

ON SOME AUSTRALIAN SPECIES OF EULIMIDÆ AND PYRAMIDELLIDÆ.

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PLATE IV, FIGURES 1-7.

FAMILY EULIMIDÆ.

GENUS EULMA.

(a). *Shell straight.*

1. *E. augur*, Angas, Proc. Zool. Soc., 1865, p. 56; Reeve, Icon. Conch., t. f., 1866; Tryon, Man. Conch., vol. viii., p. 269, t. 68, f. 10, 1886.

Synonym, *E. proxima*, Sowerby in Reeve's Icon. Conch., t. 6, f. 48, 1866; Tryon, op. cit., t. 68, f. 11.

I have compared the types of *E. augur* and *E. proxima* in the British Museum, and the only differences between them (*E. proxima* is slightly immature) are those of total length, the former having 10 whorls in a length of 12 m.m., and the latter 12 whorls in a length of 15 m.m., and a slight difference in the proportion of the length to the breadth. An examination of many examples of *E. augur* proves that the proportion of length to breadth is not constant, and that micromorphs occur; indeed there is a great tendency among Eulimidæ to range from giant to dwarf-sizes; thus two extremes give the following ratio, 100 to 36 and 100 to 28 vix.

Tryon's figure of *E. augur* grossly misrepresents its shape, some individuals may show a barely perceptible torsion of the spire, but in general, Angas' diagnosis "*marginibus spiræ rectoribus*" is applicable.

Distribution.—For *E. augur*. South Australia (without locality), Angas, type specimen; Holdfast, Aldinga, and Fowler's Bays, Wauraultie and Wallaroo, Spencer Gulf, Tate; Royston Head (Matthews!)

TASMANIA (coll. Dr. Verco!)

For *E. proxima*. NEW SOUTH WALES, Port Jackson (type). The record for Tasmania of *E. proxima* by Tenison-Woods is based on an erroneous determination, the shell so-named is *Rissoina spirata*.

2. *E. orthopleura*, sp. nov. Pl. iv., fig. 1.

Pyramidal, straight, opaque-white, shining; whorls, nine, flat; last whorl subangular at the periphery, aperture rhomboidal.

Length, 6.25; width, 2.25.

Affinities.—This new species resembles *E. polygyra*, H. Adams (type compared), but it has a blunter apex, and the aperture is of a different shape. The rhomboidal aperture differentiates it from *E. polygyra* and *E. augur*, and in addition is distinguishable from the latter by a subangular base.

Localities.—SOUTH AUSTRALIA; Holdfast and Aldinga Bays (*R. Tate*, many examples).

(b) *Shell tortuous.*

In the following descriptions I have employed the phrase "torsion in one or two directions," that is lateral or vertical, or both. Hitherto the torsion has been described as either to the left or right, upwards or backwards; but as these positions are relative to the aperture, it is obvious that if the spire be inclined to the left at a given stage of growth, the addition of a half-turn to the body-whorl will bring the torsion to the right. The same change will happen when the torsion is in a vertical plane: at one stage, if the inclination be forwards, it becomes backwards with the increase of a half-turn.

The application of the terms expressive of the direction of the torsion can only be absolute as to the plane of the twist, that is whether vertical or lateral. It is only possible to extend their application when growth of the shell shall have ceased, or if the shell-growths be periodic and of one or more complete turns. This latter condition is certainly presented by *E. Tenisoni*, as pointed out to me by Dr. Verco, as traces of periodic growths are visible on the spire, and in alignment on the one side. But there are no distinctive features by which to recognise an adult Eulimid.

3. *E. Tenisoni*, Tryon, Man. Conch., vol. VIII., 1886, p. 269, t. 68, f. 16.

E. micans, Tenison-Woods, Proc. Roy. Soc., Tasmania, for 1875, p. 144 (1876), non Carpenter.

The early spire-whorls are very narrow, and impart to the adult shell an almost mucronate termination. The apical whorl is blunt, higher than wide, but it cannot be described as mamillated.

The shell attains to a length of 6 mm., and width of 2.5 mm.; the spire-whorls nine in number; the torsion of the spire is in two directions; aperture roundly oval.

This species makes a near approach to *E. brevis*, Sow. (with the type of which I have made comparison), but the shell is more tortuous, and the body-whorl more depressed.

Distribution.—TASMANIA (*Ten.-Woods*, type); VICTORIA!; SOUTH AUSTRALIA, Holdfast, Aldinga, Streaky, and Fowler Bays, Wauraultie, Spencer Gulf (*R. Tate*, many exs.).

4. *E. commensalis*, *sp. nov.* Pl. iv., fig. 2.

Shell elongate-pyramidal, strongly curved in two directions, translucent, vitreous, fawn-coloured with contained animal; whorls ten, moderately convex; body-whorl globosely inflated, thence rapidly tapering to the acute apex; aperture semi-circular; outer lip much ecurved medially; the front of the aperture is well-rounded, but the margin is slightly reflected, so that seen from behind there is the semblance of basal constriction. Long., 5; lat., 2 mm.

Habitat and Localities.—Commensal with *Amblypneustes*, spp., Holdfast and Aldinga Bays (*R. Tate*, many exs.); Port Stephens, N.S.W. (Aust. Mus.!).

Affinities.—From figures and description, this species resembles *E. parva*, Sowerby, but seems to differ by its more ventricose body-whorl and semi-circular aperture.

5. *E. indiscreta*, *sp. nov.* Pl. iv., fig. 3.

Shell elongate-pyramidal, slightly curved in two directions, translucent, vitreous, colourless. Whorls eight, nearly flat, of regular increase; apex acute; base convex and attenuate at the front; aperture narrowly oval; outer lip much curved medially.

Long., 4.25; lat., 1.5; long. of aperture, 1.5.

Locality.—Shell-sand, Holdfast Bay (*R. Tate*, one ex.); Frederick Henry Bay, Tasmania (*W. L. May*!); Port Stephens, N.S.W. (Aust. Mus.!).

Not much unlike *E. commensalis*, but the whorls are much flatter and the aperture of a different shape. From figures and description this shell has an analogue in the European *E. incurva*, but the aperture appears to be proportionately less elongate in the Australian shell. *E. Petterdi*, Beddome, must be a near ally; it is diagnosed as follows:—"Shining white, curved; apex rounded; whorls 10; aperture narrowly pyriform; lip scarcely reflected; columella straight. Long., 4; lat., 1; apert., 1 m."

FAMILY PYRAMIDELLIDÆ.

GENUS EULIMELLA.

Of the diagnostically-known Australian species of this genus, five species are recorded from North Australia in the "Challenger Mollusca," and two others from New South Wales — *E. moniliformis*, Hedley, and *E. pulchra*, Brazier. In South Australian waters there occur two species, viz. :—

1. *E. moniliformis*, *Hedley*, P.L.S., N.S.W., 1891, p. 247, t. 19, figs. 1-3. Holdfast Bay, in shell-sand (*R.T.*).

2. *E. tricincta*, *sp. nov.* Pl. iv., fig. 4.

Shell small, elongately conical, pellucid-white; apex heterostrophe. Spire-whorls six, somewhat convex, the anterior whorl margining the suture, sculptured by three engraved spiral lines, one median and one near to each suture. Last whorl regularly convex and moderately attenuated at the base. Aperture pyriform; outer lip straight and thin; columella arched, there is no indication of a plait or tooth.

Length, 5.5; breadth, 1.75 mm.

Has somewhat the aspect of *Syrnola jucunda*, but apart from the different generic characters, the shell is narrower and the last whorl proportionately much longer.

Localities.—Streaky and Fowler Bays, in shell-sand (*R.T.*).

GENUS ODONTOSTOMIA.

1. *Odontostomia* (*Syrnola*) *infrasulcata*, *sp. nov.* Pl. iv., fig. 5.

Shell narrow-lanceolate, about four times as long as wide, shining, white, feebly striated in an axial direction. Apex heterostrophe. Spire-whorls nine, flat, suture linear. Body-whorl imperforate, subangulate at the periphery, below which are about six revolving incised lines, the posterior one a little in front of the posterior angle of the aperture. Aperture narrow-oval; columella-plait very prominent, in front of which the inner lip is effusively expanded, and its margin reflected; outer lip not ribbed within.

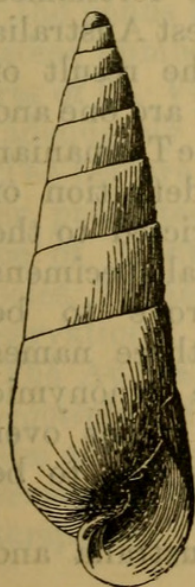
A specimen in Dr. Verco's collection has two sulci on the last whorl above the periphery, one of which is continued submedially on the spire-whorls.

Length, 11; breadth, 3.5 mm.

Localities.—Holdfast Bay, St. Vincent Gulf, and Wauraultie, Spencer Gulf, in shell-sand (*R.T.*). Dredged off Rapid Head in 10 to 12 fathoms by Dr. Verco.

Affinities.—This new species is conspicuous by its elongate-oval aperture, effuse at the front and the sulci on the base of the body-whorl. It seems to have no near ally among figured species, though *S. gracillima* is a micromorph of it as regards shape.

Supplemental Note.—The annexed figure of *O. (Syrnola) Jonesiana*, described in Part I of the present volume, p. 70, is added for comparison with the present species, between which there are great resemblances.



2. *Odontostomia* (*Pyrgulina*) *Mayii*, *sp. nov.* Pl. iv., fig. 6

Shell conoidally turreted, relatively solid, dull white. Whorls five (excl. the heterostrophe apex), separated by a deeply and broadly channelled suture; ornamented by rounded obliquely axial ribs wider than the interspaces, which are not visibly sculptured. Last whorl with about 20 axial ribs, which terminate at a spiral groove on the periphery; base somewhat flattened and radially ridged, defined by a spiral rib, which margins the peripheral groove. Aperture oval, outer and inner margins joined by a callus, columella-plait stout, almost parietal.

Length, 2.5; breadth, 1.0 mm.

Localities.—D'Entrecasteaux Channel, Tasmania, whence type-specimen in my collection received from Mr. W. T. May, after whom the species is named.

Remarks.—There are several European species of this type of ornamentation presented by *O. Mayii*, such as *O. turbonilloides*, and one Australian species, *O. Henni*, Brazier. From the latter this new species differs (judging by description and figure) by its channelled suture, oblique and stout ribs, and ribbed base.

GENUS TURBONILLA.

Turbonilla erubescens, *Tate*.

1877. *Elusa bifasciata*, Tenison-Woods, Proc. Roy. Soc., Tasm., for 1876, p. 150; non *Turbonilla bifasciata*, A. Adams, 1861.

1877. *Turbonilla festiva*, Angas, Proc. Zool. Soc., p. 35, t. 5, f. 4; non Folin, 1867.

1879. *Turbonilla erubescens*, Tate, Trans. Roy. Soc., S. Aust., ii., p. 138, t. 5, f. 10.

The types which served for the definitions of the forenamed shells are from Tasmania, New South Wales, and West Australia (King George Sound). Mr. May is satisfied, as the result of comparison of authentic specimens, that the first two are one and the same; I have arrived at a like result in respect of the Tasmanian and West Australian shells. At the time of my definition of *T. erubescens*, my knowledge of *T. festiva* was restricted to the published description and figure; but now, with actual specimens before me, I find that the alleged differences prove to be invalid. The question remains as to which of the three names should be employed; as indicated in the above synonymic schedule *bifasciata* and *festiva* have prior use in the genus over their Australian applications, this leaves *erubescens* free to be employed.

The species is also known to me from South Australia and Victoria.

Turbonilla Beddomei, *Petterd, sp.*

1884. *Chemnitzia Beddomei*, Petterd, Jour. Conch., p. 136.

1892. *Turbonilla crenulifera*, Tate, Trans. Roy. Soc., S. Aust., xv., p 126, t. 1, f. 2.

The specimens, attributed to Petterd's species, given me by Mr. May, leave no doubt of the identity of my shell therewith, though the diagnosis of the Tasmanian shell does not refer to the tendency of decresence of the costæ on the anterior aspect of the whorls, and to crenulation at the posterior suture.

So far as known to me, the species is restricted to South Australia and Tasmania.

Turbonilla varicifera, *Tate, 1898.* Pl. iv., fig. 7.

Shell elongate turreted, about four times as long as broad usually of a chestnut-brown colour, with the varices mottled with white, but various shades passing to white occur. Spire-whorls twelve in a length of fifteen millimetres, tipped by a heterostrophe protoconch; flatly convex, but separated by a well-defined suture; ornamented by close-set, slightly oblique, rounded, axial ribs, separated by much narrower interspaces, here and there two or more costæ are confluent to form a broad varix; the whole surface is crossed by incised spiral lines increasing to about fifteen on the penultimate whorl of a large specimen. Last whorl with axial costæ, about twenty, evanescent at the regularly rounded periphery; base spirally linear-sulcate; aperture oblong, columella with an obscure spiral plication.

Long., 15 mm.; lat., 4.00 mm. A micromorph of twelve spire-whorls measures 10 mm. by 2.5 (vix) mm.

This species has been represented in my cabinet for many years by incomplete beach-examples, which indicate a very large shell for the genus and the possession of varices. Its recent discovery in some numbers by Dr. Verco, through dredgings in the deeper parts of St. Vincent and Spencer Gulfs, has, now, made it possible to adequately diagnose the shell.

The feature of the variced spire, though exceptional, is however, presented by the recent species, *T. striatula*, Linne (the type of Montserrato's Section *Pyrgostylus*) and the Miocene species, *T. intermedia*, Grateloup; both of which I have under observation.

The Australian species, making the third enumeration under *Pyrgostylus*, differs from *T. striatula*, chiefly by its straighter costæ and narrower interspaces; and is distinguishable from *T. intermedia* by slenderness, less oblique ribs with narrower interspaces.



Tate, Ralph. 1898. "On some Australian species of Eulimidae and Pyramidellidae." *Transactions of the Royal Society of South Australia* 22, 80–85.

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