

## DESCRIPTIONS OF SOME NEW SPECIES OF SOUTH AUSTRALIAN MARINE AND FRESH-WATER MOLLUSCA.

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### PLATES IV. AND V.

*Helix reteporoides*, *spec. nov.* Plate v., figs. 14 a—c.

Shell rather widely umbilicated, depressed, orbicular, thin; spire a little elevated; whorls five, convex, separated by a deeply-impressed or channelled suture; last whorl rounded, not descending in front, base convex; aperture slightly oblique to the vertical axis, subcircular; peristome simple, its margins disunited; columella slightly reflected over the umbilicus, which is wide and perspective. The ornament consists of regular, crowded, thin, elevated, equal ridges, and transverse, equidistant microscopic striæ in the intercostal furrows; the ridges are more distant on the spire whorls than on the last whorl; the transverse striæ are more conspicuous on the base, and the distance between them about equals the width of the interstitial grooves. Colour of shell reddish-brown.

*Dimensions*.—Major and minor diameters, 7 and 6·25; height, 4; diameter of umbilicus, 1·5 millimetres.

*Localities*.—Black Hill, near Adelaide, under rotten stumps of the "grass-tree"; under stones at the foot of the cliffs at the junction of the River Para and Jacobs' Creek; slopes of Kaiserstuhl, Barossa Range; in the stringybark forests about Clare and Penwortham.

This species belongs to a group of small shells, more or less depressed, and ornamented with raised lamellæ, represented by many species in Tasmania, with most of which I have compared it, and by three described species in South Australia, but two or more species yet remain undiagnostically known. As implied by the specific name, the shell above described has affinity with *H. retepora* (Cox), inhabiting the Flinders Range (*Masters*) and at *Port Lincoln* (*R. T.*); the general shape is the same, but in *H. reteporoides* the spire is not quite so elevated, the whorls more rotund, deeper suture, more convex base, larger umbilicus, the costal lamellæ equal and very much more numerous, and the transverse striæ finer.



*Helix Tomsetti*, *spec. nov.* Plate v., figs. 13a—c.

Shell conoidly depressed, rather thin, widely and deeply umbilicated; spire slightly elevated, widely conical, obtuse; whorls five, flatly convex, narrowly concavely depressed near the anterior suture, and margined at the suture; last whorl rounded, rather depressed above, and bluntly angled at the periphery; posterior to the angulation at the periphery the surface is slightly depressed, thence convex to the suture; base rather abruptly convex; aperture not descending in front, oblique to the vertical axis, rotundately lunate; peristome simple, thin, disunited; columella very slightly reflected over the umbilicus.

The ornamentation consists of coarse, irregular, oblique striations and distant granulations; the one and a half apical whorls granulose only; under surface striated. Colour of the living shell unknown.

*Dimensions*.—Major and minor diameters, 14.5 and 12.5; height, 7; height of aperture, 6; diameter of umbilicus, 2.5 millimetres.

*Locality*.—Cape Borda, Kangaroo Island, (*Tomsett!*). This new species is somewhat intermediate between *H. Bordaensis* and *H. Evandaleana*, having more the shape of the former, but with the sculpture of the latter; it is flatter and has a larger umbilicus than *H. Evandaleana*.

*Mitra pellucida*, *spec. nov.* Plate iv., fig. 13.

Shell minute, slender, fusiform, translucent, colourless, polished; apex obtuse; whorls 6, flatly convex, suture distinct; the two or three apical whorls smooth, the rest with thick depressed axial costæ, the interstices linear and puncturated; last whorl lirate at the base; anterior portion of the columella slightly recurved; columella with three strong oblique plaits; outer lip not thickened, smooth within.

*Dimensions*.—Total length, 7.25; of aperture, 3.25; breadth of last whorl, two millimetres.

*Localities*.—In beach sand, Fowler and Streaky Bays in the Great Australian Bight.

This new species may perhaps belong to the section *Mitroidea*, it is certainly not the young of any known *Mitridæ* inhabiting South Australian waters, and I cannot attach it to any figured species of the family.

*Paludina lirata*, *spec. nov.* Plate iv., figs. 6a—b.

Shell subglobose, thick, imperforate; spire depressed, conic, obtuse, eroded at the apex; suture much impressed. Whorls four, convex, somewhat flattened posteriorly. Aperture oblique, large, semicircular; outer lip attenuated and acute; interior bluish-white; epidermis of an olive-green colour;



surface ornamented with longitudinal liræ and faint striæ, and obliquely transverse striæ and wrinkles of growth. There are six or seven prominent liræ on the penultimate whorl with a finer one occasionally interposed between them. On the last whorl the liræ in front of the periphery are less pronounced. Operculum horny, concentric, with the nucleus nearer the columella margin. The embryonic shells are diaphanous, pale-green, carinated on the periphery of the last whorl, on the posterior part of which are interstitial striæ between the liræ; the base is strongly striated; the nuclear whorls are depressed faintly striated longitudinally; there is no umbilicus.

The animal is oviparous, so also is *P. sublineata*, *P. Hanleyi*, *Melania Tatei* and *M. Balonnensis*, giving birth to six to eight embryos of about three millimetres diameter.

*Dimensions*.—Total length, 18; greatest width, 18; height of aperture, 13; width of aperture, 10.

*Locality*.—Cooper's Creek at Innamincka, Central Australia, (Mr. James McLeod!).

The species is quite unique among Australian congeners.

*Aspergillum multangulare*, *spec. nov.* Plate iv., figs. 4a—b.

Disk roundly oblong, laterally sub-compressed, ventral and anterior sides prolonged into two rows of longish tubes; particles of coarse sand or shell are usually agglutinated to the disk, or it is adherent by one valve.

Valves oblong, inequilateral, translucent; umbones anterior, prominent; surface with distant concentric growth-folds, and rayed with microscopic lines.

Tube short, straight, or slightly bent, rather constricted at the proximal end; octagonal, obtuse, not keeled at the angles; transversely irregularly striate.

*Dimensions*.—*Disk*, antero-posterior diameter, 8; umbo-ventral, 5; sectional diameter, 3.5. *Tube*, length, 6; diameter, 3 millimetres.

*Locality*.—Not unfrequently cast up on the sandbeach of Holdfast Bay, St. Vincent Gulf.

This species belongs to the section of the genus corresponding with *Humphreyia* of Gray, which includes two other species only, both Australian; from those it differs conspicuously by its small size and many-angled tube.

*Hemimactra versicolor*, *spec. nov.* Plate iv., figs. 12a—b.

Shell cuneiformly ovate, solid, equi- or inequilateral, moderately convex; colour, white, yellowish, brown, purplish, bluish-white; shining, ornamented with rather fine growth ridges; umbos distinct, incurved, approximate; anterior side very short, its margin regularly rounded; posterior side produced, with a narrow dorsal area limited by an ill-defined um-



bonal ridge extending to the somewhat pointed post-ventral extremity; post-dorsal margin gently sloping for half its length, thence more abruptly descending to form an acute angle with the moderately convex ventral margin.

The right valve has the anterior lateral tooth thick and short, the posterior longer and less stout; the doubling of these laterals is but faintly exhibited; the cardinal tooth is small. In the left valve there are no traces of the superior and supplementary laterals.

Pallial line with a broad, very shallow, posterior emargination

*Dimensions*.—Antero-posterior diameter, 12·5; umbo-ventral diameter, 9·5; sectional diameter, 6 millimetres.

*Locality*.—Living in great abundance on the sandy bottom of Lake MacDonnell, Great Australian Bight. Lake MacDonnell is now entirely cut off from the ocean by lofty sanddunes; *Zosteræ* and other plants, as also several species of mollusca, still inhabit it.

The nearest ally of this pretty species is *M. cuneata*, Chem. It also bears some general resemblance to *Spisula fluviatilis*, Angas, but is more oblique and gibbous, not sharply angulated at the post-umbonal slope, and the dentition is very different.

*Psammobia Brazieri*, *spec. nov.* Plate v., fig. 1.

Shell elongate, somewhat donaciform, thin, shining, pellucid, slightly gaping at both ends, depressed; umbos small, acute, directed posteriorly, and situated far back.

The front dorsal margin is almost three times as long as the posterior, nearly horizontal and straight; the post-dorsal slope is very oblique and straightish. The ventral outline is but slightly curved, forming an obtuse rounded extremity anteriorly, and a blunt angle with the obliquely truncated posterior extremity. The posterior area is bounded by an acute umbonal carina, a little anterior to which on the interior is a thick ridge descending from the umbo and appearing on the exterior as an opaque white line.

Colour whitish, with a pink flame enclosed between the carina and the internal umbonal ridge. The sculpture consists of fine concentric lines of growth, becoming coarser on the posterior slope.

*Dimensions*.—Antero-posterior diameter, 12; length of posterior side, 3·5; umbonal ventral diameter, 6·5; sectional diameter of united valves, 2·25 millimetres.

*Locality*.—Aldinga Bay.

*Tellina subdiluta*, *spec. nov.* Plate iv., fig. 9.

Shell small, thin, semipellucid, white or pale yellow, shining; ornamented with close, regular, flat concentric ridges and linear interspaces; the ridges are slightly elevated, lamellar, fewer



and more distant on the posterior side. Elongate-oval, very inequilateral, a little convex; posteriorly narrow, rounded; anteriorly produced, acuminate rounded; post-dorsal slope very oblique, slightly concave behind the small acute umbo, thence a little eurved to the rounded posterior margin; the antero-dorsal slope is very much longer, nearly straight. Right valve with two cardinal teeth, the posterior larger, triangular, and bifid; laterals well developed. Left valve with one bifid cardinal tooth only(?).

*Dimensions.* — Antero-posterior diameter, 9; umbo-ventral diameter, 5.5 millimetres.

*Locality.* — Dead shells from 22 fathoms in Encounter Bay.

This neat little species bears considerable resemblance to *T. diluta*, Smith, in Voy. Challenger, but is much shorter posteriorly, and otherwise a little different in outline, as also in sculpture.

*Tellina Aldingensis*, *spec. nov.* Plate v., fig. 2.

Right valve transversely elongate, subdepressed, much inequilateral; the anterior side larger than the posterior, rounded at the extremity and scarcely narrowed; posterior considerably attenuated, and narrowly truncated and inconspicuously biangulate at the extremity. The carination of the posterior slope is broadly and flatly convex, in front of which the shell is slightly depressed, but corresponding therewith on the interior there is a conspicuous, white, narrow ridge. Colour yellowish-white. The sculpture consists of linear striæ of growth, which are developed into slightly-raised laminae on the posterior slope.

The siphonal inflection is very deep, reaching near to the anterior scar, narrowly rounded at the end, and confounded with the pallial line.

This species comes near to *T. imbellis*, Hanley.

*Dimensions.* — Antero-posterior diameter, 31; umbo-ventral diameter, 18; sectional diameter of right valve, 3; length of posterior side, 11.5 millimetres.

*Locality.* — Aldinga Bay.

*Venerupis crebrelamellata*, *spec. nov.* Plate iv., figs. 14a—b.

Shell oblong, somewhat elliptical, tumid about the umbones which are incurved, approximate, and anterior; anterior side attenuated; roundly truncated behind; concentrically closely exfoliated.

The anterior side is short, its dorsal margin straight, and very sloping, and forming with the abruptly ascending slope of the ventral margin a blunt angle; the post-dorsal side is slightly arched, descending to the narrow somewhat obliquely truncated posterior margin; the posterior part of the ventral



margin is nearly horizontal, thence rapidly ascending to the somewhat apiculate front extremity.

*Sculpture*.—On the umbonal region it consists of concentric ridges and raised radial lines; the interspaces between the ridges are concentrically striated and decussated by the radial lines. Proceeding outwards the ridges are gradually developed into thin, erect, crowded, crenately-wrinkled laminae, which towards the posterior margin are broader and frilled; the radial lines of the umbonal area are continued as opaque pinkish-white thickenings in the crenatures on the dorsal face of the otherwise pellucid lamellæ.

Colour greyish, with a purplish or flesh-coloured stain about the umbones and posterior area.

The pallial line which is stained brown is near the margin; the sinus is narrow rather short and acute at the apex; the post adductor scar is purplish-brown and the anterior one pale-horn.

*Dimensions*.—Antero-posterior diameter, 24; umbo-ventral diameter, 14; sectional diameter, 13 millimetres.

*Locality*.—Burrowing in stiff clay on the north side of the mouth of the River Patawalonga, Holdfast Bay.

This species differs from all known species having lamellose ornament by its attenuated front and crowded lamellæ.

*Corbicula desolata*, *spec. nov.* Plate iv., figs, 11a—b.

Shell subtrigonally ovate, subequilateral, very convex with very prominent umbones; anterior side shorter, rounded at the margin, posterior margin more sharply curved.

Epidermis glossy, straw-coloured in young examples, brown in the adult. The ornament consists of distant, regular, acute, concentric ridges, passing into crowded raised lines on the posterior side where the epidermis is dull, darker in colour, and is crossed by fine oblique filaments.

Ligament short, brown. Interior of the valves bluish-white towards the margins, opaque-white towards the umbones. Hinge with three cardinal teeth in the right valve; the anterior one is small, the other two are grooved on their summits; the sockets for the lateral teeth are transversely striated. The left valve has two cardinal teeth, and the lateral teeth are transversely striated on both faces.

*Dimensions*.—Antero-posterior diameter, 17; umbo-ventral diameter, 15; sectional diameter, 11 millimetres.

*Locality*.—Cooper's Creek at Innamincka, Central Australia (*Mr. James McLeod!*).

*C. desolata* is related to *C. Angasi*, but differs by its more equilateral outline and great convexity,

*Lucina crassilirata*, *spec. nov.* Plate iv., fig. 2.

Shell orbicular, subglobose, very thick, regularly convex except in the post-dorsal area which is abruptly compressed. Surface



ornamented with thick concentric ridges, broader than the intervening concave sulci, and rather distant thickish threads which somewhat crenulate the margins of the liræ, but do not pass over them; inner margin of the valves strongly crenulated on the ventral region, minutely so on the front dorsal and posterior edges. Lunule small, shallow.

*Dimensions*.—Antero-posterior diameter, 8.5; umbo-ventral diameter, 8.25; sectional diameter, 7 millimetres.

*Locality*.—Shell sand, Streaky Bay.

This little species has a general resemblance to *L. columbella*, Lamarck, but has its closest ally in *L. nuciformis*, Tate, a fossil of the Older Tertiary beds of Aldinga Bay, from which it differs by being less gibbous, less angulated behind, and by its thicker liræ.

*Lepton ovatum*, *spec. nov.* Plate v., fig. 11.

Shell oval, thin, semitransparent, moderately convex, subinequilateral; umbos, blunt, approximate, projecting beyond the dorsal margin, slightly inclined to the front, situated a little behind the centre. Margins rounded on sides, except dorsally.

The sculpture consists of slight concentric striæ and microscopic granules. Owing to the transparency of the shell, the exterior exhibits the muscular scars and pallial line of the interior.

The right valve has one cardinal tooth, and the left valve two cardinal teeth, each with a lateral on each side, those of the right valve more remote.

*Dimensions*.—Antero-posterior diameter, 2; umbo-ventral diameter, 1.5; sectional diameter of closed valves, 1 millimetres.

*Locality*.—Shell sand, Holdfast Bay.

*Kellia Angasiana*, *spec. nov.* Plate v., fig. 7.

Triangularly oval, inequilateral, rather convex, extremely thin, dull, semitransparent. Dorsal margins sloping from the beaks towards each end, somewhat roundly truncate on the anterior side, roundly produced posteriorly, and the ventral margin moderately curved; umbo small, prominent, situated considerably in front of the centre.

The sculpture consists of numerous unequal elevated concentric threads.

*Dimensions*.—Antero-posterior diameter, 2.5; umbo-ventral diameter, 2; sectional diameter of both valves, 2 millimetres.

*Locality*.—Shell sand, Holdfast Bay.

*Montacuta meridionalis*, *spec. nov.* Plate v., fig. 4.

Ovately orbicular, sub-equilateral, somewhat gibbous, extremely thin, glossy, transparent, margins rounded; umbo



small, acute, hardly projecting beyond the dorsal margin, situated a little in front of the centre; posterior side the larger. The sculpture consists of fine concentric striæ.

Left valve with two diverging teeth, between which is the cartilage pit.

*Dimensions*.—Antero-posterior diameter, 10; umbo-ventral diameter, 8; sectional diameter of both valves, 4 millimetres.

*Localities*.—Shell sand, Aldinga Bay and Port Lincoln.

*Scintilla* (?) *lunata*, *spec. nov.* Plate iv., fig. 8.

Shell minute, approximately semicircular in outline, sub-equilateral, compressed, yellowish-white, dull, translucent; umbones small, though prominent, median, smooth. Surface of the valves concentrically faintly striated, and towards the margin minutely papillose, with a few larger papillæ grouped somewhat radially.

Dorsal line straight, the rest of the periphery almost uniformly arched, the posterior side being a little more attenuated than the anterior. Ventral gape wide, lanceolate. Ligament internal, bounded on each side in each valve by an obtuse tooth with a bifid crown and a long lateral. Margin of valves plain; interior nacreous, with the growth lines well shown.

*Dimensions*.—Greatest length of dorsal line, 7.25; greatest width, 3.5 millimetres.

*Locality*.—Creeping on rocks at extreme low tide at Edithburg, St. Vincent Gulf (*McDougall* !)

*Cardita rosulenta*, *spec. nov.* Plate v., fig. 3.

Shell trapezoidally ovate, transverse, moderately convex, inequilateral; umbones oblique incurved; anterior side short, obliquely and roundly truncated and flattened posteriorly; post-dorsal margin straight, slightly sloping; front-dorsal margin abruptly sloping and somewhat concave in front of the umbo. Lunule inconspicuous, broadly cordate, smooth. Surface ornamented with 22 very narrow subacute ribs, the anterior ones furnished with thickish annular scales, the middle and posterior ones with erect, arched, or subspinose scales; interspaces between the ribs concave, two or three times wider, concentrically, distantly, and irregularly striated.

Epidermis very thin, golden-yellow, minutely ciliate-fringed. Colour of shell whitish, the ribs pink and spotted with red; interior white, flesh-coloured from the umbo to the post-adductor scar.

*Dimensions*.—Antero-posterior diameter, 21; umbo-ventral diameter, 17; sectional diameter, 13 millimetres. Proportion 100:81:63.

*Localities*.—Small dead shells dredged in 22 fathoms, Encounter Bay, and in 32 fathoms, Backstairs Passage, and cast



up in Streaky and Fowler's Bays. Large living examples cast up at Rosetta Head, Encounter Bay (*R. H. Pulleine!*).

This new species has much the shape of *C. Preissii*, Menke, as figured by Reeve, from which it differs by being wider behind, with a well-defined posterior slope, and more convex; whilst the ribs are narrow, elevated, and more numerous. The proportion of the measurements of *C. Preissii* corresponding with those given above for *C. rosulenta* is 100:75:50. *C. rosulenta* makes a near approach to *C. scabrosa*, mihi, of the Old Tertiary of South Australia and Victoria, but has fewer ribs, and has not the arched dorsal line of that species.

*Cardita obliquissima*, *spec. nov.* Plate v., fig. 9.

Shell minute, very oblique and inequilateral, thick, white or pale rose colour. Anterior side much larger than the posterior, produced in front, pyriform; posterior side very narrow, abruptly sloping from an angulation extending from the umbo to the post-ventral margin; the whole surface is sculptured with distant, regular, somewhat wavy concentric grooves, and the posterior slope is ornamented with four or five radial riblets.

The hinge consists of a single thick, broad, triangular tooth in the right valve, which fits in between two more slender divergent teeth in the left.

Margins coarsely crenulated.

*Dimensions*.—Antero-posterior diameter, 3.75; umbo-ventral diameter, 3.25; sectional diameter through both valves, 2 millimetres.

*Locality*.—In shell sand at a depth of 22 fathoms, Encounter Bay.

*Carditella subtrigona*, *spec. nov.* Plate iv., fig. 10.

Shell triangularly ovate, somewhat solid, inequilateral, rather compressed, thick; umbones prominent, inclined forward, and considerably in advance of the centre. Surface ornamented with fourteen radiating costæ, which are covered with closely arranged, thick, compressed nodules; the interspaces are deep, a little narrower than the ribs, and are concentrically lirate.

The front dorsal margin is slightly concave in front of the umbo, thence rapidly sloping to the rounded anterior margin; the post-dorsal margin is ecurved, not so sloping, and longer than the front dorsal margin. The posterior margin is roundly truncated, and the ventral one regularly arched.

The inner margin of the valves is strongly and squarely dentate.

The left valve has two divergent cardinal teeth, the posterior one of which is considerably longer than the other; the right valve has a strong broadly triangular central tooth. There is



a lateral tooth on each side in both valves; the anterior one in the left and the posterior one in the right valve is submarginal.

*Dimensions*.—Antero-posterior, 5; umbo-ventral, 4.25; and sectional diameters, 2.75 millimetres.

*Locality*.—Dead shells cast up in Streaky Bay, Great Australian Bight.

This species is like *C. pallida*, Smith, the type of the genus, with which it agrees by the number of nodular ribs, but it differs as from all known species by its inequilateral triangularly ovate outline.

The genus *Carditella* was established by Mr. E. A. Smith in 1881 (*Proc. Zool. Soc.*, p. 42) for *Cardita*-like shells with well developed lateral teeth on each side. It now comprises nine species—three on the west coast of South America, four Australian, one Cape of Good Hope, and one off Tristan da Cunha.

*Limopsis rubricata*, *spec. nov.* Plate v., fig. 6.

Obliquely oval, inequilateral, inflated; umbo very prominent, antemedian. Hinge line straight, the anterior margin obliquely descending.

Colour whitish, with four radial flames of chestnut beneath a thin light horn-coloured epidermis. The sculpture consists of regular concentric striæ, and towards the front margin of inconspicuous radial threads.

Margin of the valves coarsely crenulated all round. Hinge line with prominent teeth—three in front and five behind.

Probably a young shell, but not referable to any known species.

*Dimensions*.—Antero-posterior diameter, 2.75; umbo-ventral diameter, 3; sectional diameter of united valves, 1.75 millimetres.

*Locality*.—Dredged in life from 32 fathoms in Backstairs Passage.

*Pinna inermis*, *spec. nov.* Plate iv., fig. 5.

*Yoang* shells up to 100 millimetres long, triangular-elongate, thin, semitransparent, slightly convex, ornamented with distant depressed longitudinal ribs and imbricating lamellæ of growth.

Colour light-horn, with a yellowish-brown band along the dorsal margin posterior to the ligament, and longitudinal streaks of the same colour on the rest of the surface.

The dorsal margin is straight, apical angle about  $35^{\circ}$ ; the ventral margin slightly concave about the byssal orifice, thence slightly eurved, the posterior end is truncated, the post-dorsal angle being  $90^{\circ}$  or less, joining the ventral margin with a rapidly ascending curve.



*Adult* shell cuneiform, somewhat elliptical, elongate, rather thick, semitranslucent, of a dark-brown colour, greyish towards the posterior margins where the lamellæ are densely imbricating and exfoliating.

In the anterior-third the valves are rather acutely convex, becoming increasingly depressed posteriorly; the axis of elevation is nearer the dorsal margin, and consequently the dorsal slope is steeper and shorter than that on the ventral side, which is undulatory ridged for about one-half or one-third of the whole length from the apex; posterior to the byssal orifice the ridges are marginal.

The dorsal margin nearly straight, varying from slightly convex to slightly concave; the ventral margin usually concave about the byssal orifice, thence convex to about two-thirds its length, where it commences to curve downwards to join the posterior margin. The posterior margin arched, somewhat produced, corresponding with the axis of elevation of the valve.

Surface ornamented with imbricating adpressed lamellæ and slight growth folds, especially on the anterior-ventral and-dorsal slopes; some individuals exhibit faint longitudinal ribs on the dorsal slope. Interior bluish-brown.

*Dimensions* of a large specimen.—Greatest length from the apex, 280 millimetres ( $14\frac{1}{4}$  inches); dorso-ventral diameter at right angles to the axis at two-thirds the whole length from the apex, 153 millimetres (six inches); greatest sectional diameter of both valves at about half the axial length, 51 millimetres (two inches).

*Localities*.—Vertically imbedded by their apices in the soft bottom of sheltered bays, just below low-tide mark; general from Eucla to the South-East.

This common so-called "razor-fish" has hitherto been known as *P. Zeylanica*, which name was applied to it by Angas in 1865, on the supposition that it is identical with the N.Z. shell. This identification is obviously erroneous, and is altogether inexplicable, as the two species are so widely different. The true *P. Zeylanica* has longitudinal ribs armed with close short semi-cylindrical hollow spines, and has a truncated posterior margin.

T. Woods (Proc. Tas. for 1875, p. 161) has evidently been misled, for in his description of *P. Tasmanica* he says, that in the few irregularly much-raised tubular scales it is quite distinct from *P. Zeylanica*, which is not uncommon in Australia. This author would seem to have been unacquainted with that species inasmuch as the characters he relies on by which to separate it from the species herein named, *P. inermis*, are such as ally it to *P. Zeylanica*, and raises a doubt if it be distinct from it.



*Pecten Bednalli*, *spec. nov.* Plate iv., figs. 3a—3b.

Shell somewhat triangularly orbicular, slightly convex, rather thin, scarcely equilateral, equivalve; ornamented with about 24 bundles of two or three subequal ribs, and shagreen sculpture in the interspaces. Ears very unequal, radially ribbed. Colour of left valve purplish, with dashes or blotches of white. Right valve white, varied with pale flesh colour.

*Dimensions*.—Antero-posterior diameter, 28; umbo-ventral diameter, 25; sectional diameter, 8 millimetres.

This species is like *P. asperrimus* in shape and auricles, though it is a little more attenuated dorsally, but differs in the arrangement of the ribs and in the shagreened surface, by which latter character it resembles *P. bifrons*. The ribs increase in number from the umbonal region to the front by repeated bi- and tri-furcations, and are at first very little raised and plain; but towards the margin are subangular, and crowned with small prickly serratures (not scales, as in *P. asperrimus*). The ribs of each group of two are usually equal in size, but when three are together the middle one is usually stouter. Occasionally a single slender rib is interposed towards the front between the bundles.

*Locality*.—Aldinga Bay (*Mr. W. T. Bednall!*)

*Pecten Pulleineanus*, *spec. nov.* Plate iv., figs. 1a—1b.

This species is allied to *P. asperrimus*, but less orbicular and flatter. The ribs are 33 in number, simple, subacute, crossed by close-set continuous lamellæ—not interrupted on the flanks and in the sulci as in *P. asperrimus*. Anterior ear of right valve very narrow, elongate, radially ribbed; posterior ear, as in *P. asperrimus*, six-rayed raised into lamellose scales.

*Dimensions*.—Antero-posterior diameter, 23; umbo-ventral diameter, 19·5 millimetres.

*Locality*.—South-East coast (*Mr. R. H. Pulleine!*)

Among other Australian species it makes some approach to *P. cruentatus* and *P. blandus*, Reeve, but is not likely to be confounded with them.

*Limea austrina*, *spec. nov.* Plate iv., fig. 7.

Shell subovate, almost equilateral, very convex, solid, ornamented, with about twenty radiating nodulose ribs; the intervening sulci are somewhat narrower than the ribs, and are crossed by distant thickish liræ; umbones prominent, incurved; the hinge margin, on each side of the sunken broadly triangular ligament pit, is transversely minutely denticulated.

The outer margin of the valves is bluntly dentate, and the interior is regularly grooved, the furrows corresponding with the external costæ.



*Dimensions*.—Antero-posterior, 6 ; umbo-ventral, 7 ; and sectional diameters, 4·5 millimetres.

*Localities*.—Dead shells dredged from 33 fms, Backstairs Passage, and from 22 fms, Encounter Bay (*Pulleine*!). Also in Pliocene beds, Limestone creek, W. Victoria (*J. Dennant*!).

This pretty species has the form and sculpture of *Limatula Torresiana* (E. A. Smith.), but has fewer ribs and coarser concentric ornament, and by the presence of teeth on the hinge is removed generically from it.

#### EXPLANATION OF PLATES.

##### PLATE IV.

1. *Pecten Pulleineanus*, *Tate*. *a*, Right valve, nat. size ; *b*, magnified view of portion of surface near the front.
2. *Lucina crassilirata*, *Tate*. Right valve enlarged.
3. *Pecten Bednalli*, *Tate*. *a*, Right valve and apical part of left valve, nat. size ; *b*, magnified view of portion of surface at the front.
4. *Aspergillum multangulare*, *Tate*. *a*, Front view of the whole shell ; and *b*, section of tube at the end ; both enlarged.
5. *Pinna inermis*, *Tate*. Reduced from an example 18 inches long.
6. *Paludina lirata*, *Tate*. *a*, Back ; and *b*, front views ; nat. size.
7. *Limea austrina*, *Tate*. Much enlarged.
8. *Scintilla lunata*, *Tate*. Left valve, much enlarged.
9. *Tellina subdiluta*, *Tate*. Left valve, much enlarged.
10. *Carditella subtrigona*, *Tate*. Left valve, enlarged.
11. *Corbicula desolata*, *Tate*. *a*, Dorsal aspect ; and *b*, right valve ; nat. size.
12. *Mactra versicolor*, *Tate*. *a*, Dorsal aspect ; and *b*, left valve ; nat. size.
13. *Mitra pellucida*, *Tate*. Much enlarged.
14. *Venerupis crebrelamellata*, *Tate*. *a*, Left valve ; and *b*, dorsal aspect ; nat. size.

##### PLATE V.

1. *Psammobia Brazieri*, *Tate*. Left valve, enlarged.
2. *Tellina Aldingensis*, *Tate*. Right valve, nat. size.
3. *Cardita rosulenta*, *Tate*. Right valve, nat. size.
4. *Montacuta meridionalis*, *Tate*. Left valve, much enlarged.
5. *Semele exigua*, *H. Adams*. Right valve, enlarged.
6. *Limopsis rubricata*, *Tate*. Right valve, much enlarged.
7. *Kellia Angasiana*, *Tate*. Left valve, much enlarged.
8. *Semele Ada*, *Adams & Angas*. Right valve, enlarged.
9. *Cardita obliquissima*, *Tate*. Left valve, much enlarged.



10. *Gastrochæna Tasmanica*, *T. Woods*. *a*, Right valve; and *b*, dorsal aspect of united valves; enlarged.
11. *Lepton ovatum*, *Tate*. Left valve, much enlarged.
12. *Pythina Tasmanica*, *Tenison Woods*. Left valve, enlarged.
13. *Helix Tomsetti*, *Tate*. *a*, Front view; *b*, basal aspect; and *c*, view from above; nat. size.
14. *Helix retaporoides*, *Tate*. *a*, Front view; *b*, basal aspect; and *c*, view from above; enlarged.
15. *Dosinia grata*, *Deshayes*. Right valve, nat. size.
16. *Modiola semivestita*, *Dunker*. *a*, Left valve, and *b*, dorsal aspect of united valves; nat. size.







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