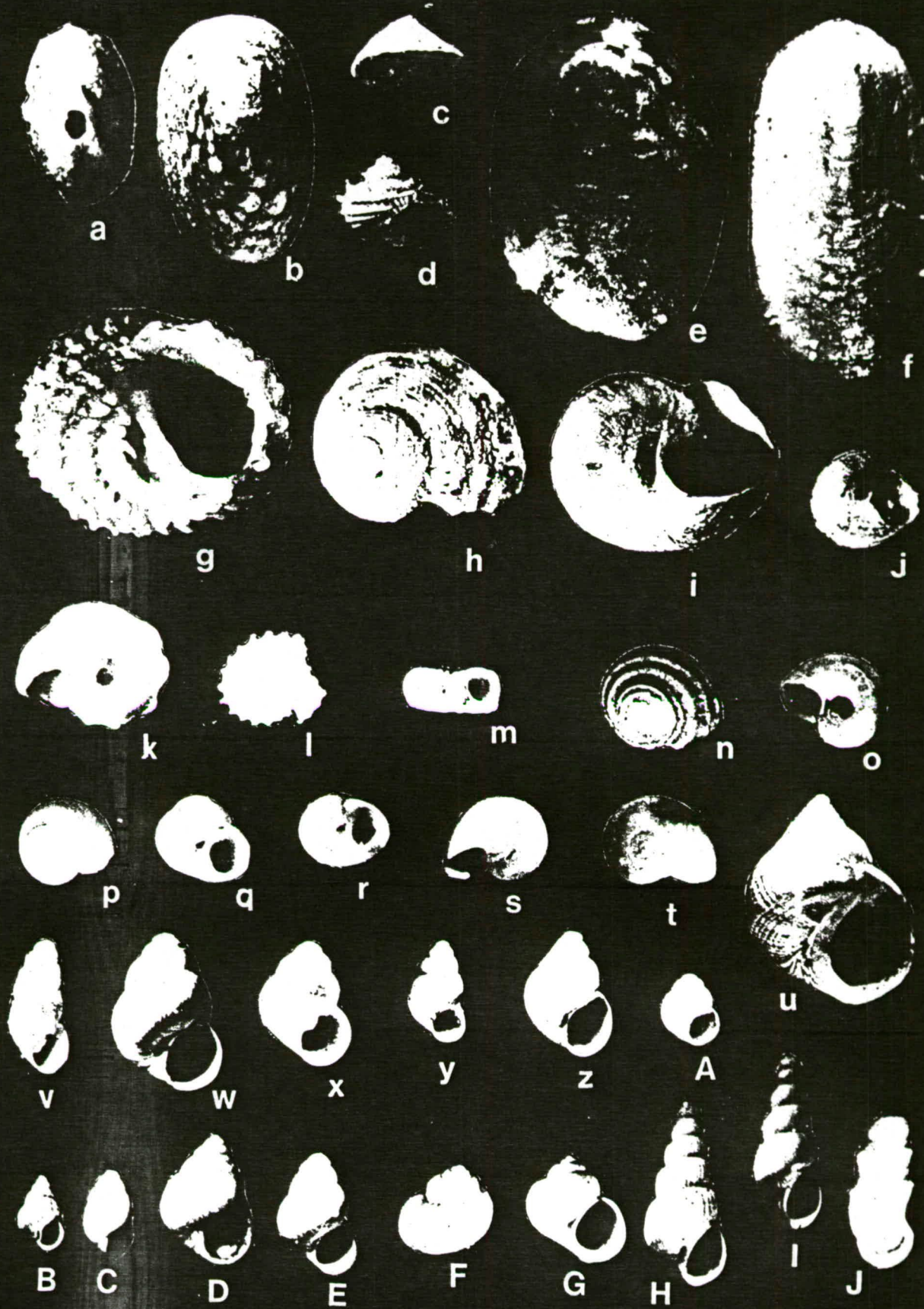


Fig. 3

- 3a Diala lauta 5533 RS 114 x7
- b Diala lauta nodulose form 5533 RS 147 x15
- c Diala monile 5633 RS 61 x8
- d Diala monile nodulose form 5633 RS 71 x8
- e Diala translucida 5831 RS 54 x10
- f Bittium (Semibittium) granarium 5533 RS 108 x13
- g Bittium (Semibittium) icarus 5633 RS 71 x13
- h Eubittium lawleyanum 5831 RS 57 x9
- i Seila (Notoseila) triplanicincta 5533 RS 127 x9
- j Monophorus angasi 5533 RS 112 x15
- k Triphora nivea 5633 RS 128 x9
- l Eutriphora pseudocana (fragment) 5533 RS 127 x9
- m Epitonium (Acutiscala) minora (juvenile) 5831 RS 36 x10
- n Platiscala invalida 5831 RS 34 x8
- o Eulima lodderae 5633 RS 104 x11
- p Cossmannica jacksonensis 5633 RS 42 x8
- q Agatha australis 5533 RS 108 x20
- r ? Agatha jonesiana 5633 RS 62 x6
- s Puposyrnola tasmanica (juvenile) 5633 RS 79 x11
- t Syrnola elliottae 5533 RS 119 x11
- u Pyrgiscus erubescens 5633 RS 61 x18
- v Pyrgiscus cf. hedleyi 5633 RS 111 x8
- w Elodiamea cf caelatura 5633 RS 41 x10
- x Eulimella micra 5533 RS 212 x20
- y Eulimella turrita 5633 RS 86 x20
- z Linopyrga brevis 5830 RS 34 x13
- A Linopyrga portseaensis 5633 RS 105 x12

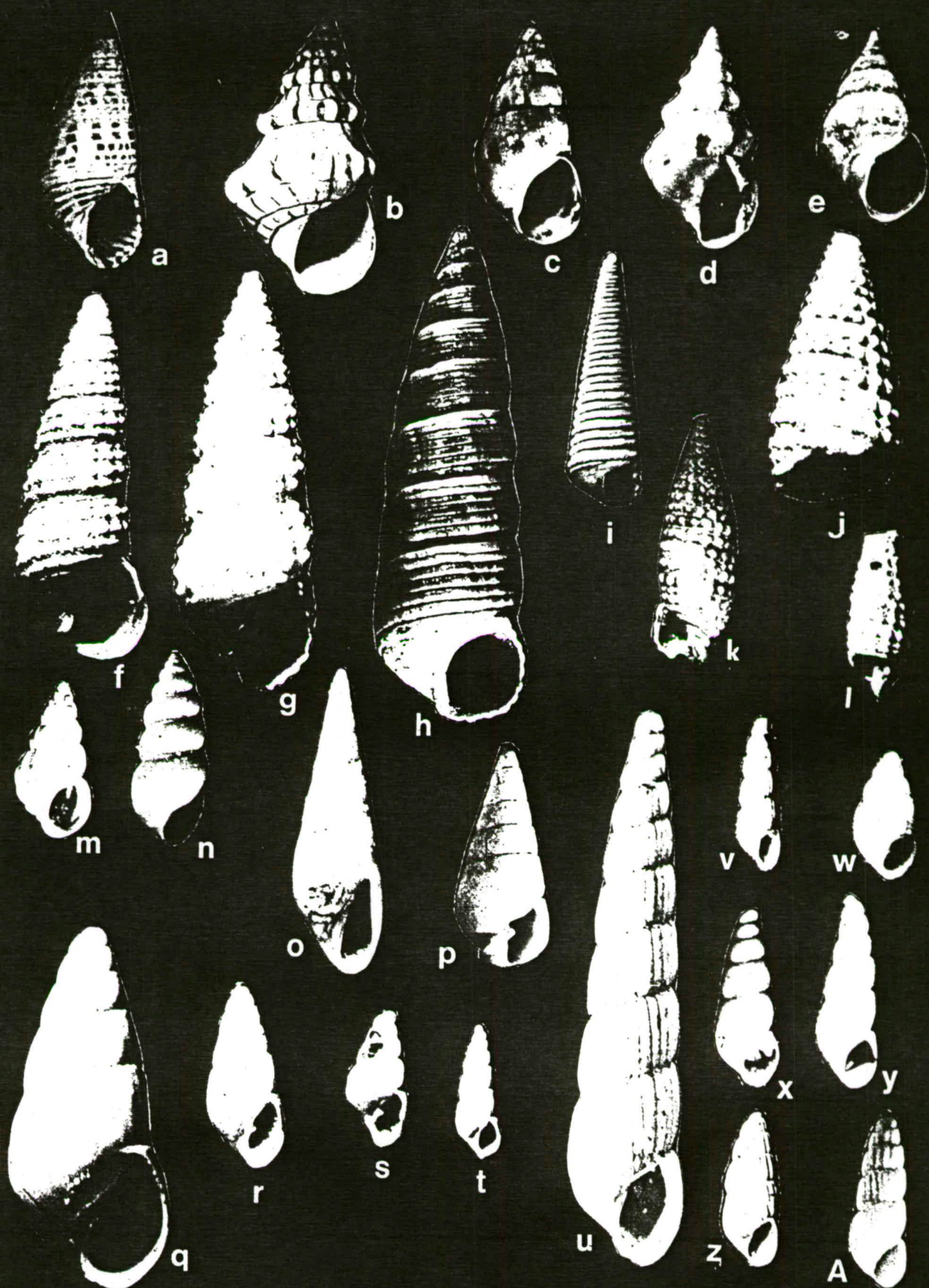


Fig.4

- 4a Chemnitzia acicularis 5633 RS 61 x10
- b Chemnitzia scalpidens 5334 RS 21 x8
- c Scalenostoma subcarina 5633 RS 58 x10
- d Odostomia metcalfei 5633 RS 91 x10
- e Odostomia deplexa 5633 RS 41 x10
- f Odostomia deplexa 5633 RS 42 x10
- g Odostomia belperioi sp. nov. 5633 RS 44 , paratype, fossil, x10
- h Odostomia belperioi sp. nov. 5633 RS 44 , paratype, fossil, x10
- i Odostomia belperioi sp. nov. 5633 RS 44, holotype, living, x10
- j Odostomia belperioi sp. nov. 5633 RS 44, paratype, fossil, x10
- k Icuncula torcularis 5533 RS 113 x10
- l Benthoxystus petterdi 5633 RS 126 x8
- m Macrozafra atkinsoni 5633 RS 102, with colour pattern, x10
- n Macrozafra atkinsoni 5633 RS 61 x10
- o Etrema sp. cf elegans 5334 RS 17 x8
- p Guraleus bordaensis 5633 RS 103 x8
- q Paramontana modesta 5633 RS 76 x8
- r Paramontana sp. 5533 RS 109 x8
- s Ringiculadda australis 5830 RS 32 x10
- t Ringiculadda hardingi 5633 RS 58 x10
- u Pugillaria stowae 5831 RS 53, juvenile, x20
- v,w Plectotrema ciliata 5633 RS 78, x8
- x Retusa chrysoma 5633 RS 128 x10
- y Retusa eumicra 5831 RS 41 x8
- z Volvulella rostrata 5633 RS 103 x8
- A Philine angasi 5633 RS 69 x10
- B Acteocina fusiformis 5633 RS 69 x10
- C Cyclichna arachis 5633 RS 47 x10

ctd

Fig. 4 ctd

- 4D Austrocyclichna exigua 5533 RS 127 x12
- E Haminoea maugeansis 5533 RS 108 x8
- F Liloea brevis 5533 RS 159 x8
- G Liloea brevis 5633 RS 55 , with colour pattern, x8
- H Liloea brevis 5633 RS 61, with colour pattern x8
- I Liloea hordeacea 5831 RS 41 x10
- J Liloea brevis 5533 RS 112 x8

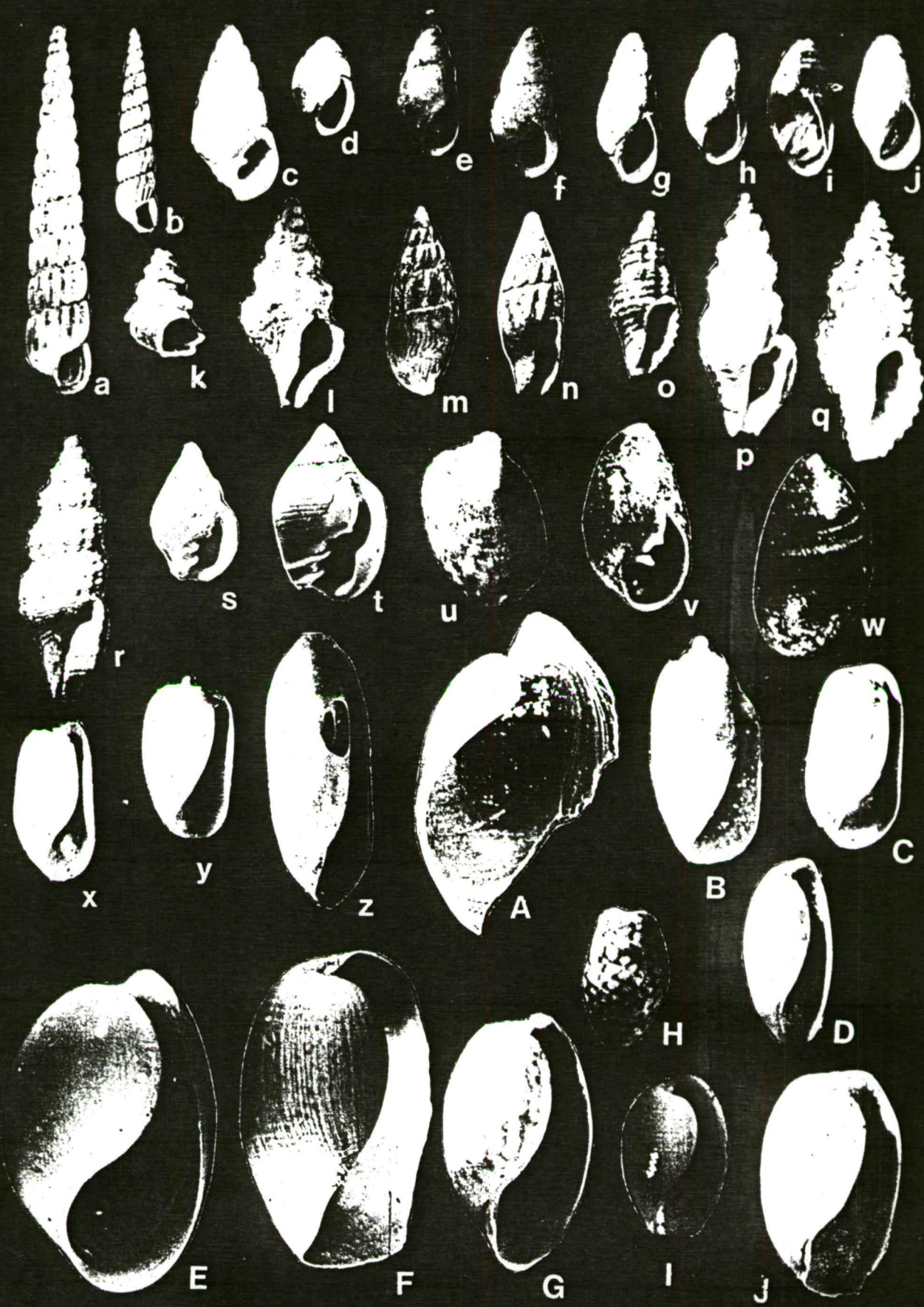
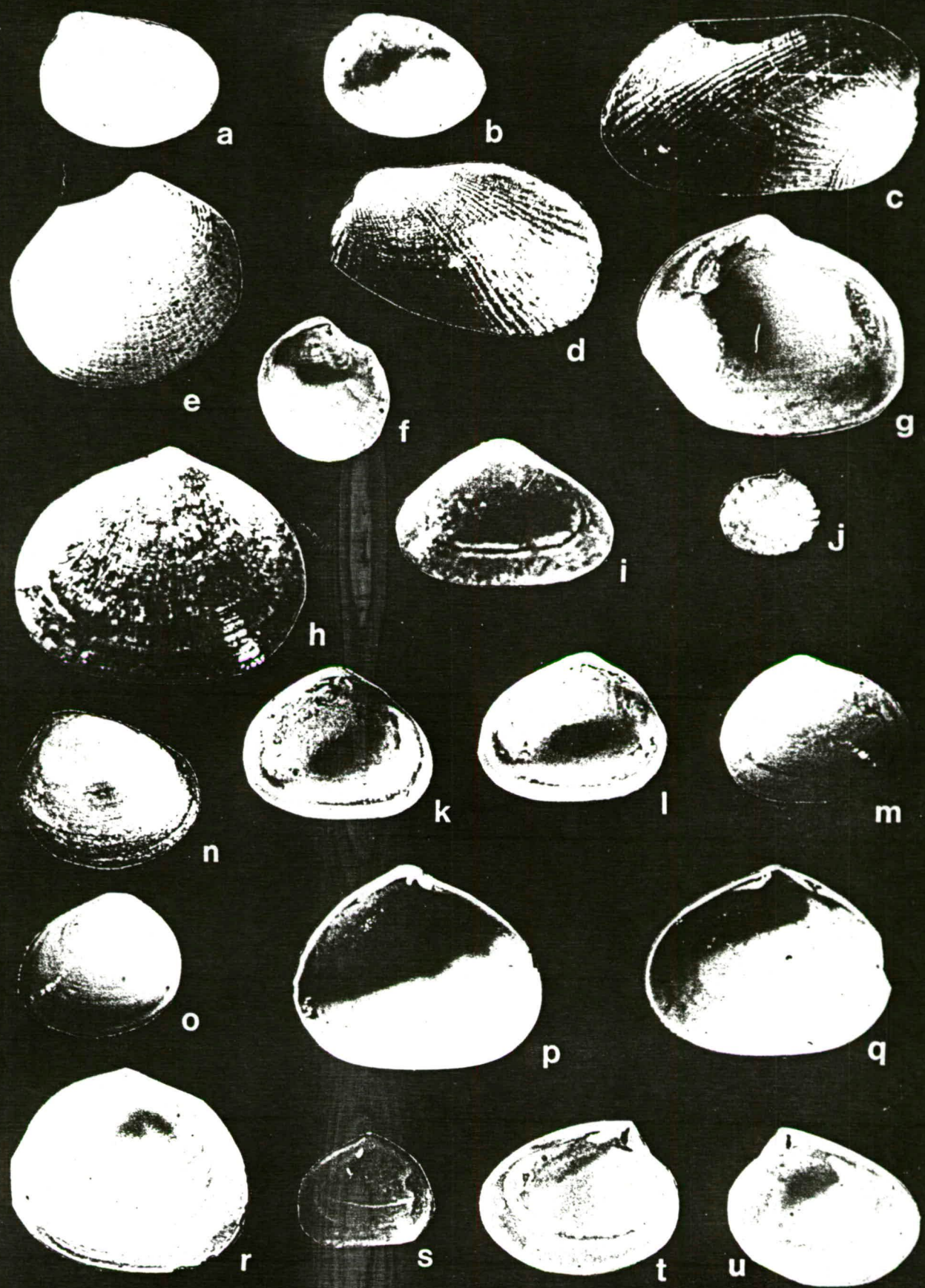


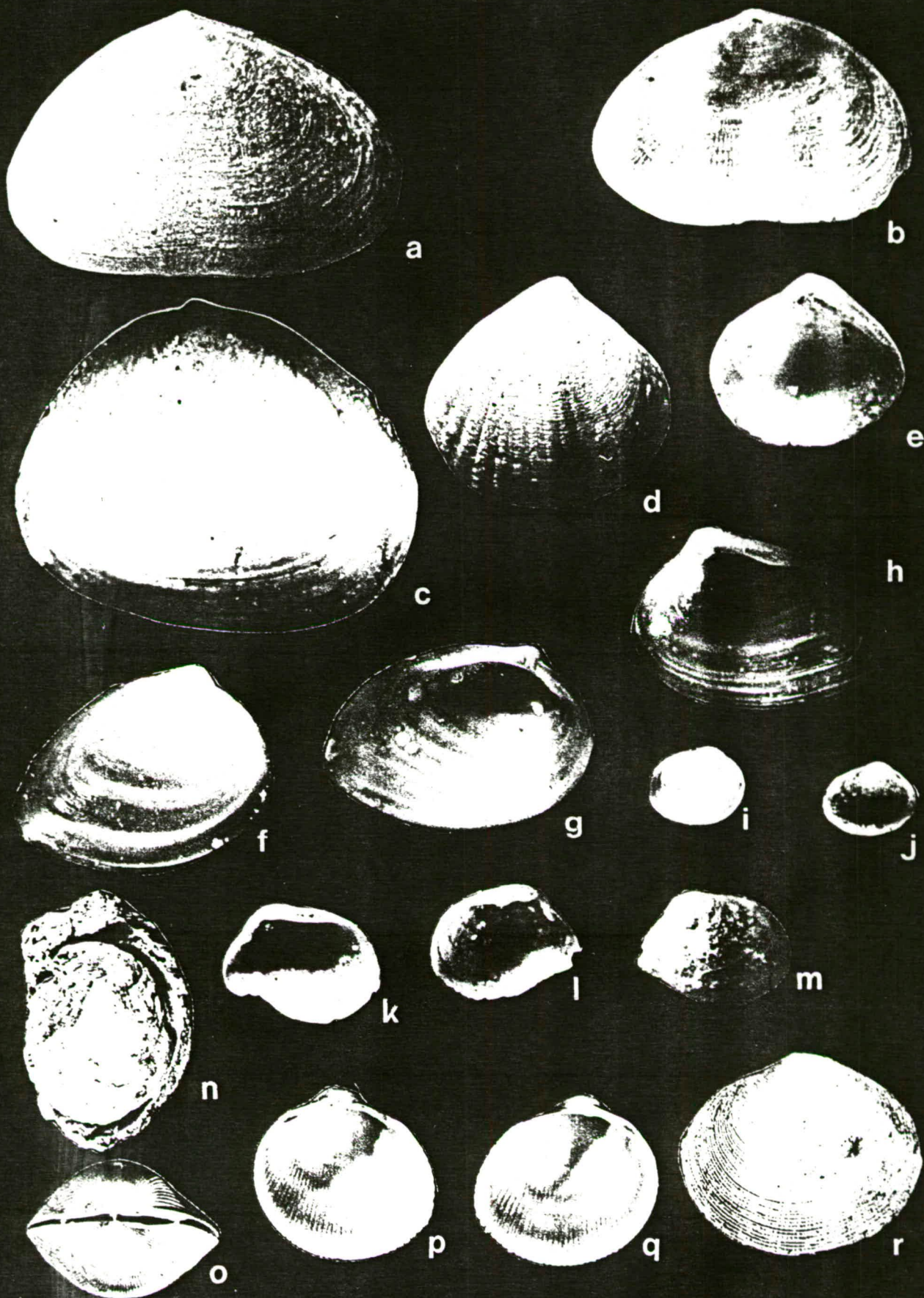
Fig. 5

- 5a,b Nucula pusilla a, RV exterior, b , LV interior, 5831 RS 58, x
c Musculus nanus RV exterior, 5533 RS 109, x12
d Musculus semiradiatus LV exterior, 5633 RS 127, x11
e,f Epicodakia tatei e RV exterior, f RV interior, 5533 RS 162,
g Lasaea australis LV interior 5830 RS 32 x25 x20
h,i Melliteryx acupunctum h LV exterior, i LV interior, 5533 RS 1
j Myllita deshayesi LV LV exterior 5830 RS 31 x13
k,l,m Melliteryx sp. k LV, l RV, m LV 5533 RS 136 x15
n,p,q Lasaea dromanaensis n RV, p LV, q RV 5831 RS 44 x20
o Lasaea dromanaensis both valves 5533 RS 129 x20
r Lepton australe LV 5633 RS 71 x14
s Lepton trigonale RV 5533 RS 160 x14
t Mysella donaciformis LV 5831 RS 39 x10
u Mysella donaciformis RV 5633 RS 136 x10

Fig. 6

- 6a,b Borniola lepida a LV exterior, b LV interior, 5633 RS 94 x12
c Scintilla meridionalis LV 5633 RS 54 x10
d,e Cyclocardia (Vimentum) excelsior RV 5633 RS 54 x16
f,g,h Spisula (Diaphoromactra) versicolor f RV, g LV, h RV 5831 RS x1
i,j ? Sphaerium (Musculium) tasmanicum 5533 RS 156 x10
k,l,m Neogaimardia tasmanica k LV, l,m RV 5831 RS 54 x16
n Chama ruderalis 5334 RS 39 x1
o,p,q Fulvia tenuicostata 5533 RS 128 x1
r Tellina (Pseudarcopagia) victoriae 5633 RS 18 x1





TABLES

Table 1a

Gastropoda : Fissurellidae - Turritellidae
Yalata Swamp - Tourville Bay

Table 1b

Gastropoda: Fissurellidae - Turritellidae
Smoky Bay - Sheringa Lagoon

Table 2a

Gastropoda : Potamididae - Columbelloidae
Yalata Swamp - Tourville Bay

Table 2b

Gastropoda : Potamididae - Columbelloidae
Smoky Bay - Sheringa Lagoon

Table 3a

Gastropoda : Buccinidae - Opisthobranchia ; Scaphopoda
Yalata Swamp- Tourville Bay

Table 3b

Gastropoda : Buccinidae- Opisthobranchia ; Scaphopoda
Smoky Bay - Sheringa Lagoon

Table 4a

Bivalvia
Yalata Swamp - Tourville Bay

Table 4b

Bivalvia
Smoky Bay - Sheringa Lagoon

GASTROPODA

Amblychilepas crucis
Amblychilepas oblonga
Amblychilepas sp. juveniles
Rixa watsoni
Tugali cicatricosa
Clypidina (Montfortula) rugosa
Collisella sp. nov.
Asteracmea illibrata
Notoacmea flammea
Putelloida insignis
Putelloida sp.
Cocculinella salisburyensis
Herpetopoma scabriuscula
Fossarina (Minopa) petterdi
Monodonta (Austrocochlea) constricta
Calliostoma (Fautor) legrandi
Calliostoma (Fautor) rubiginosum
Benthastelena sp.
Diloma (Chlorodiloma) odontis
Diloma (Fractarmilla) concamerata
Diloma (Fractarmilla) rudis
Thalotia (Thalotia) conica
Thalotia (Odontotrochus) chlorostoma
Gibbula (Notogibbula) lehmanni
Cantharidus (Phasianotrochus) eximius
Cantharidus (Phasianotrochus) irisodontes
Astele (Astelena) multigranus
Clanculus (Isoclanculus) dunkeri
Clanculus (Isoclanculus) philippi
Clanculus (Mesoclanculus) plebeius
Ethminolia elveri
Ethminolia viitiginea
Astraea (Bellastraea) hesperus
Argalista fugitiva
Argalista roseopunctata
Munditia tasmanica
Elachorbis tatei
Lisso-testa contabulata
Starkeyna cancellata
Phasianella australis
Nerita (Melaneria) atramentosa
Bembicium auratum
Bembicium melanostoma
Bembicium nanum
Littorina (Austrolittorina) praetermissa
Littorina (Austrolittorina) unifasciata
Laevilittorina mariae
Pisinnia frenchiensis
Lucidestea atkinsoni
Lucidestea sp.
Hydrobia buccinoides
Rissoella wilfredi
Rissoella sp.
Merelina demessa
Eatoniella melanochroma
Coxiella striata
Coxiella sp.
Hydrococcus brazieri
Acme scalarina
Acme vincentiana
Anabathron contabulatum
Assimineia tasmanica
Eatonina (Eatonina) shirleyae
Gazamedu-iredalei

[illegible]

Table 2a follows

Table 1b follows

GASTROPODA

Amblychilenas c

Amblychilepas oblonga
Amblychilepas sp. juveniles
Rixa watsoni
Tigali cicatricosa
Clypidina (*Montfortula*) *rugosa*
Collisella sp. nov.
Asteracmea illibrata
Notoacmea flammea
Putelloida insignis
Putelloida sp.
Cocculinella salisburyensis
Herpetopoma scabriuscula
Fossarina (*Minopa*) *petterdi*
Monodonta (*Austrocochlea*) *constricta*
Calliostoma (*Fautor*) *legrandi*
Calliostoma (*Fautor*) *rubiginosum*
Benthastelena sp.
Diloma (*Chlorodiloma*) *odontis*
Diloma (*Fractarmilla*) *concamerata*
Diloma (*Fractarmilla*) *rudis*
Thalotia (*Thalotia*) *conica*
Thalotia (*Odontotrochus*) *chlorostoma*
Gibbula (*Notogibbula*) *lehmanni*
Cantharidus (*Phasianotrochus*) *eximius*
Cantharidus (*Phasianotrochus*) *irisodontes*
Astele (*Astelena*) *multigranus*
Clanculus (*Isoclanculus*) *dunkeri*
Clanculus (*Isoclanculus*) *philippi*
Clanculus (*Mesoclanculus*) *plebeius*
Ethminolia elveri
Ethminolia vitiliginea
Astraea (*Bellastraea*) *hesperus*
Argalista fugitiva
Argalista roscopunctata
Munditia tasmanica
Elachorbis tatei
Lissotesia contabulata
Starkeyna cancellata
Phasianella australis
Nerita (*Melanerita*) *atramentosa*
Bembicium auratum
Bembicium melanostoma
Bembicium nanum
Littorina (*Austrolittorina*) *praetermissa*
Littorina (*Austrolittorina*) *unifasciata*
Laevilittorina mariae
Pisinnia frenchiensis
Lucidestea atkinsoni
Lucidestea sp.
Hydrobia buccinoides
Rissoella wilfredi
Rissoella sp.
Merelina demessa
Eatoniella melanochroma
Coxiella striata
Coxiella sp.
Hydrococcus brazieri
Acme scalarina
Acme vincentiana
Anabathron contabulatum
Assimineia tasmanica
Eatonina (*Eatonina*) *shirleyae*
Gazameda iredalei

[illegible]

v = very rare (1 – 2 specimens)
r = rare (3 – 5 specimens)
f = frequent (6 – 10 specimens)
c = common (11 – 25 specimens)
a = abundant (25+ specimens)

TABLE 2a

GASTROPODA

[illegible]

v* — found in 5533RS106, S109

87-850 SADME

Table 2b follows

GASTROPODA

Baillaria australis
Baillaria (*Baillariella*) *estuarina*
Baillaria (*Zeacumantus*) *bivariata*
Baillaria (*Zeacumantus*) *diemenensis*
Bitium (*Semibitium*) *granarium*
Bitium (*Semibitium*) *icarus*
Diala laeta
Diala laeta (nodulose form)
Diala monile
Diala monile (nodulose form)
Diala translucida
Hypotrochus monachus
Eubittium lawleyanum
Seila (*Notoseila*) *triplanincta*
Monophorus angasi
Obesula albovittata
Triphora nivea
Eutriphora pseudocana
Epitonium (*Acutiscala*) *minora*
Clathrus jukesianus
Epitonium (*Gyroskala*) *perplexum*
Platiscala invalida
Eulima lodderae
Cossmannica jacksonensis
Agatha australis
Agatha jonesiana
Puposynmola tasmanica
Syrnola elliotiae
Pyrgiscus erubescens
Pyrgiscus fuscus
Pyrgiscus hedleyi
Elodiamea caelatura
Eulimella micra
Eulimella turrita
Linopyrga brevis
Linopyrga portsaensis
Chemnitzia acicularis
Chemnitzia scalpidens
Scalenostoma subcarina
Odostomia belperioi
Odostomia deplexa
Odostomia metcalfei
Hipponix (*Sabia*) *conicus*
Hipponix (*Antisabia*) *erma*
Hipponix (*Antisabia*) *foliaceus*
Icuncula torcularis
Capulus australis
Capulus banksi
Capulus violaceus
Polinices (*Conuber*) *conicus*
Sigaretotrema umbilicatum
Proxiuber microsculptum
Lepsiella flindersi
Benihoxystus petterdi
Bedevea paivae
Mitrella acuminata
Mitrella (*Dentimitrella*) *lincolniensis*
Mitrella (*Dentimitrella*) *semiconvexa*
Macrozafra atkinsoni
Euplica bidentata

v = very rare (1 – 2 specimens)
r = rare (3 – 5 specimens)
f = frequent (6 – 10 specimens)
c = common (11 – 25 specimens)
a = abundant (25+ specimens)

TABLE 3a

GASTROPODA

Cominella eburnea
Niotha pauperata
Niotha pyrrhus
Josephia tasmanica
Fusinus australis
Microcolus dunkeri
Oliva australis
Mitra (Eumitra) glabra
Mitra vincentiana
Austromitra schomburgki
Proximitra pica
Vasum (Altivasum) flindersi
Microginella cymbalum
Guraleus hordaensis
Etrema sp. cf. *elegans*
Paramontana modesta
Paramontana sp.
Pseudodaphnella sp. cf. *retellaria*
Nepotilla sp.
Splendrillia harpularia
Conus (Floraconus) anemone
Strioterebrum (Pervicacia) crassum
Ringiculadda australis
Ringiculadda hardingi
Siphonaria zelandica
Siphonaria sp.
Pugillaria stowae
Plectotrema ciliata
Salinator fragilis
Salinator lawsae
Salinator solidus
Retusa chrysoma
Retusa eumicra
Volvulella rostrata
Philine angasi
Acteocina fusiformis
Cyclichna arachis
Austrocyclichna exigua
Haminioea maugeansis
Liloa brevis
Liloa hordeacea
Cyclichnatys campanula
Bulla quoyii

SCAPHOPODA

Dentalium sp. juvenile
Antalis sp. juvenile
Cadulus (Gadila) angustior

Drn E.A.

GASTROPODA

Cominella eburnea
Niotha pauperata
Niotha pyrrhus
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Austrocyclichna exigua
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Liloa hordeacea
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SCAPHOPODA

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Cadulus (Gadila) angustior

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GASTROPODA

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SCAPHOPODA

Dentalium sp. juvenile
Antalis sp. juvenile
Cadulus (Gadila) angustior

Drn E.A.

SCAPHOPODA

Dentalium sp. juvenile
Antalis sp. juvenile
Cadulus (Gadila) angustior

Drn E.A.

SCAPHOPODA

Dentalium sp. juvenile
Antalis sp. juvenile
Cadulus (Gadila) angustior

Drn E.A.

YALATA SWAMP								FOWLERS BAY								LAKE MACDONNELL				TOURVILLE BAY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
5135 RS 7	5135 RS 8	5135 RS 9	5135 RS 10	5135 RS 11	5135 RS 14	5135 RS 15	5135 RS 16	5334 RS 11	5334 RS 15	5334 RS 16	5334 RS 17	5334 RS 18	5334 RS 21	5334 RS 22	5334 RS 24	5334 RS 26	5334 RS 27	5334 RS 28	5334 RS 29	5334 RS 30	5334 RS 31	5334 RS 33	5334 RS 34	5334 RS 35	5334 RS 36	5334 RS 37	5433 RS 11	5433 RS 12	5433 RS 13	5433 RS 104	5533 RS 107	5533 RS 108	5533 RS 109	5533 RS 110	5533 RS 111	5533 RS 112	5533 RS 113	5533 RS 114	5533 RS 115	5533 RS 116	5533 RS 117	5533 RS 118	5533 RS 119	5533 RS 120	5533 RS 122	5533 RS 123	5533 RS 124	5533 RS 125	5533 RS 126	5533 RS 127	5533 RS 128	5533 RS 129	5533 RS 130	5533 RS 131	5533 RS 132	5533 RS 134	5533 RS 135	5533 RS 136	5533 RS 137	5533 RS 141	5533 RS 142	5533 RS 143	5533 RS 144	5533 RS 145	5533 RS 146	5533 RS 147	5533 RS 148	5533 RS 151	5533 RS 155	5533 RS 156	5533 RS 157	5533 RS 158	5533 RS 159	5533 RS 160	5533 RS 161	5533 RS 162	5533 RS 163	5533 RS 164	5533 RS 165	5533 RS 166	5533 RS 167	5533 RS 168	5533 RS 169	5533 RS 170	5533 RS 171	5533 RS 172	5533 RS 173	5533 RS 174	5533 RS 175	5533 RS 176	5533 RS 177	5533 RS 178	5533 RS 179	5533 RS 180	5533 RS 181	5533 RS 182	5533 RS 183	5533 RS 184	5533 RS 185	5533 RS 186	5533 RS 187	5533 RS 188	5533 RS 189	5533 RS 190	5533 RS 191	5533 RS 192	5533 RS 193	5533 RS 194	5533 RS 195	5533 RS 196	5533 RS 197	5533 RS 198	5533 RS 199	5533 RS 200	5533 RS 201	5533 RS 202	5533 RS 203	5533 RS 204	5533 RS 205	5533 RS 206	5533 RS 207	5533 RS 208	5533 RS 209	5533 RS 210	5533 RS 211	5533 RS 212	5533 RS 213	5533 RS 214	5533 RS 215	5533 RS 216	5533 RS 217	5533 RS 218	5533 RS 219	5533 RS 220	5533 RS 221	5533 RS 222	5533 RS 223	5533 RS 224	5533 RS 225	5533 RS 226	5533 RS 227	5533 RS 228	5533 RS 229	5533 RS 230	5533 RS 231	5533 RS 232	5533 RS 233	5533 RS 234	5533 RS 235	5533 RS 236	5533 RS 237	5533 RS 238	5533 RS 239	5533 RS 240	5533 RS 241	5533 RS 242	5533 RS 243	5533 RS 244	5533 RS 245	5533 RS 246	5533 RS 247	5533 RS 248	5533 RS 249	5533 RS 250	5533 RS 251	5533 RS 252	5533 RS 253	5533 RS 254	5533 RS 255	5533 RS 256	5533 RS 257	5533 RS 258	5533 RS 259	5533 RS 260	5533 RS 261	5533 RS 262	5533 RS 263	5533 RS 264	5533 RS 265	5533 RS 266	5533 RS 267	5533 RS 268	5533 RS 269	5533 RS 270	5533 RS 271	5533 RS 272	5533 RS 273	5533 RS 274	5533 RS 275	5533 RS 276	5533 RS 277	5533 RS 278	5533 RS 279	5533 RS 280	5533 RS 281	5533 RS 282	5533 RS 283	5533 RS 284	5533 RS 285	5533 RS 286	5533 RS 287	5533 RS 288	5533 RS 289	5533 RS 290	5533 RS 291	5533 RS 292	5533 RS 293	5533 RS 294	5533 RS 295	5533 RS 296	5533 RS 297	5533 RS 298	5533 RS 299	5533 RS 300	5533 RS 301	5533 RS 302	5533 RS 303	5533 RS 304	5533 RS 305	5533 RS 306	5533 RS 307	5533 RS 308	5533 RS 309	5533 RS 310	5533 RS 311	5533 RS 312	5533 RS 313	5533 RS 314	5533 RS 315	5533 RS 316	5533 RS 317	5533 RS 318	5533 RS 319	5533 RS 320	5533 RS 321	5533 RS 322	5533 RS 323	5533 RS 324	5533 RS 325	5533 RS 326	5533 RS 327	5533 RS 328	5533 RS 329	5533 RS 330	5533 RS 331	5533 RS 332	5533 RS 333	5533 RS 334	5533 RS 335	5533 RS 336	5533 RS 337	5533 RS 338	5533 RS 339	5533 RS 340	5533 RS 341	5533 RS 342	5533 RS 343	5533 RS 344	5533 RS 345	5533 RS 346	5533 RS 347	5533 RS 348	5533 RS 349	5533 RS 350	5533 RS 351	5533 RS 352	5533 RS 353	5533 RS 354	5533 RS 355	5533 RS 356	5533 RS 357	5533 RS 358	5533 RS 359	5533 RS 360	5533 RS 361	5533 RS 362	5533 RS 363	5533 RS 364	5533 RS 365	5533 RS 366	5533 RS 367	5533 RS 368	5533 RS 369	5533 RS 370	5533 RS 371	5533 RS 372	5533 RS 373	5533 RS 374	5533 RS 375	5533 RS 376	5533 RS 377	5533 RS 378	5533 RS 379	5533 RS 380	5533 RS 381	5533 RS 382	5533 RS 383	5533 RS 384	5533 RS 385	5533 RS 386	5533 RS 387	5533 RS 388	5533 RS 389	5533 RS 390	5533 RS 391	5533 RS 392	5533 RS 393	5533 RS 394	5533 RS 395	5533 RS 396	5533 RS 397	5533 RS 398	5533 RS 399	5533 RS 400	5533 RS 401	5533 RS 402	5533 RS 403	5533 RS 404	5533 RS 405	5533 RS 406	5533 RS 407	5533 RS 408	5533 RS 409	5533 RS 410	5533 RS 411	5533 RS 412	5533 RS 413	5533 RS 414	5533 RS 415	5533 RS 416	5533 RS 417	5533 RS 418	5533 RS 419	5533 RS 420	5533 RS 421	5533 RS 422	5533 RS 423	5533 RS 424	5533 RS 425	5533 RS 426	5533 RS 427	5533 RS 428	5533 RS 429	5533 RS 430	5533 RS 431	5533 RS 432	5533 RS 433	5533 RS 434	5533 RS 435	5533 RS 436	5533 RS 437	5533 RS 438	5533 RS 439	5533 RS 440	5533 RS 441	5533 RS 442	5533 RS 443	5533 RS 444	5533 RS 445	5533 RS 446	5533 RS 447	5533 RS 448	5533 RS 449	5533 RS 450	5533 RS 451	5533 RS 452	5533 RS 453	5533 RS 454	5533 RS 455	5533 RS 456	5533 RS 457	5533 RS 458	5533 RS 459	5533 RS 460	5533 RS 461	5533 RS 462	5533 RS 463	5533 RS 464	5533 RS 465	5533 RS 466	5533 RS 467	5533 RS 468	5533 RS 469	5533 RS 470	5533 RS 471	5533 RS 472	5533 RS 473	5533 RS 474	5533 RS 475	5533 RS 476	5533 RS 477	5533 RS 478	5533 RS 479	5533 RS 480	5533 RS 481	5533 RS 482	5533 RS 483	5533 RS 484	5533 RS 485	5533 RS 486	5533 RS 487	5533 RS 488	5533 RS 489	5533 RS 490	5533 RS 491	5533 RS 492	5533 RS 493	5533 RS 494	5533 RS 495	5533 RS 496	5533 RS 497	5533 RS 498	5533 RS 499	5533 RS 500	5533 RS 501	5533 RS 502	5533 RS 503	5533 RS 504	5533 RS 505	5533 RS 506	5533 RS 507	5533 RS 508	5533 RS 509	5533 RS 510	5533 RS 511	5533 RS 512	5533 RS 513	5533 RS 514	5533 RS 515	5533 RS 516	5533 RS 517	5533 RS 518	5533 RS 519	5533 RS 520	5533 RS 521	5533 RS 522	5533 RS 523	5533 RS 524	5533 RS 525	5533 RS 526	5533 RS 527	5533 RS 528	5533 RS 529	5533 RS 530	5533 RS 531	5533 RS 532	5533 RS 533	5533 RS 534	5533 RS 535	5533 RS 536	5533 RS 537	5533 RS 538	5533 RS 539	5533 RS 540	5533 RS 541	5533 RS 542	5533 RS 543	5533 RS 544	5533 RS 545	5533 RS 546	5533 RS 547	5533 RS 548	5533 RS 549	5533 RS 550	5533 RS 551	5533 RS 552	5533 RS 553	5533 RS 554	5533 RS 555	5533 RS 556	5533 RS 557	5533 RS 558	5533 RS 559	5533 RS 560	5533 RS 561	5533 RS 562	5533 RS 563	5533 RS 564	5533 RS 565	5533 RS 566	5533 RS 567	5533 RS 568	5533 RS 569	5533 RS 570	5533 RS 571	5533 RS 572	5533 RS 573	5533 RS 574	5533 RS 575	5533 RS 576	5533 RS 577	5533 RS 578	5533 RS 579	5533 RS 580	5533 RS 581	5533 RS 582	5533 RS 583	5533 RS 584	5533 RS 585	5533 RS 586	5533 RS 587	5533 RS 588	5533 RS 589	5533 RS 590	5533 RS 591	5533 RS 592	5533 RS 593	5533 RS 594	5533 RS 595	5533 RS 596	5533 RS 597	5533 RS 598	5533 RS 599	5533 RS 600	5533 RS 601	5533 RS 602	5533 RS 603	5533 RS 604	5533 RS 605	5533 RS 606	5533 RS 607	5533 RS 608	5533 RS 609	5533 RS 610	5533 RS 611	5533 RS 612	5533 RS 613	5533 RS 614	5533 RS 615	5533 RS 616	5533 RS 617	5533 RS 618	5533 RS 619	5533 RS 620	5533 RS 621	5533 RS 622	5533 RS 623	5533 RS 624	5533 RS 625	5533 RS 626	5533 RS 627	5533 RS 628	5533 RS 629	5533 RS 630	5533 RS 631	5533 RS 632	5533 RS 633	5533 RS 634	5533 RS 635	5533 RS 636	5533 RS 637	5533 RS 638	5533 RS 639	5533 RS 640	5533 RS 641	5533 RS 642	5533 RS 643	5533 RS 644	5533 RS 645	5533 RS 646	5533 RS 647	5533 RS 648	5533 RS 649	5533 RS 650	5533 RS 651	5533 RS 652	5533 RS 653	5533 RS 654	5533 RS 655	5533 RS 656	5533 RS 657	5533 RS 658	5533 RS 659	5533 RS 660	5533 RS 661	5533 RS 662	5533 RS 663	5533 RS 664	5533 RS 665	5533 RS 666	5533 RS 667	5533 RS 668	5533 RS 669	5533 RS 670	5533 RS 671	5533 RS 672	5533 RS 673	5533 RS 674	5533 RS 675	5533 RS 676	5533 RS 677	5533 RS 678	5533 RS 679	5533 RS 680	5533 RS 681	5533 RS 682	5533 RS 683	5533 RS 684	5533 RS 685	5533 RS 686	5533 RS 687	5533 RS 688	5533 RS 689	5533 RS 690	5533 RS 691	5533 RS 692	5533 RS 693	5533 RS 694	5533 RS 695	5533 RS 696	5533 RS 697	5533 RS 698	5533 RS 699	5533 RS 700	5533 RS 701	5533 RS 702	5533 RS 703	5533 RS 704	5533 RS 705	5533 RS 706	5533 RS 707	5533 RS 708	5533 RS 709	5533 RS 710	5533 RS 711	5533 RS 712	5533 RS 713	5533 RS 714	5533 RS 715	5533 RS 716	5533 RS 717	5533 RS 718	5533 RS 719	5533 RS 720	5533 RS 721	5533 RS 722	5533 RS 723	5533 RS 724	5533 RS 725	5533 RS 726	5533 RS 727	5533 RS 728	5533 RS 729	5533 RS 730	5533 RS 731	5533 RS 732	5533 RS 733	5533 RS 734	5533 RS 735	5533 RS 736	5533 RS 737	5533 RS 738	5533 RS 739	5533 RS 740	5533 RS 741	5533 RS 742	5533 RS 743	5533 RS 744	5533 RS 745	5533 RS 746	5533 RS 747	5533 RS 748	5533 RS 749	5533 RS 750	5533 RS 751	5533 RS 752	5533 RS 753	5533 RS 754	5533 RS 755	5533 RS 756	5533 RS 757	5533 RS 758	5533 RS 759	5533 RS 760	5533 RS 761	5533 RS 762	5533 RS 763	5533 RS 764	5533 RS 765	5533 RS 766	5533 RS 767	5533 RS 768	5533 RS 769	5533 RS 770	5533 RS 771	5533 RS 772	5533 RS 773	5533 RS 774	5533 RS 775	5533 RS 776	5533 RS 777	5533 RS 778	5533 RS 779	5533 RS 780	5533 RS 781	5533 RS 782	5533 RS 783	5533 RS 784	5533 RS 785	5533 RS 786	5533 RS 787	5533 RS 788	5533 RS 789	5533 RS 790	5533 RS 791	5533 RS 792	5533 RS 793	5533 RS 794	5533 RS 795	5533 RS 796	5533 RS 797	5533 RS 798	5533 RS 799	5533 RS 800	5533 RS 801	5533 RS 802	5533 RS 803	5533 RS 804	5533 RS 805	5533 RS 806	5533 RS 807	5533 RS 808	5533 RS 809	5533 RS 810	5533 RS 811	5533 RS 812	5533 RS 813	5533 RS 814	5533 RS 815	5533 RS 816	5533 RS 817	5533 RS 818	5533 RS 819	5533 RS 820	5533 RS 821	5533 RS 822	5533 RS 823	5533 RS 824	5533 RS 825	5533 RS 826	5533 RS 827	5533 RS 828	5533 RS 829	5533 RS 830	5533 RS 831	5533 RS 832	5533 RS 833	5533 RS 834	5533 RS 835	5533 RS 836	5533 RS 837	5533 RS 838	5533 RS 839	5533 RS 840	5533 RS 841	5533 RS 842	5533 RS 843	5533 RS 844	5533 RS 845	5533 RS 846	5533 RS 847	5533 RS 848	5533 RS 849	5533 RS 850	5533 RS 851	5533 RS 852	5533 RS 853	5533 RS 854	5533 RS 855	5533 RS 856	5533 RS 857	5533 RS 858	5533 RS 859	5533 RS 860	5533 RS 861	5533 RS 862	5533 RS 863	5533 RS 864	5533 RS 865	5533 RS 866	5533 RS 867	5533 RS 868	5533 RS 869	5533 RS 870	5533 RS 871	5533 RS 872	5533 RS 873	5533 RS 874	5533 RS 875	5533 RS 876	5533 RS 877	5533 RS 878	5533 RS 879	5533 RS 880	5533 RS 881	5533 RS 882	5533 RS 883	5533 RS 884	5533 RS 885	5533 RS 886	5533 RS 887	5533 RS 888	5533 RS 889	5533 RS 890	5533 RS 891	5533 RS 892	5533 RS 893	5533 RS 894	5533 RS 895	5533 RS 896	5533 RS 897	5533 RS 898	5533 RS 899	5533 RS 900	5533 RS 901	5533 RS 902	5533 RS 903	5533 RS 904	5533 RS 905	5533 RS 906	5533 RS 907	5533 RS 908	5533 RS 909	5533 RS 910	5533 RS 911	5533 RS 912	5533 RS 913	5533 RS 914	5533 RS 915	5533 RS 916	5533 RS 917	5533 RS 918	5533 RS 919	5533 RS 920	5533 RS 921	5533 RS 922	5533 RS 923	5533 RS 924	5533 RS 925	5533 RS 926	5533 RS 927	5533 RS 928	5533 RS 929	5533 RS 930	5533 RS 931	5533 RS 932	5533 RS 933	5533 RS 934	5533 RS 935	5533 RS 936	5533 RS 937	5533 RS 938	5533 RS 939	5533 RS 940	5533 RS 941	5533 RS 942	5533 RS 943	5533 RS 944	5533 RS 945	5533 RS 946	5533 RS 947	5533 RS 948	5533 RS 949	5533 RS 950	5533 RS 951	5533 RS 952	5533 RS 953	5533 RS 954	5533 RS 955	5533 RS 956	5533 RS 957	5533 RS 958	5533 RS 959	5533 RS 960	5533 RS 961	5533 RS 962	5533 RS 963	5533 RS 964	5533 RS 965	5533 RS 966	5533 RS 967	553

Table 3b follows

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SCAPHOPODA

Dentalium sp. juvenile
Antalis sp. juvenile
Cadulus (Gadila) angustior

Drn E.A.

[illegible]

v = very rare (1 – 2 specimens)
r = rare (3 – 5 specimens)
f = frequent (6 – 10 specimens)
c = common (11 – 25 specimens)
a = abundant (25+ specimens)

[illegible]

Table 4b follows

BIVALVIA

v = very rare (1 – 2 specimens)
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