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MORE NOTES ON THE MARINE MOLLUSCA OF NEW SOUTH WALES.

By

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(Plates lxii-lxv.)

The marine molluscan fauna of New South Wales was catalogued by Hedley ten years ago; since then collecting has been carried on intensively and the distribution of many species determined. Mr. A. W. O'Sullivan made collections at the Richmond River and these indicated that a rich fauna with a sprinkling of northern forms exists there and that many records will be added from that area. This is confirmed by collections made at Caloundra, Queensland, by Whitley, Mort and myself, where many northern forms were commonly found and most of which probably occur in northern New South Wales. The late Mr. G. MacAndrew searched at Shellharbour, and Master Consett Davies at Bulli, while Mr. A. J. Thackway has made collections at many places along the coast, notably at Port Stephens, regarding which a separate account may be published.

The beaches around Sydney from Palm Beach in the north to Cronulla in the south have been continually searched by Whitley, Mort, Davies, and myself, and many species regarded as rare have been found to be of common occurrence. With other officers of the Museum staff, Messrs. McNeill, Livingstone, Whitley, Boardman, and Fletcher, I investigated the marine fauna of Gunnamatta Bay, Port Hacking, and obtained a large series of soft-bodied mollusca, which it is proposed to deal with separately.

In the determination of many species it has been found necessary to discuss the range of the species throughout southern Australia and a list is being prepared embodying the results of the investigations.

PRONUCULA MAYI *sp. nov.*

An excellent figure of a *Pronucula*, identified as *P. decorosa* by May,¹ shows many differences, as May himself pointed out, so I propose to name the species *P. mayi*, the type locality being Pilot Bay, South Tasmania.

CUCULLÆA CONCAMERA (*Bruguère*).

An older name for the typical species of *Cucullæa* is *labiata* Solander,² but the New South Wales form so-called can be separated

¹ May.—Proc. Roy. Soc. Tasm., 1915, p. 81, pl. viii, f. 42.

² Solander.—Catalogue of the Portland Museum, 1786, p. 185.

by its oblique shape as well as sculpture detail, and is here named *Cucullæa vaga* sp. nov., the type specimen coming from 25-30 fathoms off Norah Head, New South Wales. It measures 76 mm. in length, 60 mm. in height and 51 mm. depth of conjoined valves. The sculpture of the posterior area is coarser, the hinge area is narrower, and the silky periostracum is much denser than that of the northern species.

DENTICOSA gen. nov.

This generic name is proposed for *Philobrya cuboides* Verco, from Backstairs Passage, South Australia, the strong teeth developed being sufficient to define the genus. Finlay³ has published some notes I made on the dismemberment of the *Philobrya* group, showing that the type of *Hochstetteria* Velain must be the species Velain described fully, and that was *H. aviculoides*. In order to prohibit any discussion on this point I now record that this was legitimately designated as type by Kobelt.⁴

Therefore *Philobrya* must be dismissed from the New South Wales list, and *Cosa* Finlay, introduced from my notes, and *Hochstetteria* Velain will replace it, the latter for *inornata* Hedley, the former, *Cosa*, for the other three species, *parallelogramma*, *pectinata*, and *tatei*, all of Hedley.

PINCTADA VULGARIS (*Schumacher*).

In every case an attempt to name a shell leads in many directions, and the apparently simple task becomes a very complex problem. Thus the collection of some fine large specimens of *Pinctada* at Gunnamatta Bay necessitated their comparison with the basis of the name above cited, when much discrepancy was at once noted. Shells, apparently quite different, which I secured at the Kermadecs, had been similarly named, as had Lord Howe Island specimens, and even the Victorian shell. A number from Caloundra, south Queensland, suggested definitely that more than one species occurred there, and reference to Reeves' Monograph showed quite a long series of names available.

The name apparently best suited to the Sydney shell is *Avicula perviridis* Reeve,⁵ for an Australian species collected by Strange.

Family LATERNULIDÆ.

Two species of the genus *Laternula*, formerly known as *Anatina*, are included in Hedley's New South Wales list, both described by Reeve, namely *creccina* and *prolongata*. In the Queensland list

³ Finlay.—Trans. New Zeal. Inst., lvii, p. 449, 1926.

⁴ Kobelt.—Illustr. Conchylienbuch, Lief. xi, 1884, p. 364.

⁵ Reeve.—Conch. Icon., x, pl. viii, sp. and f. 20, Mch., 1851.

four had been recognized, *faba* Reeve, *gracilis* Reeve, *prolongata* Reeve, and *vagina* Reeve. May allowed two in Tasmania, *creccina* Reeve (= ? *attenuata* Reeve) and *tasmanica* Reeve, and the same two had been admitted by Pritchard and Gatliff, *recta* Reeve being included as a synonym of the latter. It will be noted that all the references are to Reeve,⁶ so the data may be here cited in order of arrangement.

Anatina anserifera ex Spengler, pl. ii, species 8, Dec., 1860.—Tasmania.

gracilis, sp. 9, Dec., 1860.—Moreton Bay, Australia.

marilina, sp. 10, Dec., 1860.—Australia.

creccina, sp. 12, Dec., 1860.—Adelaide, South Australia.

attenuata, pl. iii, sp. 16, Feb., 1863.—Sydney.

constricta, pl. iii, sp. 18, Feb., 1863.—North Australia.

tasmanica, pl. iii, sp. 20, Feb., 1863.—Tasmania.

faba, pl. iv, sp. 22, Feb., 1863.—Brisbane, east coast of New Holland.

recta, pl. iv, sp. 24, Feb., 1863.—Port Phillip, Australia.

vagina, pl. iv, sp. 26, Feb., 1863.—Moreton Bay, Australia.

gracilis, pl. iv, sp. 28, Feb., 1863.—Port Curtis, Australia.

(Erratum to Index, pl. iv, sp. 28.—For *A. gracilis* Reeve, read *A. prolongata* Reeve.)

Anatina laterna Lamarck was figured on pl. i, sp. 7, February, 1863, from north Australia, a different shell being regarded as *Solen anatinus* Linn., and called *Anatina subrostrata* Lamarck, sp. 6, from an unknown locality.

A good series collected at Gunnamatta showed that, while there was individual variation, differences associated with geography could be observed. For the New South Wales species Hedley's names must be rejected, *creccina* being the South Australian shell, which also occurs in north-west Tasmania: *prolongata* was introduced for Reeves' second *gracilis* and nothing like it has been seen from New South Wales, whereas shells from Shellharbour are like the first *gracilis* of Reeve, which, of course, retains its name. The figure of *marilina* is more like the Sydney "*creccina*," but, as has been suggested, it is probably a juvenile of *tasmanica*. The Sydney *attenuata* has not yet been seen by me but it certainly is not a synonym of *creccina*. Reeves' species *recta* is also not a synonym of *tasmanica*, but should be maintained, and specimens from South Australia agree fairly well with the Victorian shells. With regard to the generic name, I have shown that *Laternula* must replace *Anatina* Lamarck, and at the same place I recorded that *Anatina* Lamarck dated only from 1818 and was therefore later, not earlier, than *Anatina* Schumacher 1817, and that therefore the latter could

⁶ Reeve.—Conch. Icon., xiv, *Anatina*, 1860-1863.

be used. As usual with vernacular names, more study necessitates readjustment, and I have found that *Anatina* Lamarck was recorded by Bosc⁷ a year earlier than Schumacher, and that he wrote "Le Solen canard sert le type à ce genre." This does not make *Anatina* displace *Laternula*, but it does disqualify *Anatina* Schumacher, and allow usage of *Labiosa* "Schmidt" Möller, Möller⁸ having published Schmidt's MS. substitute for *Anatina* Schumacher.

Family PERIPLOMATIDÆ.

Hedley⁹ introduced a new species dredged in 75 fathoms (really 45 fathoms) off Sydney as a member of the genus *Periploma*, but the reference was merely due to a very superficial resemblance, probably following Crosse and Fischer's attachment of another Australian species to that Palearctic genus. In the latter case Hedley had transferred Crosse and Fischer's species to another Palearctic genus, which must also be dismissed from our fauna.

It is therefore necessary to introduce two new generic names for these species, viz., *Pendaloma* for *Periploma micans* Hedley, and *Offadesma* for *Periploma angasi* Crosse and Fischer.¹⁰ There is variation seen in the latter species when specimens from New Zealand, New South Wales, and Tasmania are contrasted, but longer series are necessary to determine its value. In the South Australian fauna occurs *Cælon patulus* Tate,¹¹ but as the generic name is invalid, a new name, *Frenamya*, is here proposed for Tate's species.

Family VERTICORDIIDÆ.

For deepwater shells of curious design the genus *Verticordia* has been brought into use, and it should be at once rejected. The name was proposed by Sowerby¹² for a fossil, and it seems unwise to class varied styles of living shells with it. Three distinct types have already been found in Australian waters, and excellent figures have already been provided by Hedley, the prickly sculptured, strongly ribbed *ericia* contrasting sharply with the smooth granose *vadosa*, the hinges also differing notably. The "*australiensis*" form is even more remarkable, while the New South Wales shell so determined demands separation. I therefore introduce the new specific name *cambrica* for the shell figured by Hedley¹³ from eighty fathoms off Narrabeen, which he doubtfully associated with *australiensis* Smith from off Raine Island in 155 fathoms, an almost impossible identity, which Hedley recognized. It is necessary to

⁷ Bosc.—Nouv. Dict. d'Hist. Nat., nouv. ed., i, p. 492, 1816.

⁸ Möller.—Isis (Oken), 1832, col. 136.

⁹ Hedley.—Rec. Austr. Mus., iv, 1901, p. 25, f. 7.

¹⁰ Crosse and Fischer.—Journ. de Conch., xii, 1864, p. 349.

¹¹ Tate.—Trans. Roy. Soc. South Austr., ix, 1887-8, p. 60, pl. xi, f. 1, April, 1889.

¹² Sowerby.—Min. Conch., p. 639, 1844.

¹³ Hedley.—Rec. Austr. Mus., vi, p. 303, pl. lvi, figs. 38-39, Jan. 23, 1907.

differentiate this type by the new generic name *Vertisphaera*, the New South Wales *cambrica* being selected as type.

The curious little solid granose shell (*vadosa*) with the very heavy hinge attracts attention and is evidently derived from an entirely different source from the preceding form, and the animal may prove very different indeed. I propose *Vertambitus* for the species *vadosa*, well illustrated by Hedley.¹⁴ For the very beautiful little *ericia* the generic name *Spinospella* is proposed, the wonderful prickly sculpture being associated with the suppression of the lunule so prominent in the preceding groups and with the compression of the hinge.

Hedley¹⁵ described *Verticordia rhomboidea* from 100 fathoms off New Zealand, suggesting that it might fall under Dall's sub-genus *Haliris*, but noting its aberrant occurrence. He¹⁶ later corrected the specific name to *setosa*, and also added it to the New South Wales fauna from 250-300 fathoms. Examination shows that the Australian shell can be easily separated, being smaller, more convex, more numerous ribbed. It is here named *Setaliris accessa*.

Genus LYONSIELLA.

When Hedley was working out the novelties secured on his deep sea dredging trips he was always eager to refer them to already named genera with somewhat unsatisfactory results. Thus careful comparison shows the resemblances to be purely superficial, and that our shells are closely related to our fossil species, and consequently no stress can be laid upon such shell features as shape and weak teeth formation. Therefore, for the species Hedley named *Lyonsiella quadrata*¹⁷ I propose the new generic name *Proagorina*, good figures already being given by him. The reference to the family *Verticordiidae* is merely tentative.

Family POROMYACIDÆ.

Although Tate¹⁸ had proposed a genus *Ectorisma*, with a specific name *granulata*, Hedley decided that the species should be relegated to *Poromya*, and, as the specific name had been previously utilized in that genus, renamed Tate's species *Poromya illevis*. The association is here rejected, and, consequently, Tate's genus must be revived, and, moreover, Tate's specific name must be reinstated.

Hedley and Petterd had previously introduced a new species dredged in 250 fathoms off Sydney as *Poromya undosa*, but that species is not congeneric with the type of *Poromya*, nor even with

¹⁴ Hedley.—Rec. Austr. Mus., vi, p. 303, pl. lvi, figs. 34-37, Jan. 23, 1907.

¹⁵ Hedley.—Trans. New Zeal. Inst., xxxviii, 1905, p. 71, pl. ii, figs. 13-14.

¹⁶ Hedley.—Rec. Austr. Mus., vi, 1907, p. 303.

¹⁷ Hedley.—Rec. Austr. Mus., vi, p. 302, pl. lvi, figs. 31-33.

¹⁸ Tate.—Trans. Roy. Soc. South Austr., xv, 1892, p. 127, pl. i, f. 3, 3a.

Ectorisma, and a new generic name must be proposed for it alone; it is therefore named *Questimya*. In this case, as in all others cited in connection with Hedley's studies, inimitable figures are always available. My late friend, in discussion on these matters, sagely remarked: "Even if my generic associations are not tenable, my figures will always hold good, and that is more important to me." Thus the non-recognition of his groupings was foreshadowed by him, and he was content to do the harder work, the complete illustration of the species secured. It must be admitted that the perfect illustration of the species has made the work of his successors very much easier than it otherwise would have been, and certainly very much easier than his own task.

Family LUCINIDÆ.

Interesting but perplexing shells are the Lucinid bivalves, and the usage of *Codakia* for many species superficially dissimilar, and *Lucinida* for three others, even less closely related, compelled study.

Codakia was proposed for the West African "Codok," and this does not correlate well with any New South Wales species, *simplex* Reeve being most like. *Jagonia* has been used for the smaller species, but it can be rejected without much trouble.

The large *rugifera* Reeve is here separated as *Pexocodakia*, the hinge being more spread out, the cardinal tooth more oblique, the muscle scars more elongate, the shell more compressed, and the sculpture much coarser. For the species known as *bella* Conrad there are many alternatives, but there also seems to be more than one species, while the following extract is quoted to illustrate one view, which, if accepted as written, would necessitate the recognition of many more "species." When describing *Codakia bella delicatula* from Riukiu I., Pilsbry¹⁹ wrote: "Compared with *C. bella* this form is smaller, more inflated, the diameter decidedly exceeding half the length, with finer, more delicate sculpture. Typical examples of the widespread *Codakia (Jagonia) bella* Conr., occur in Japan, having been sent from Hirado, Hizen, by Mr. Hirase. It has also been reported by Dunker and others as *Lucina divergens* Phil., a name which Dall has shown to be synonymous. Reeve's *Lucina fibula* is apparently a composite of two species, but the oriental form included by him and by Adams and Reeve under that name is doubtless identical with *C. bella* Conrad." The name *bella* has been rejected recently, and this matter will be dealt with in connection with Queensland material, where greater differences are commonly seen in a series than those above indicated by Pilsbry. The New South Wales shells do not agree even with the Queensland

¹⁹ Pilsbry.—Proc. Acad. Nat. Sci. Philad., 1905, p. 555.

ones, and a heavily sculptured form is hereafter described as *Epicodakia gunnamatta* sp. nov., the generic name being introduced to cover these small Lucinid shells such as *minima* T. Wds., *quadrata* Tate, and others. *Lentillaria* Schumacher,²⁰ proposed for *Venus punctata* alone, may be used for *simplex* Reeve, but these large species will be later re-examined closely, as there may be cases of convergence as in *rugifera* Reeve above separated. It may be noted that Gray²¹ misspelt the name *Lenticularia*. As a representative of a very different group which has no laterals is the species Hedley²² figured as *Codakia pisidium* Dunker and which is here renamed *Sydlorina symbolica*, the resemblance to Dunker's species being very slight, as Hedley observed. Similar species range into Queensland and also into southern Australia.

Another well known Lucinid which has no laterals is *ramsayi* Smith, which Hedley placed under *Lucinida*, a generic name applied to a very different South American bivalve. This species, *ramsayi*, is of vitreous texture, subcircular, has an impressed lunule, well defined concentric sculpture, and a small cardinal; it is here differentiated with the new generic name *Monitilora*. This also occurs in Queensland.

When Smith described *Lucina jacksoniensis* he doubtfully referred it to *Loripes* and contrasted it with "*Lucina parvula* Gould, from the same locality," this being the species I have above named *Sydlorina symbolica*. The curious feature of the "*jacksoniensis*" type of shell is the crumpled appearance, the texture being stouter, the hinge showing a strong cardinal and an obscure lateral. Hedley lately referred this species to the earlier *Loripes assimilis* Angas,²³ but Angas' description and figure do not agree. It may be remarked that Angas did not know the exact locality of his species whence his supposed New South Wales specimens were found, but added Hobson's Bay, Port Phillip. I propose the new generic name *Wallucina*, naming *Lucina jacksoniensis* Smith as type.

Still another group must be introduced for *Lucinida hilaira* Hedley, as this species is a crass shell, though of somewhat vitreous substance, has definite, though small laterals, a small cardinal, small muscle scars and irregular shape. This may be generically named *Nevenulora*. Hedley noted "Cooke erroneously cites from Port Jackson, *Lucina globosa* Forskål," and thereupon omitted the species altogether, though the shell occurs, only the name being in dispute. The shell Cooke²⁴ referred to is here named.

²⁰ Schumacher.—Essai nouv. Syst. Vers test., 1917, pp. 49, 147.

²¹ Gray.—Proc. Zool. Soc. (Lond.), 1847, p. 196.

²² Hedley.—Proc. Linn. Soc. N.S.W., xxxix, 1914 (1915), p. 699, pl. lxxix, figs. 25-28.

²³ Angas.—Proc. Zool. Soc. (Lond.), 1867 (1868), p. 910, pl. xlv, f. 8.

²⁴ Cooke.—Ann. Mag. Nat. Hist., (5) xviii, 1886, p. 99.

CAVATIDENS OMISSA gen. et sp. nov.

(Pl. lxiii, figs. 3, 4.)

Shell small, globose, subequilateral, equivalve, umbones approximate.

Colour white. The sculpture consists of very fine, though well marked growth lines, no radials being present. Lunule simply impressed. The hinge shows no teeth, only a long thin internal ligament. Muscle scars well marked, the anterior elongate, pallial line continuous.

Length.—20 mm.; height 18 mm.; depth of single valve 8 mm.

Habitat.—New South Wales. Type from Gunnamatta Bay, Port Hacking. This is one of the toothless Lucinids which have been called *Loripes* or *Cryptodon*, and many species have been confused through this lack of teeth. It appears obvious from comparison of many specimens that these toothless forms are degenerates from toothed shells, and have no close relationship. This matter will be dealt with in connection with Queensland mollusca, in which very different shells have been brought together merely on account of a toothless hinge.

EPICODAKIA GUNNAMATTA sp. nov.

(Pl. lxiv, figs. 6, 7.)

Shell small, rather obese, solid, subcircular, subequilateral, lunule well impressed. Colour dirty white, umbones yellowish. The sculpture consists of well marked radials spreading a little laterally, and is concentrically very closely wrinkled, growth stages being strongly marked. Internally dirty white, the muscle scars prominent, anterior elongate. Hinge shows deeply sunk ligament pit, and small but strong cardinal, strong laterals, distant, deep lunule intervening on anterior side. The radials on the immature shell number about twenty-five, but increase with age to between sixty and eighty.

Length.—22 mm.; height 21 mm.; depth of single valve 9 mm.

Habitat.—New South Wales. Type from Gunnamatta. Some specimens are not so strongly sculptured and may be referable to another species; series have been collected for study in that direction.

EPICODAKIA CONSETTIANA nom. nov.

This name is introduced for *Lucina minima* Ten. Woods,²⁵ which has been well figured by May,²⁶ and which must be added to

²⁵ Ten. Woods.—Proc. Roy. Soc. Tasm., 1875 (1876), p. 162.

²⁶ May.—Proc. Roy. Soc. Tasm., 1902 (1903), p. 114, fig. 12 in text.

the New South Wales fauna. Master Consett Davis found this species at Bulli and separated it from *quadrata* Angas, with which species it had been confused previously.

BATHYCORBIS gen. nov.

This name is introduced for the deepwater shell Hedley²⁷ described as *Chione despecta*, and afterwards transferred to *Corbis*, but it has little to do with that huge coral-dwelling mollusc.

Family THYASIRIDÆ.

One by one the species credited with world-wide distribution have been studied with the same result, and a species that had apparently defied disruption was *Thyasira flexuosa* Montagu, a British shell which appeared in Hedley's New South Wales List. Examination has shown that it had probably the smallest claim of any to recognition as a widely distributed species, as the figures hereafter given will prove. Apparently Brazier²⁸ is responsible for the introduction of this species to the Australian list, when he identified specimens from off Port Stephens with the British shell, and added South Tasmania as a locality, also observing: "The three well-known varieties, *rotunda*, *polygona*, and *sarsii*, are found off the New South Wales coast." That remark alone is sufficient to query the determination, as those varieties do not occur together in one locality in the Northern Hemisphere, and as far as I can trace Brazier had not specimens for criticism.

Examination of series from New South Wales shows two species to have been confused and these are referable to two distinct genera, judging from shell features, and it may be observed that the animals of the Palearctic forms differ, though showing only slight shell discrepancies. The South Australian shell is still more different and consequently three species are here described, and there are probably others yet to be recognized.

The little shell Hedley²⁹ named *Thyasira albigena*, which he suggested might be referred to the subgenus *Axinulus*, can be at once separated as the type of a distinct genus, *Genaxinus*.

PARATHYASIRA RESUPINA gen. et sp. nov.

(Pl. lxiii, fig. 5.)

Shell small, thin, inequilateral, equivalve, umbones touching, subcircular, anterior side nearly straight enclosing a deep, long ligamental pit, ligament semiexternal; posterior side concave with an ill-defined elongate lunule; ventral margin rounded; a double

²⁷ Hedley.—Proc. Linn. Soc. N.S.W., xxix, 1904, p. 193, pl. 10, figs. 35-38.

²⁸ Brazier.—Proc. Linn. Soc. N. S. Wales (2), ix, 1894, p. 725.

²⁹ Hedley.—Rec. Austr. Mus., vi, 1907, p. 363, pl. lxvi, fig. 45.

very shallow fold present. Sculpture of very fine radial lines, with a delicate brownish silky periostracum present. Dead shell translucent, muscle scars indistinct. Hinge toothless.

Length.—5.5 mm.; height 5.5 mm.; depth of conjoined valve 3.5 mm.

Habitat.—New South Wales. Type from 63-75 fathoms off Port Kembla, New South Wales. This genus also occurs in Neozelanic waters, a specimen being in this Museum from 110 fathoms off Great Barrier Island; this specimen is much larger, measuring 9 mm. × 9 mm., and the radial sculpture is missing, the concentric growth lines becoming more noticeable; this may be called *Parathyasira resupina neozelanica* subsp. nov. until longer series are secured.

PROTHYASIRA PERONIANA *gen. et sp. nov.*

(Pl. lxiii, fig. 8.)

Shell small, thin, translucent, inequilateral, equivalve, convex, height greater than width, anterior side deeply triply sinuate, ventral rounded, posterior straight, a little incurved, a broad excavate lunule present. The folds are very deep and the ligament socket thin and practically internal, a small cardinal being developed in the right valve. No radial lines present but indistinct radial waves can be distinguished anteriorly and posteriorly. Muscle scars indistinguishable.

Length.—5 mm.; height 6 mm.; depth of single valve 3 mm.

Habitat.—New South Wales. Type from 63-75 fathoms off Port Kembla, New South Wales. This genus also occurs in New Zealand, specimens sent by Suter from 18 fathoms, Stewart Island, being of this style, smaller, more circular, folds less deep, lunule shallower and cardinal less developed; height 5.5 mm., length 5 mm. This may be called *Prothyasira peroniana peregrina* subsp. nov.

PROTHYASIRA ADELAIDEANA *sp. nov.*

(Pl. lxiii, figs. 6-7.)

Shell large for the genus, thin, very inequilateral, equivalve, convex, height greater than length, anterior side triply sinuate, ventral rounded, posterior incurved and folded, lunule comparatively short and deep. The folds are deep, but not so deep as in preceding, ligament socket broad, no cardinal present. Growth lines constitute the only sculpture save a couple of obsolete distant waves parallel to the folds. There is a fold succeeding the lunular area, a feature absent in the preceding species. Through the much larger size of the shell the muscle scars can be clearly seen.

Length.—15 mm.; height 18.5 mm.; depth of single valve 6 mm.

Habitat.—South Australia. Type dredged in 100 fathoms 40 miles south of Cape Wiles.

This is a fine species and is easily recognized by the shortness of the unfolded side, where, however, a fold is developing. Apparently in these animals there is a tendency to develop folds throughout, as there is a succession of folds more or less deep in the series here described. Another species, which will be figured later, shows the distant waves observed in the above, much more developed and practically secondary folds, the post-lunular fold also being present. This shell is flatter, thinner, and the ventral edge is sinuate, showing the wave formation. No cardinal tooth is present and the ligamental socket is almost marginal. The height is 12 mm.; length 11 mm.; depth of conjoined valve 4 mm. This may be called *Prothyasira benthicola* sp. nov., the shell coming from 470 fathoms 33 miles east by south from Green Cape, New South Wales.

VIRMYSELLA SPERNAX *gen. et sp. nov.*

(Pl. lxiv, figs. 10-12.)

Angas³⁰ described *Mysella anomala* and, introducing a new genus, he gave a good figure. For some unknown reason this figure was depreciated, and the present species, common as valves on the Sydney beaches, was determined as Angas' species, which, however, was dredged in Sydney Harbour in 12 fathoms on a muddy bottom, where it still occurs.

Shell small, rather solid, inequilateral, equivalve, longer than high, rather flattened. Colour white. Sculpture consists of growth lines only. Anterior side a little truncate, straight, posterior rounded, ventral rounded. Hinge with a deep ligament socket and a projecting sharp cardinal.

Length.—14 mm.; height 10 mm.; depth of single valve 3 mm.

Habitat.—New South Wales. Type from Manly. Common as valves on all the ocean beaches round Sydney.

MERIDOSINIA NEDIGNA *gen. et sp. nov.*

(Pl. lxiv, figs. 4-5.)

A not uncommon little Dosinid was collected at Gunnamatta and valves of the same species have been found on the Sydney beaches. It may have been regarded as *scabriuscula* Philippi,³¹ but has little to do with it, and, moreover, Philippi's shell was described from Loandá.

³⁰ Angas.—Proc. Zool. Soc. (Lond.), 1877, p. 176, pl. 26, f. 22.

³¹ Philippi.—Abbild. Besch. Conch. ii, p. 229, pl. 6, f. 2.

Shell small, solid, subequilateral, equivalve, white, subcircular, somewhat compressed, lunule small, narrow, rather deeply sunk, escutcheon long, defined by a definite ridge. Colour creamy white. Sculpture consists of flattened closely set ridges, eighty to a hundred in number, the juvenile area showing the ridges still regularly. Hinge strong, rather narrow, muscle scars large, pallial sinus medium, angulate, and almost horizontal, pallial line very short.

Height 26 mm.; length 26 mm.; depth of conjoined valves 15 mm.

Habitat.—New South Wales. Type collected at Gunnamatta.

SUNETTINA *Jousseaume*.

I concluded³² that *Sunettina* *Jousseaume* could be used generically for the Australian species previously classed under *Sunetta*. This was following Dall,³³ who had proposed *Solanderina* for *S. solandri* Gray, and allowed *Jousseaume*'s name as valid. Looking up Kobelt's *Illust. Conchylienbuch* in another connection, I was amazed to see the name *Sunettina*,³⁴ and, reading, found that he quoted the name as of Pfeiffer, introduced for *S. solandri* Gray. The name does not appear in any nomenclator or record as of Pfeiffer or Kobelt, but undoubtedly the name is valid and will replace *Solanderina* Dall, and invalidate *Sunettina* *Jousseaume*.

I therefore propose *Sunemeroe* gen. nov., naming *Sunetta adelinae* Angas³⁵ as type.

Genus ANTIGONA.

Under this generic name eight species were recognized in Hedley's New South Wales List, *viz.*, *A. chemnitzii* Hanley, *A. laqueata* Sowerby, *A. lamellaris* Schumacher, *A. gallinula* Lamarck, *A. lagopus* Lamarck, *A. marica* Linné, *A. scabra* Hanley, and *A. striatissima* Sowerby. I³⁶ showed that the correct name of the last named was *cardioides* Lamarck, and introduced a distinct generic name, *Chioneryx*, for it.

The type of *Antigona* is *lamellaris* Schumacher, but the species so called in New South Wales differs from the tropical Queensland one, which would be nearer the typical form in shape and detail of sculpture, and may be called *A. lamellaris moderata* subsp. nov., the height being more in proportion to the length, the concentric ridges less developed, and the radials less numerous, the escutcheon more marked, the lunule shorter.

³² Iredale.—Proc. Linn. Soc. N. S. Wales, xlix, 1924, p. 209.

³³ Dall.—Proc. U.S. Nat. Mus., xxvi, 1902, p. 350.

³⁴ Kobelt.—Illustr. Conchylienbuch, 10th lief., p. 335, pl. 98, f. 17, 1883.

³⁵ Angas.—Proc. Zool. Soc. Lond., 1867 (1868), p. 909, pl. 54, f. 5.

³⁶ Iredale.—Proc. Linn. Soc. N. S. Wales, xlix, 1924, p. 210.

When he proposed *Periglypta*, with type *puerpera* L., Jukes-Browne³⁷ wrote: "Two other species, *V. laqueata*, Sow., and *V. chemnitzii*, Hanley, differ from all the rest in the following particulars: they have smooth nymphs, a small angular sinus, and the pedal scar is confluent with that of the adductor." Probably, as in many other cases, he was only writing about the traditional identification of the species and thus errors may be magnified. I have already described³⁸ the Sydney shell known as *laqueata* Sowerby as a distinct genus and species, *Proxichione materna*, and I now propose to separate the species known as *chemnitzii* under the new generic name *Tigammona*, the new species *T. persimilis* being named as type. It may be noted that these groups appear among the known fossils of southern Australia, with scarcely any differentiation. Thus Pritchard many years ago described a shell obviously the ancestor of my *P. materna*.

TIGAMMONA PERSIMILIS gen. et sp. nov.

(Pl. lxii, figs. 1-2.)

Shell small for this series, elongate, oval, inequilateral, equivalve, anterior side produced, straight, posterior short, sloping, ventral shallowly rounded. Colour white, rayed with brown splashes, rays massing on the anterior side, lunule brown, elongate, narrow, escutcheon long, narrow.

Sculpture, concentric upstanding ridges, coarser laterally, latticed by radial ribs, which become more pronounced on the anterior slope; the ridges number about thirty, not counting the closely set umbonal series. At the ventral edge they are duplicated, indicating rest periods and adult age; the radials number about fifty, the interstices wider than the ribs, and all over-run with very fine concentric striation; the lunule is radially rayed as is also the escutcheon. The hinge is long and narrow, the teeth proportionately strong, the muscle scars large, the pallial sinus sub-angulate, the ventral edge minutely denticulate.

Length 31 mm.; height 23.5 mm.; depth of single valve 10 mm.

Habitat.—New South Wales and south Queensland. Type collected on Manly Beach, New South Wales.

This is more elongate than the so-called *chemnitzii* of our beaches, and is apparently full grown, whereas *chemnitzii* grows to 60 mm. and more in length; the brown lunule is distinctive, while the pallial sinus is less angulate and comparatively larger.

³⁷ Jukes-Browne.—Proc. Malac. Soc. Lond., xi, p. 72, 1914.

³⁸ Iredale.—Austr. Zool., v, 1929, p. 339.

VEREMOLPA ETHICA *gen. et sp. nov.*

(Pl. lxii, figs. 3-4.)

The little shell, known as *Antigona scabra* Hanley³⁹ in New South Wales, differs at sight from the Philippine Islands shell in proportions and detail of sculpture. It is obviously not referable to *Antigona* in a broad sense even, so is here introduced with a new generic name.

Shell very small for this series, inequilateral, inequivalve, a little swollen, anterior side produced, sloping, meeting the ventral edge, which is rounded somewhat angularly, posterior side short, straight, rather roundly truncate, lunule large, concentrically ribbed, escutcheon missing.

Colour creamy white, umbonal area purplish, interior pale purplish brown, ventral edge cream.

Sculpture consists of distant concentric ridges, about twenty in number, the umbonal striæ not counted; these are subordinated to the radials, which are thick, with narrow interstices. About twenty clearly defined rays can be discerned on the juvenile shell, but these split into two, three, or four as the shell grows, so that fifty to sixty may be counted at the ventral margin. Internally the ventral margin is correspondingly denticulate, but the anterior and posterior sides are minutely crenulate. The muscle scars are comparatively very large, the pallial sinus short and rounded; the hinge teeth are compressed, with no sign of an anterior lateral.

Length 12 mm.; height 10 mm.; depth of conjoined valves 8 mm.

Habitat.—New South Wales and South Queensland. Type from Port Stephens, New South Wales.

ARCOPAGIA STRIATULA *Lamarck*.

I⁴⁰ drew attention to the fact that this name could not be maintained but offered no alternative, as I had been unable to examine local shells attributed to the species. I have now seen specimens attributed to the species by Brazier, who added it to the New South Wales list, and find these are referable to *Pseudarcopagia botanica* Hedley, the fine radial striæ being obsolete. The name can now be altogether dismissed. While investigating this matter I examined the species *Tellina subelliptica* Sowerby,⁴¹ which Hedley had also referred to *Arcopagia*, and find a curious little Tellinid, showing no resemblance to any species otherwise referred to *Arcopagia*. The hinge is similar to that of *Pinguitellina* as figured by me,⁴² but the pallial sinus differs as well as the texture. It does not agree with

³⁹ Hanley.—Proc. Zool. Soc. (Lond.), 1844, p. 161.

⁴⁰ Iredale.—Proc. Linn. Soc. N. S. Wales, xlix, 1924, p. 211.

⁴¹ Sowerby.—Conch. Icon, xvii, 1867, pl. xxxix, f. 220.

⁴² Iredale.—Rec. Austr. Mus., xvi, 1927, pl. v, f. 8.

Pseudarcopagia as figured by Hedley,⁴³ so is here distinguished with the new generic name *Punipagia*.

DELTACHION VIRILIS *gen. et sp. nov.*

(Pl. lxii, figs. 5-6.)

When Smith⁴⁴ described *Donax brazieri* from the Richmond River, New South Wales, he added that trigonal specimens were also met with. On Manly Beach trigonal shells are not uncommon, and, traditionally identified, they were regarded as typical until Mr. A. W. O'Sullivan brought some shell grit from the Richmond River, and elongate shells were sorted out. The shells were fairly common and the elongate shells were regarded as novel until the original account was criticised, when it was found that this is not the case. From the Sydney beaches only the trigonal species is found, and from the north of New South Wales and South Queensland both species occur together. The northern Queensland shells will be dealt with later, but in South Australia occurs a fine species which has been regarded as *brazieri*, but which is very easily differentiated.

This group of species is obviously separable from the southern *Donax deltoides* series which does not agree with the type of *Donax*, nor with *Chion*. The only correct method of nomination is the introduction of generic names for the Donacoid series in Australian waters, and I therefore name the *brazieri* series *Deltachion*, selecting *D. virilis* as type. At the same time I propose *Plebidonax* *gen. nov.*, for the *deltoides* group, and *D. veruinus* Hedley must be named *Tentidonax* *gen. nov.* as it is most aberrant; the elongation of this last-named at first sight conceals its Donacoid affinity, while its hinge is similarly spread. The genus *Deltachion* is formed for small Donacoid shells with abruptly truncate posterior side, strongly keeled; cardinal tooth bifid, anterior lateral distant, posterior lateral approximate; ligament rather small, external, pallial sinus very large, extending three-quarters the length of the shell and more than half the depth. The genus *Plebidonax* comprises large shells, the posterior side obsoletely keeled and less truncate; cardinal tooth massive, bifid in right valve, two cardinals in left valve, anterior lateral obsolete, posterior lateral distant, ligament external, sunken, very large; pallial sinus large but extending only half-way across and less than half the height of the shell; sculpture on posterior portion weak.

The species *Deltachion virilis* may be described thus: Shell small, trigonal, nearly equilateral, equivalve, posterior side angularly truncate, anterior side produced. Colour pinkish white, tinged towards the umbones with purple; interior white with dull purplish

⁴³ Hedley.—Proc. Linn. Soc. N. S. Wales, xlvi, 1923, pl. xxxi, figs. 17-18.

⁴⁴ Smith.—Proc. Zool. Soc. (Lond.), 1891, p. 491, pl. 40, f. 10.

blotches at times. The sculpture consists of grooves obsolete anteriorly but becoming pronounced towards the posterior angle; on the posterior side they are very marked and crossed with fine radials more developed near the umbonal region; these lines cause a crenulation along the posterior angle. Ventral edge gently rounded, markedly denticulate within. Hinge very compressed; pallial sinus very large.

Length 15 mm., height 13 mm., depth of single valve 5 mm.

Habitat.—New South Wales and south Queensland. Type from Manly Beach, New South Wales.

A toptype of *D. brazieri* Smith is figured for comparison (pl. lxii, fig. 8) when the differences are seen to be that the typical *brazieri* is altogether more elongate, with less height, and shorter posterior side; the sculpture is also less marked posteriorly.

The South Australian shell differs in size and shape, the swelling of the ventral edge being a notable feature.

DELTACHION ELECTILIS *sp. nov.*

(Pl. lxii, fig. 7.)

Shell larger than preceding, more flattened, posterior angle less pronounced, anterior side more produced and ventral edge swollen medially. Colour creamy white, sometimes with pinkish rays. Sculpture less developed but of exactly the same nature, the posterior angle not crenulate and the posterior side a little more extended. Internally there is sometimes a dull purple blotch on the otherwise white interior; ventral edge strongly denticulate.

The hinge is a little more spread out and the pallial sinus is not so rounded and comparatively shorter and less deep.

Length 20 mm., height 15 mm., depth of conjoined valves 8 mm. Valves of larger size have been seen.

Habitat.—South Australia. Type from St. Vincent's Gulf. Apparently the same species occurs in south-west Australia, but a different one in north-west Australia.

MACTROID SHELLS.

Six species of *Macra* and one of *Spisula* are recognized by Hedley under the names *M. contraria* Reeve, *M. eximia* Reeve, *M. jacksonensis* Smith, *M. ovalina* Lamarck, *M. parkesiana* Hedley, *M. pusilla* Adams, and *S. trigonella* Lamarck. In order to determine the species of *Macra* it was necessary to review the whole of the Australian species, and some conclusions have already been published⁴⁵ in connection with Queensland forms. The southern

⁴⁵ Iredale.—Mem. Queensland Mus., ix, 1929, pp. 267-8.

Australian species offer different problems and a preliminary re-grouping of the species is here proposed, and new generic names are here introduced, the generic name *Maetra* belonging to a Palæarctic species not comparable with our forms, while *Spisula* is even less related to the southern species. One of the best known groups is typified by the species known as *contraria* in New South Wales and *rufescens* in southern Australia. The generic name *Austromactra* is proposed to cover the series, and the south Queensland species is hereafter described as *A. caloundra*. A series of small shells with a different hinge is here named *Nannomactra*, the type being *Maetra jacksonensis* Smith⁴⁶ who has well figured and described the hinge.

Another series is represented by the shell Hedley described as *Maetra parkesiana* and the hinge was also well figured and described.⁴⁷ The adult of that species differs in shape and will be figured in a later communication, but the genus is here named *Electomactra*. The species commonly known as *Maetra ovalina* Lamarck, but which is not Lamarck's species, and which is described and figured hereafter, belongs to this genus.

A very curious little Mactroid species living in South Australia has also been well figured, and the hinge described, and it is only necessary to introduce the generic name *Diaphoromactra* for it, the sole species being Tate's *H. versicolor*.⁴⁸

Under the name *Spisula parva* Petit, Hedley arranged a series of names, regarding the forms, which had been differentiated as only individual varieties. An earlier name, *trigonella* Lamarck, was found to refer to this style of shell, and was therefore preferred. There can be no doubt that more than one species is represented locally, and, moreover, geographical variation is evident. Consequently *trigonella* can again be rejected, as Lamarck described this from King George's Sound, West Australia. For the small trigonal form Petit's name *parva* can be revived, while Angas⁴⁹ *cretacea* can be used for the second species, which was later named *fluviatilis* by the same author,⁵⁰ both figures being quite characteristic. The two species *parva* and *cretacea* can be collected in Port Jackson, and are easily separable. A name for the Sydney form of *parva* was given by Angas, viz., *producta*, in the earlier paper quotation above. It is even possible that the two species are not congeneric, but for the present they may be classed together under the new generic name *Notospisula*, the type being named as Petit's species.

⁴⁶ Smith.—Rep. Sci. Res. Challenger, xiii, 1885, p. 62, pl. 5, figs. 9a-b.

⁴⁷ Hedley.—Proc. Linn. Soc. N. S. Wales, 1902, p. 8, pl. i, figs. 5-9.

⁴⁸ Tate.—Trans. Roy. Soc. South Austr., ix, 1885-6 (Mch., 1887), p. 64, pl. iv, f. 12.

⁴⁹ Angas.—Proc. Zool. Soc. (Lond.), 1867 (1868), p. 909, pl. xlv, f. 6.

⁵⁰ Angas.—Proc. Zool. Soc. (Lond.), 1871, p. 20, pl. i, f. 31.

AUSTROMACTRA CALOUNDRÆ *sp. nov.*

(Pl. lxiii, figs. 1-2.)

Shell fairly large, crass, almost equilateral, equivalve, longer than high, posterior side nearly straight, forming a subacute angle with the ventral edge, which is regularly and shallowly rounded; anterior side a little swollen medially, otherwise very like the posterior, the angle of junction with the ventral side being less acute.

The sculpture consists of well marked ridges developing after a smooth umbonal region has been formed; these ridges are closely packed, becoming wavy laterally, very pronounced on the lower edges. Colour is brownish, and young shells have a couple of broad rays of purple, which colour sometimes tinges the interior. The hinge is broad and the pallial sinus small and rounded.

Length 52 mm., height 39 mm., depth of single valve 14 mm.

Habitat.—South Queensland and northern New South Wales. Type from Caloundra, South Queensland.

ELECTOMACTRA ANTECEDENS *sp. nov.*

(Pl. lxiv, figs. 1-3.)

Shell of medium size, elongate oval, inequilateral, equivalve, thin, vitreous, white. Anterior side produced, straight, meeting the ventral edge roundly, the latter being gently arcuate, the posterior side straight, angulate, a notable keel being formed. Sculpture consists of growth lines only, the umbones being smooth; indistinct suggestion of radials appears laterally, more marked on the posterior angulate side. The hinge plate is broad and agrees with that described by Hedley for his *M. parkesiana*, the type of the genus *Electomactra*. The sinus is short and rounded.

Length 42 mm., height 28 mm., depth of single valve 8 mm.

Habitat.—New South Wales and south Queensland. Type from Gunnamatta. This is the species commonly known locally as *Mactra ovalina* Lamarck, but which does not agree with Lamarck's species, as has already been pointed out by Reeve, Smith, and Hedley.

ZENATIA VICTORIÆ *Pritchard and Gatliff.*

This Victorian species was admitted by Hedley from Twofold Bay, while he rejected Angas' record of *Zenatia acinaces* from Botany Bay. The species was found by Master Consett Davis to be very common at the mouth of the Richmond River, and Mort collected it at Coff's Harbour and Byron Bay. This instigated comparison with Victorian specimens, when they were all found

to be referable to *Zenatiopsis* Tate,⁵¹ although I could not separate the northern shells from the southern ones.

This is an interesting correction as showing the selective endemism of our molluscan fauna, the genus *Zenatia* being founded on a Neozelanic species, while *Zenatiopsis* was provided for Australian fossils, and the recent Australian shells are indubitably congeneric with the fossils and not with the Neozelanic recent shells, the distinguishing features being easily recognized.

Family AMPHIDESMATIDÆ.

Two species of *Amphidesma* and one of *Ervilia* are included in Hedley's list, but the nomination needs readjustment with the addition of another species.

To treat the small shell regarded as *Ervilia bisculpta* Gould first, it may be remarked that it does not bear much resemblance to the Palæartic type of *Ervilia*, it does not seem to be conspecific with the Japanese species, and it has a specific name founded on the Sydney shell. Therefore, while reviving the latter, I introduce a new generic name *Spondervilia*, naming *Ervilia australis* Angas as type. Hedley⁵² has given good figures of the Queensland species, which may differ. The two species classed under *Amphidesma* are *angusta* Reeve and *cuneata* Lamarck, the latter described from Kangaroo Island, South Australia; local specimens disagree in shape and may be named *Amesodesma cuneata vanidica* subsp. nov., the posterior side being more produced, the ventral much more rounded, the pallials sinus smaller.

Length 26 mm., height 19 mm. Type from Gunnamatta, New South Wales.

AMESODESMA PERFUGA sp. nov.

(Pl. lxiii, fig. 9.)

Shell small, rather thin, elongate, very inequilateral, equivalve, anteriorly very produced, posteriorly somewhat truncate, ventral edge a little sinuate. Colour white, rather translucent. Sculpture consists of fine growth lines only. Confused with *angusta* Reeve it differs in its tenuity, Reeves' species being very solid with the posterior edge abruptly truncate, and the ventral edge nearly straight; the latter has been well figured by Hedley.⁵³ Owing to the elongation of the posterior side the hinge is more spread and the pallial sinus does not reach below the median ligament as in Reeves' species.

Length 22.5 mm., height 10 mm.

⁵¹ Tate.—Trans. Proc. Philos. Soc. South Austr., ii, 1879, 129.

⁵² Hedley.—Proc. Linn. Soc. N. S. Wales, xxxi, 1906, p. 479, pl. xxxvi, f. 8.

⁵³ Hedley.—Proc. Linn. Soc. N. S. Wales, xli, 1916 (1917), p. 692, pl. xlvii, f. 4.

Habitat.—New South Wales. Type from Gunnamatta. This species appears to live in deeper water than *angusta* and frequents the inland waters in preference to the ocean beaches, whence alone the latter has been secured.

Family MYACIDÆ.

To this family Hedley allotted two species, referring them to the genera *Cryptomya* and *Turquetia*. Each was a very dubious association. *Cryptomya* had been introduced by Conrad for an American shell, not much like ours, which has been well figured by Hedley,⁵⁴ so that it is only necessary to introduce a new generic name *Venatomya* for A. Adams' *Sphænia elliptica*.

When Hedley introduced the new species *integra* for a species dredged in 250 fathoms off Sydney, he doubtfully included it in the genus *Turquetia*, which had been proposed by Velain for a shallow-water subantarctic bivalve. As such tentative determinations are very often cited by workers as confirmation of hypotheses and theories to the detriment of scientific progress, it seems best to dissociate this species and propose for it the new generic name *Benthoquetia*, an excellent figure and description having been provided by Hedley.

Family CORBULIDÆ.

Two species are included in Hedley's New South Wales list, *smithiana* Brazier and *tunicata* Hinds. Of the former, *covi* Pilsbry was ranked as a synonym, but a long series of specimens from Twofold Bay justifies its reinstatement as a distinct species. Quite a different species was dredged off Gabo Island by Roy Bell, and a few specimens were found in Twofold Bay, New South Wales. This was found to agree with shells from Port Albert, Victoria, determined as *scaphoides* Hinds, while both *scaphoides* and *tunicata* appear in Hedley's Queensland list. Lots of specimens were available, for when these molluscs are dredged numbers are always secured, as they are gregarious in mud. The Queensland shells marked as *scaphoides* were obviously distinct from the true *scaphoides*, but at first sight our "*tunicata*" appeared to agree with the figure of *tunicata*; closer examination, however, showed that the New South Wales shell was nearer than the Queensland one which showed at once that both were different, as Hind's species was from the Philippine Islands. It became, therefore, necessary to name the three species confused in eastern Australia under the name *tunicata*, and owing to the confusion it seemed best to explain the differences clearly by means of figures and with the excellent illustrations here provided distinction should be very easy.

⁵⁴ Hedley.—Proc. Linn. Soc. N. S. Wales, xxxviii, 1913, p. 275, pl. 17, figs. 40-44.

The generic name *Corbula* has been a source of trouble recently; its introduction was very irregular and must be here explained. The first time *Corbula* appeared in binomial literature was among the plates in the Encyclopédie Methodique, on plate 230, supposed to have been published in 1797; no specific names occur. The genus was included by Lamarck⁵⁵ in his 1799 issue with a simple reference to this plate but still no specific names. In 1801 he added names for the figures, but selected no type nor did he indicate such in any way.

In 1847 Gray⁵⁶ selected as type *Corbula sulcata*, but, as Megerle in 1811⁵⁷ had introduced *Aloidis* for this species, some authorities have rejected Gray's designation and regarded *gallica* as the type. Fischer⁵⁸ stabilized the matter by introducing *Bicorbula* for the *gallica* series. This is so straightforward that it will be at once asked, whence the trouble? In 1798 Bolten used *Corbula* in a perfectly legitimate manner for a series of molluscs none of which were *Corbula* in the Lamarckian sense, and Bolten's usage is the first one where specific names are given. Under these circumstances I designate as type of *Corbula* Bolten, *Corbula rosea*, and that will reduce *Corbula* Bolten to the synonymy of *Asaphis* Modeer. If *Corbula* Bruguière be disregarded the name will disappear, and I, therefore, introduce *Notocorbula* with *N. vicaria* Iredale as type for the southern Australian species with the cardinal tooth keeled, a feature I have not seen remarked upon elsewhere. Another extraordinary form which is commonly referred to *Corbula*, is the Queensland shell known as *Corbula macgillivrayi* Smith. It is difficult at first sight to recognize its relationship with the southern species, and it is therefore here nominated as the type of a new genus, *Anisocorbula*, the elongate subequivalve form being very striking and quite unlike that of any of the named groups of this family.

NOTOCORBULA VICARIA *sp. nov.*

(Pl. lxxv, figs. 3, 4, 9; Pl. lxxiv, figs. 8-9.)

Shell small, crass, semiglobose, right valve very convex, clasping the left valve which is less swollen, umbones approximate, beak or snout short and stout. Colour white.

Right valve very closely concentrically ribbed, posterior side keeled, posterior area less strongly sculptured, radial ornamentation obsolete. The juvenile shell is differentiated in a cap-like fashion, comparatively more elongate than mature shell, and notably keeled and sculptured with about twelve liræ crossed by minute radial

⁵⁵ Lamarck.—Mem. Soc. N. H. Paris., p. 89, 1799: Syst. Anim., 1801, p. 137.

⁵⁶ Gray.—Proc. Zool. Soc. (Lond.), 1847, p. 191.

⁵⁷ Megerle.—Ges. Nat. Fr. Berl. Mag. v, 1811, p. 67.

⁵⁸ Fischer.—Man. de Conch., 1887, p. 1123.

threads, the umbonal area being minutely reticulate. Succeeding the cap about twenty-three to twenty-five ridges may be counted, the ridges somewhat angulate. Left valve shows a similar flattened juvenile shell, but the remainder of the valve is covered with closely packed, rough, brown periostracum showing no concentric ridges but two or three radial elevations. Snout a little twisted, elongate.

Length 23 mm.; height 17 mm.; depth of conjoined valves 14 mm.

Habitat.—New South Wales. Type from Sydney Harbour.

NOTOCORBULA HYDROPICA *sp. nov.*

(Pl. lxx, figs. 5-6, 8.)

Compared with preceding, this species is even more globose, both right and left valves being more convex and snout more pronounced. The juvenile shell is more elongate, more regularly sculptured, keel more pronounced, and dorsal area more regularly lirate. The mature shell has fewer and bolder concentric ridges on the right valve, fifteen being counted as compared with twenty-three, while the concentric ridges show a little underneath the periostracum of the left valve, and the radials are also more notable.

Length 23 mm.; height 15.5 mm.; depth 15.5 mm.

Habitat.—North Queensland. Type from Albany Passage. Smith⁵⁹ has given a figure under the name *C. scaphoides* Hinds, which appears to have been drawn from a Torres Strait specimen.

NOTOCORBULA STOLATA *sp. nov.*

(Pl. lxx, figs. 1-2, 7.)

Differs at sight from the Sydney species in its smaller size, much less swollen shape and obsolete snout. The juvenile shell is correspondingly larger, weakly sculptured, being finely concentrically lined, with the radials evanescent, less elongate, and more strongly keeled. The mature sculpture of the right valve consists of about eleven flattened rounded ridges separated by cuts only, not deep grooves, while the left valve shows a more regularly concentric periostracum.

Length 16.5 mm.; height 12 mm.; depth of conjoined valves 9 mm.

Habitat.—Victoria and southern New South Wales (Twofold Bay). Type from Port Albert, Victoria.

⁵⁹ Smith.—Rep. Sci. Res. Challenger, Zool. xiii, 1885, p. 32, pl. vii (not viii), figs. 3a-b.

This species resembles some fossil specimens, referred to *C. ephamilla* Tate, but obviously more than one species is included under that name; the fact, however, is interesting in confirmation of the local endemism of our marine fauna.

Family SAXICAVIDÆ.

This name must be emended to *Hiatellidæ* as the generic name *Saxicava* Bellevue must be rejected in favour of *Hiatella*. These generic names have always been regarded as synonymous, and the dates of publication prove to be as follows:

Saxicava Bellevue, Journ. Physique, liv, p. 5, 1802.

Hiatella Bosc., Hist. Nat. (Buffon), ed. Deterville, Moll. iii, 120, 1801.

The excellent illustrations to this paper are from paintings made by Miss J. K. Allan, of this Museum, and my best thanks are here tendered for this assistance which facilitates the recognition of the species discussed.

The new names introduced in this paper are:

Pronucula mayi sp. nov.

Cucullæa vaga sp. nov.

Denticosa gen. nov.: type *Philobrya cuboides* Verco.

Pendaloma gen. nov.: type *Periploma micans* Hedley.

Offadesma gen. nov.: type *Periploma angasi* Crosse and Fischer.

Frenamya gen. nov.: type *Cælodon patulus* Tate.

Vertisphæra gen. nov.: type *Vertisphæra cambrica* Iredale.

Vertisphæra cambrica sp. nov.

Vertambitus gen. nov.: type *Verticordia vadosa* Hedley.

Spinosispella gen. nov.: type *Verticordia ericia* Hedley.

Setaliris gen. nov.: type *Verticordia setosa* Hedley.

Setaliris accessa sp. nov.

Proagorina gen. nov.: type *Lyonsiella quadrata* Hedley.

Questimya gen. nov.: type *Poromya undosa* Hedley and Petterd.

Pæxocodakia gen. nov.: type *Lucina rugifera* Reeve.

Epicodakia gen. nov.: type *Epicodakia consettiana* Iredale.

Sydlorina gen. nov.: type *Sydlorina symbolica* Iredale.

Sydlorina symbolica sp. nov.

Monitilora gen. nov.: type *Lucina ramsayi* Smith.

Wallucina gen. nov.: type *Lucina jacksoniensis* Smith.

Nevenulora gen. nov.: type *Lucinida hilaira* Hedley.

Cavatidens gen. nov.: type *Cavatidens omissa* Iredale.

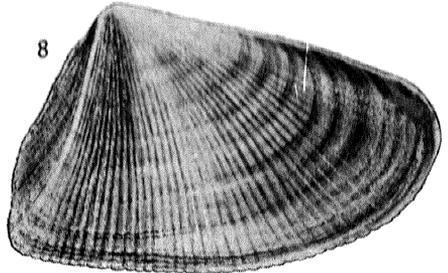
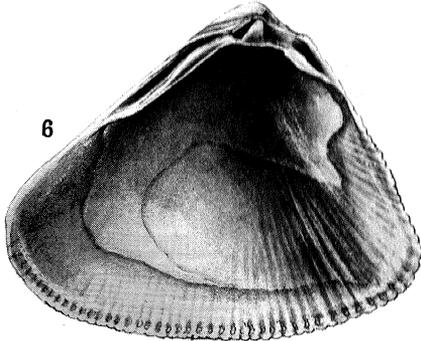
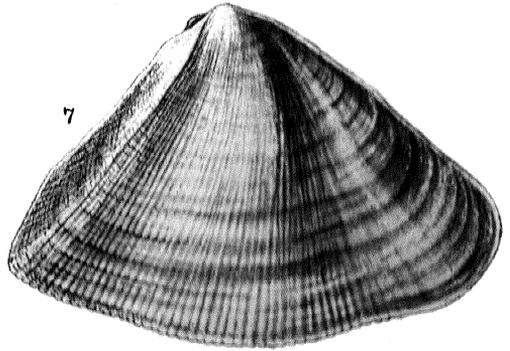
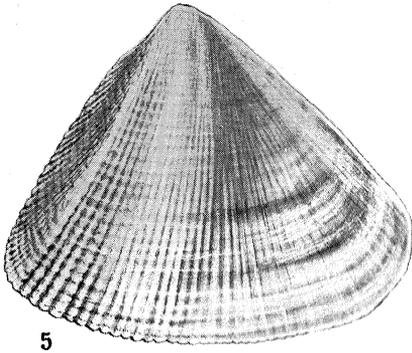
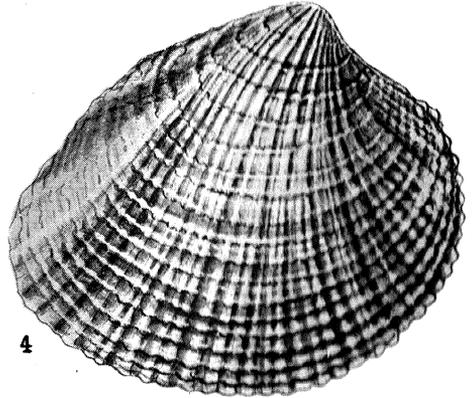
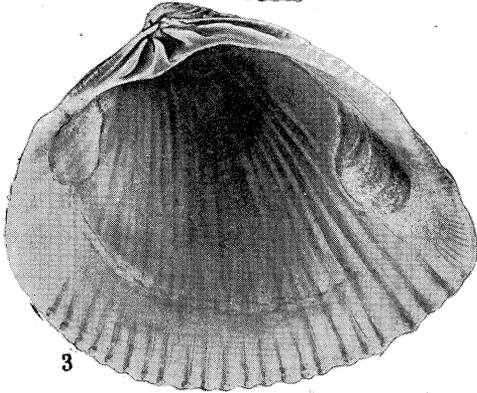
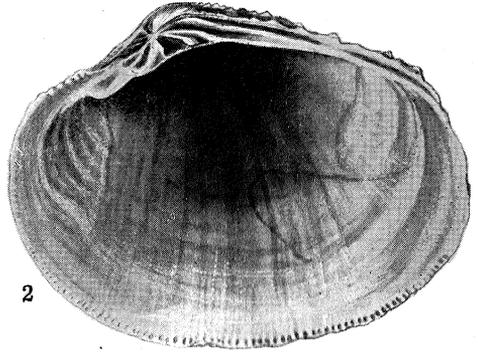
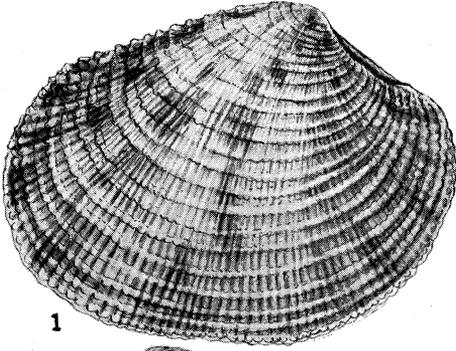
Cavatidens omissa sp. nov.

Epicodakia gunnamatta sp. nov.

- Epicodakia consettiana* nom. nov.
Bathycorbis gen. nov.: type *Chione despecta* Hedley.
Genaxinus gen. nov.: type *Thyasira albigena* Hedley.
Parathyasira gen. nov.: type *Parathyasira resupina* Iredale.
Parathyasira resupina sp. nov.
Parathyasira resupina neozelanica subsp. nov.
Prothyasira gen. nov.: type *Prothyasira peroniana* Iredale.
Prothyasira peroniana sp. nov.
Prothyasira peroniana peregrina subsp. nov.
Prothyasira adelaideana sp. nov.
Prothyasira benthicola sp. nov.
Virmysella gen. nov.: type *Virmysella spernaæ* Iredale.
Virmysella spernaæ sp. nov.
Meridosinia gen. nov.: type *Meridosinia nedigna* Iredale.
Meridosinia nedigna sp. nov.
Sunemeroc gen. nov.: type *Sunetta adelinae* Angas.
Antigona lamellaris moderata subsp. nov.
Tigammona gen. nov.: type *Tigammona persimilis* Iredale.
Tigammona persimilis sp. nov.
Veremolpa gen. nov.: type *Veremolpa ethica* Iredale.
Veremolpa ethica sp. nov.
Punipagia gen. nov.: type *Tellina subelliptica* Sowerby.
Deltachion gen. nov.: type *Deltachion virilis* Iredale.
Deltachion virilis sp. nov.
Plebidonax gen. nov.: type *Donax deltoides* Lamarek.
Tentidonax gen. nov.: type *Donax veruinus* Hedley.
Deltachion electilis sp. nov.
Austromactra gen. nov.: type *Austromactra caloundra* Iredale.
Nannomactra gen. nov.: type *Mactra jacksonensis* Smith.
Electomactra gen. nov.: type *Mactra parkesiana* Hedley.
Diaphoromactra gen. nov.: type *Hemimactra versicolor* Tate.
Notospisula gen. nov.: type *Gnathodon parvum* Petit.
Austromactra caloundra sp. nov.
Electomactra antecedens sp. nov.
Spondervilia gen. nov.: type *Ervilia australis* Angas.
Amesodesma gen. nov.: type *Amesodesma perfuga* Iredale.
Amesodesma cuneata vanidica subsp. nov.
Amesodesma perfuga sp. nov.
Venatomya gen. nov.: type *Sphania elliptica* A. Adams.
Benthoquetia gen. nov.: type *Turquetia integra* Hedley.
Notocorbula gen. nov.: type *Notocorbula vicaria* Iredale.
Anisocorbula gen. nov.: type *Corbula macgillivrayi* Smith.
Notocorbula vicaria sp. nov.
Notocorbula hydropica sp. nov.
Notocorbula stolata sp. nov.

EXPLANATION OF PLATE LXII.

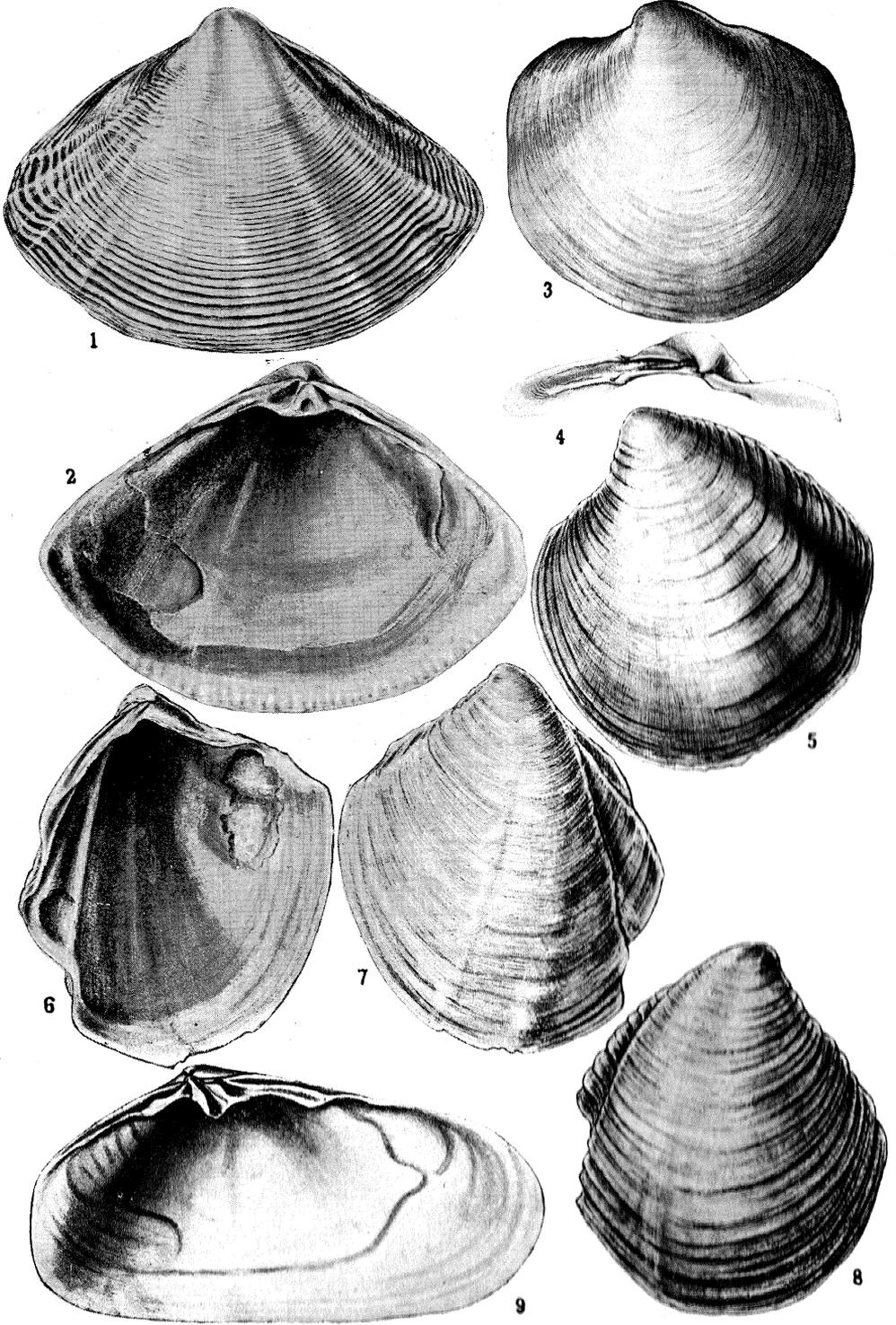
- Fig. 1. *Tigammona persimilis* Iredale, exterior of right valve.
Fig. 2. *Tigammona persimilis* Iredale, interior of right valve.
Fig. 3. *Veremolpa ethica* Iredale, exterior of right valve.
Fig. 4. *Veremolpa ethica* Iredale, interior of right valve.
Fig. 5. *Deltachion virilis* Iredale, exterior of right valve.
Fig. 6. *Deltachion virilis* Iredale, interior of right valve.
Fig. 7. *Deltachion electilis* Iredale, exterior of right valve.
Fig. 8. *Deltachion brazieri* E. A. Smith, exterior of right valve.



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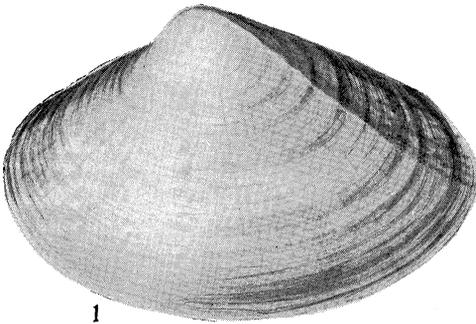
EXPLANATION OF PLATE LXIII.

- Fig. 1. *Austromactra caloundra* Iredale, exterior.
Fig. 2. *Austromactra caloundra* Iredale, interior.
Fig. 3. *Cavatidens omissa* Iredale.
Fig. 4. *Cavatidens omissa* Iredale, hinge.
Fig. 5. *Parathyasira resupina* Iredale.
Fig. 6. *Prothyasira adelaideana* Iredale, interior.
Fig. 7. *Prothyasira adelaideana* Iredale, exterior.
Fig. 8. *Prothyasira peroniana* Iredale, exterior.
Fig. 9. *Amesodesma perfuga* Iredale.

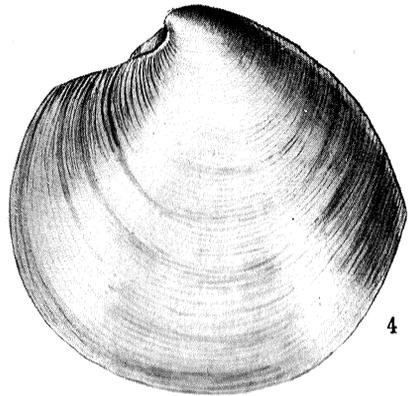


EXPLANATION OF PLATE LXIV.

- Fig. 1. *Electomacra antecessens* Iredale, exterior.
- Fig. 2. *Electomacra antecessens* Iredale, hinge of left valve.
- Fig. 3. *Electomacra antecessens* Iredale, hinge of right valve.
- Fig. 4. *Meridosinia nedigna* Iredale, exterior.
- Fig. 5. *Meridosinia nedigna* Iredale, interior.
- Fig. 6. *Epicodakia gunnamatta*, Iredale, hinge.
- Fig. 7. *Epicodakia gunnamatta*, Iredale, exterior of left valve.
- Fig. 8. *Notocorbula vicaria* Iredale, hinge of left valve.
- Fig. 9. *Notocorbula vicaria* Iredale, interior of right valve.
- Fig. 10. *Virmysella spernaæ* Iredale, hinge.
- Fig. 11. *Virmysella spernaæ* Iredale, hinge.
- Fig. 12. *Virmysella spernaæ* Iredale, exterior.



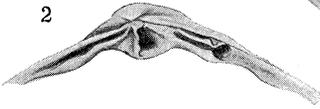
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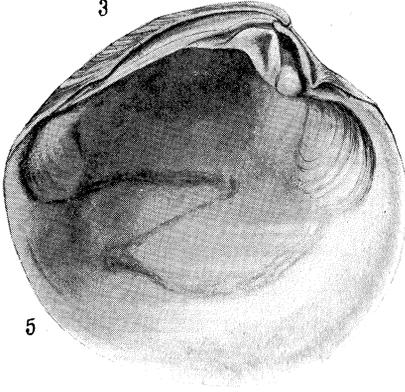
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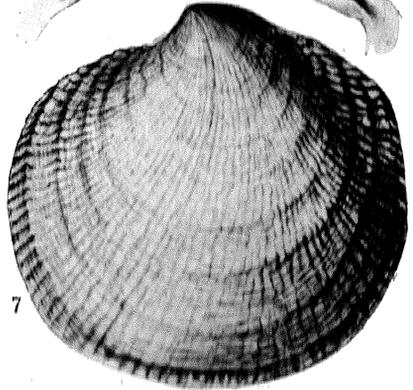
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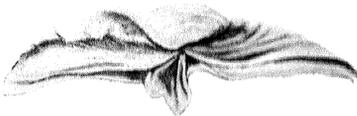
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5



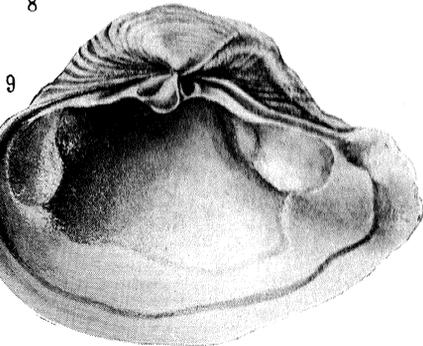
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8



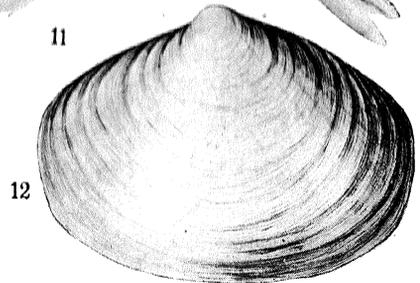
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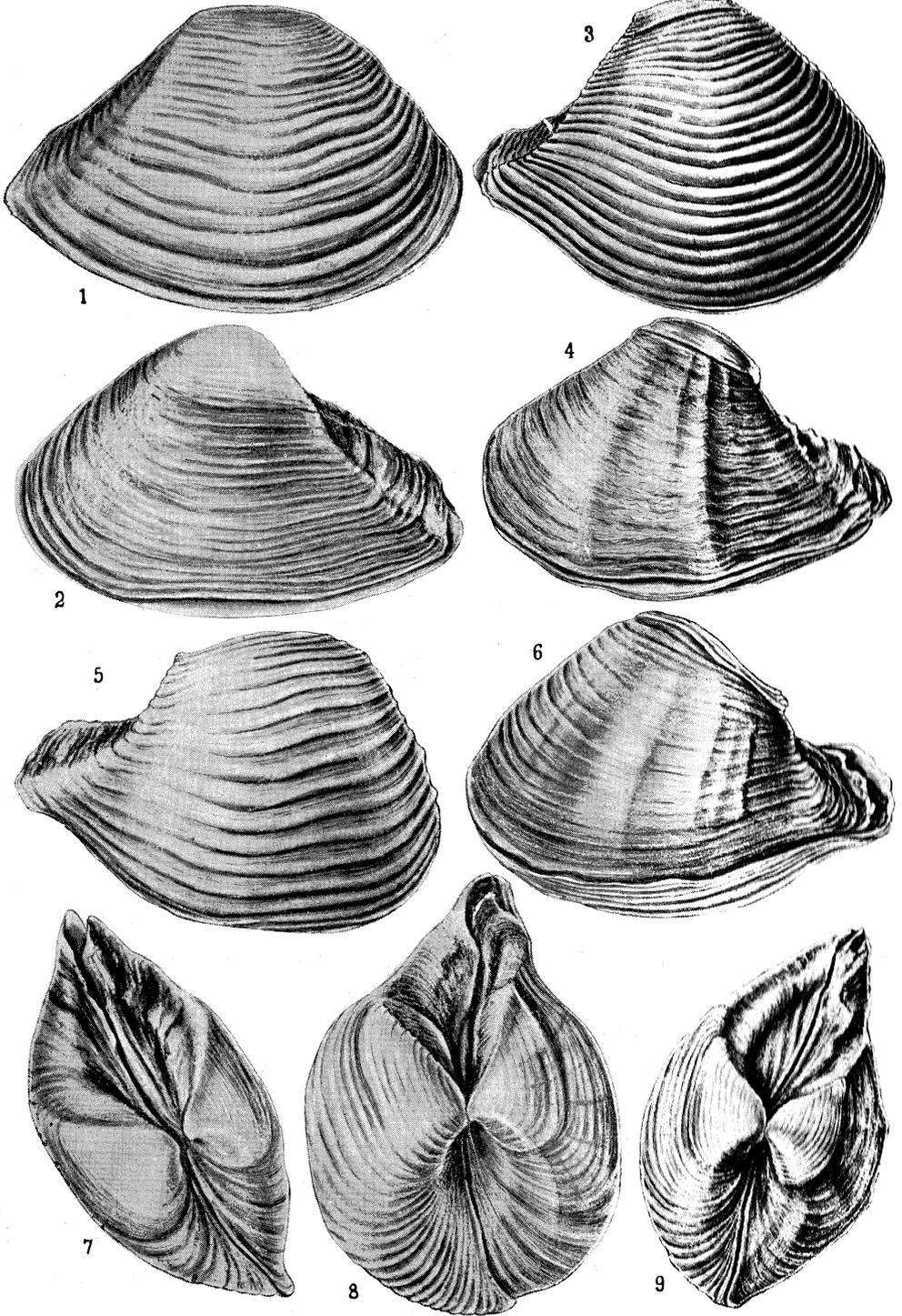
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12

EXPLANATION OF PLATE LXV.

- Fig. 1. *Notocorbula stolata* Iredale, right valve.
- Fig. 2. *Notocorbula stolata* Iredale, left valve.
- Fig. 3. *Notocorbula vicaria* Iredale, right valve.
- Fig. 4. *Notocorbula vicaria* Iredale, left valve.
- Fig. 5. *Notocorbula hydropica* Iredale, right valve.
- Fig. 6. *Notocorbula hydropica* Iredale, left valve.
- Fig. 7. *Notocorbula stolata* Iredale, top view of conjoined valves.
- Fig. 8. *Notocorbula hydropica* Iredale, top view of conjoined valves.
- Fig. 9. *Notocorbula vicaria* Iredale, top view of conjoined valves.



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