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# THE NEW SOUTH WALES CANCELLARIIDAE\*

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(Figures 1-13.)

## INTRODUCTION.

Hedley in his Check List in 1918 recorded six species of this family as occurring in New South Wales. Since that time considerable revision in nomenclature has taken place, and some further material has come to hand. As descriptions and references to the family are very scattered in literature, the opportunity is now taken to bring them together, and to illustrate not only species new to science, but also all those which have already been described. It is felt that such papers are of great convenience to conchologists and form a base on which future work can be undertaken. The complete check list of species from the Peronian zoogeographical province will now read as follows:

*Sydaphera renovata* Iredale  
    "    *obnixa* Iredale  
    "    *anxifer* Iredale  
    "    *delicosa* Laseron  
    "    *scobina* Hedley  
*Trigonaphera vinnula* Iredale  
    "    *interlaevis* Laseron.  
*Arizelostoma laseroni* Iredale  
*Pepta stricta* Iredale  
*Microsveltia recessa* Iredale  
*Pallidonia simplex* Laseron.

All types, as well as specimens illustrated, are being presented to the Australian Museum, Sydney.

## DESCRIPTION OF SPECIES.

Genus **Sydaphera** Iredale, 1929.

Genotype, *Sydaphera renovata* Iredale.

Beyond designating the genotype Iredale gives no generic description. The separation of this group from the European *Cancellaria* is justified, however, inasmuch as *Cancellaria* proper has a narrow umbilicus while *Sydaphera* is imperforate, and in *Cancellaria* the spiral sculpture is much stronger, producing a cancellate surface. The general form of the shell is similar.

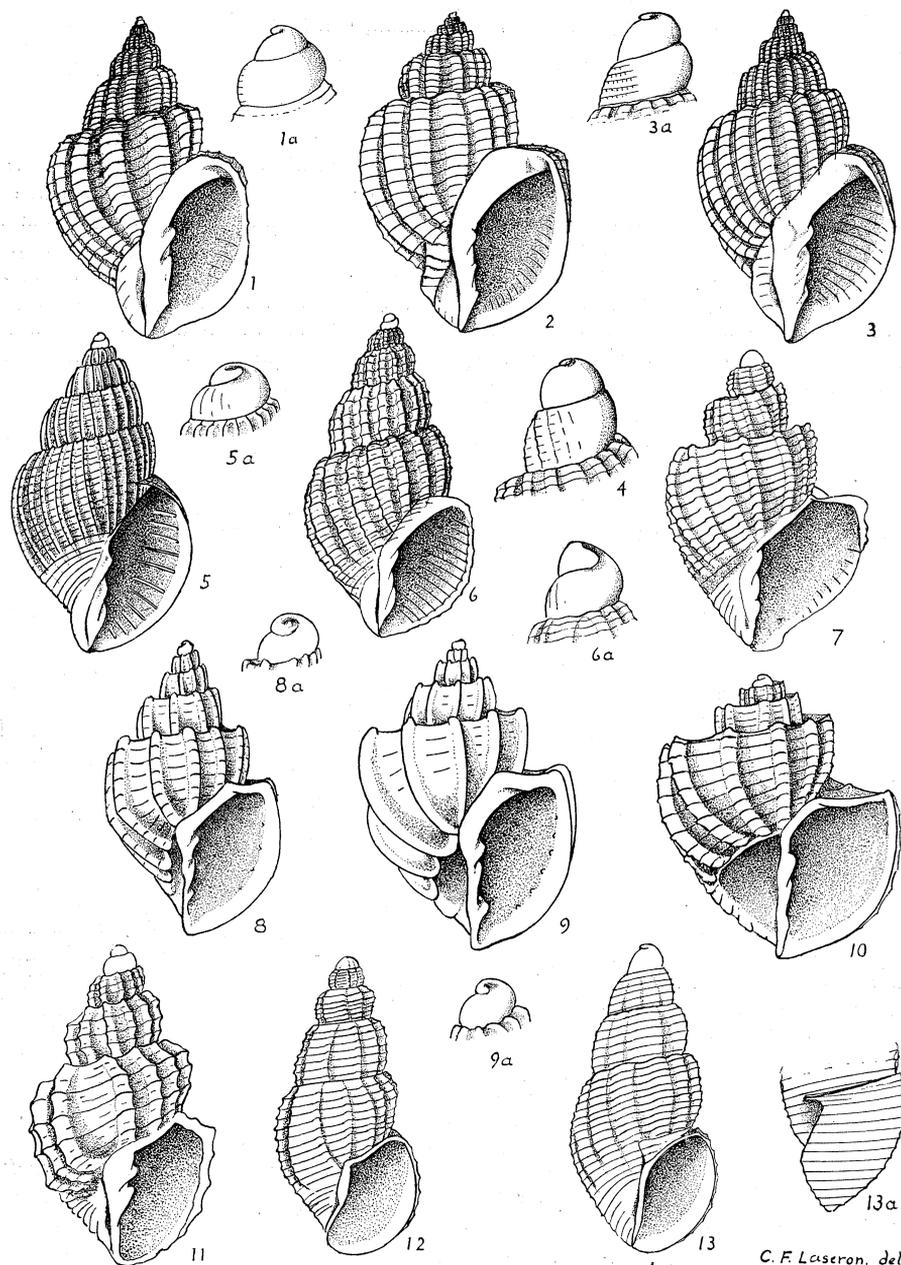
**Sydaphera renovata** Iredale.

(Figs. 1, 1a, 2.)

*Australian Zoologist*, v, 1929, p. 341.

This is the common Sydney Harbour shell listed as *Cancellaria australis* Sowerby, No. 802 in Hedley's Check List. In the synonymy of this species, May in 1923 considered that *C. undulata* Sowerby should replace *australis*, and other conchologists have since concurred in this nomenclature. Iredale, when proposing his genus *Sydaphera*, also separated the New South Wales species from *undulata*, the type of which came from Tasmania, remarking that the Sydney shell was larger, narrower, and with fewer and broader transverse ribs. More important differences than this, however, lie in the protoconch and sculpture. The protoconch of *undulata*

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Figures 1 to 13.

1, 2, *Sydaphera renovata* Iredale (1a, protoconch); 3, *Sydaphera obniza* Iredale (3a, protoconch); 4, *Sydaphera undulata* Sowerby, protoconch; 5, *Sydaphera delicosa* Laseron (5a, protoconch); 6, *Sydaphera anxifer* Iredale (6a, protoconch); 7, *Sydaphera scobina* Hedley and Petterd (after Hedley); 8, *Trigonaphera vinnula* Iredale (8a, protoconch); 9, *Trigonaphera interlaevis* Laseron (9a, protoconch); 10, *Arizelostoma laseroni* Iredale; 11, *Microsvelltia recessa* Iredale; 12, *Pepta stricta* Hedley; 13, *Pallidonia simplex* Laseron (13a, sinus).

is more than twice the size of that of *renovata*, its length being 2 mm. while that of *renovata* is less than 1 mm. The spiral sculpture of *undulata* is also much stronger, consisting of well defined ribs instead of narrow threads as in *renovata*. For comparison the protoconch of a North Tasmanian specimen of *undulata* is here shown (Fig. 4). As the protoconch of *renovata* has not yet been figured this is also shown (Fig. 1a). Sydney specimens of *renovata* vary slightly, some being comparatively broader. Figure 1 is from 6 fathoms in Sydney Harbour, its length 31 mm. Figure 2 is an exceptionally large and broad specimen from Cronulla 46 mm. in length. Specimens have also been taken alive well out on the continental shelf in from 30-35 fathoms off Crookhaven.

**Sydaphera obnixa** Iredale.

(Figs. 3, 3a.)

REC. AUST. MUS., xix, 1936, p. 318, Pl. xxiii, fig. 6.

Iredale separated *obnixa* from *renovata* as having a greater number of transverse ribs and by the coloration, *obnixa* having narrow brown spiral bands, while *renovata* is uniformly creamy-white. Each form has its distinct geographical range, *obnixa* being confined to the north coast of New South Wales, while *renovata* lives from Sydney southwards. There is some doubt as to whether the difference between the two forms is fully specific or merely racial. Specimens have been seen suggesting that the two converge towards each other, but as a rule there is little difficulty in recognizing them, though worn specimens are apt to be confusing. It has been noticed that, in older specimens of *obnixa*, the ribs may become almost obsolete on the last half of the body whorl. The protoconch is very similar, identical in size, but the initial whorl of *obnixa* is relatively a little larger. The specimen figured is from Forster, its length 39 mm.; the protoconch is from a young specimen collected by Miss Thornley from Angowrie.

**Sydaphera delicosa** sp. nov.

(Figs. 5, 5a.)

Shell relatively small, conical, spire elevated, creamy-white. Protoconch small, about one mm. in length, summit rather flat, nucleus cup-shaped, rapidly expanding, incipient sculpture appearing gradually on the second whorl. Adult whorls four, rounded, restricted at the sutures, slightly flattened below them. Sculpture primarily axial, consisting of numerous narrow, rounded ribs, about 24 to the whorl, fading on the base. The spiral sculpture is fine, consisting of numerous threads, which override the transverse ribs, but not strongly enough to produce a cancellation. Aperture with a thin rounded outer margin, lirate within, peristome incomplete, practically no callus on the inner margin, columella straight, imperforate, flattened at the anterior end, with a slight hollow but no umbilicus, columella folds three, the posterior nearly transverse, the median one oblique, the anterior one slight. Length 24 mm., width 11 mm., aperture 13 mm.

*Locality*.—Woolgoolga.

*Remarks*.—This is by far the most finely sculptured of the local species, and it cannot be readily confused with any other.

**Sydaphera anxifer** Iredale.

(Fig. 6, 6a.)

REC. AUST. MUS., xiv, 1925, p. 264, Pl. xliii, fig. 24.

Closely allied to the Tasmanian species *purpuriformis* Kuster, from which it differs by its larger size, more robust shell and by being lirate within the aperture. The specimen figured is from 30-35 fathoms off Crookhaven, and is 30 mm. in length; the protoconch is from an immature specimen collected by Miss Thornley from Port

Stephens. This species is easily recognized by its long narrow spire and the short aperture, only about two-fifths of the total length. Together with the Tasmanian *purpuriformis* it seems closely linked with a group of fossil species, notably *Cancellaria exaltata* Tate and *C. epidromiformis* Tate from the Muddy Creek Beds (Miocene) of Victoria.

**Sydaphera scobina** Hedley and Petterd.

(Fig. 7, after Hedley.)

REC. AUST. MUS., vi, 1906, p. 222, Pl. 38, fig. 12.

A deep-water species, the type came from 300 fathoms east of Sydney, and was only 8 mm. in length. Its systematic position has been considered doubtful, as Hedley in the following year reduced it to a varietal form of the Tertiary fossil *Cancellaria micra* Tate, and in his Check List placed it under the genus *Admete*. Iredale in 1924 considered it should be restored to *Cancellaria*. The type, however, may not be mature, as it has only three instead of the usual four whorls, and the aperture does not seem fully formed. The sculpture, the straight columella with three folds, and the lack of an umbilicus all suggest *Sydaphera*, and with another whorl it would probably fall typically into this genus.

Genus **Trigonaphera** Iredale, 1936.

Genotype, *Trigonostoma vinnulum* Iredale, REC. AUST. MUS., xix, 1936, p. 319.

The use of *Trigonostoma* for this and various Queensland shells is certainly untenable, for the genotype *Trigonostoma trigonostoma* is a unique South African species quite unlike any other known. *Trigonaphera* forms a natural group having a sub-trigonal aperture, straight columella with three folds, turreted shells with strong transverse ribs and faint spiral sculpture, and with a deep umbilicus penetrating the axis of the shell.

**Trigonaphera vinnula** Iredale.

(Figs. 8, 8a.)

REC. AUST. MUS., xiv, 1925, p. 263, Pl. xliii, fig. 18.

This replaces *Cancellaria antiquata* Hinds, No. 801 in Hedley's Check List. *C. antiquata* was recorded from Sydney Harbour by Angus in 1877, but numerous specimens which have since come to hand show that it only superficially resembles the type which came from New Guinea. The specimen is one of a series from 30-35 fathoms off Crookhaven, its length 16 mm. The protoconch (Fig. 8a) is here figured for the first time. It consists of 1½ whorls, with a minute nucleus, set rather obliquely to the main axis of the shell.

**Trigonaphera interlaevis**, sp. nov.

(Figs. 9, 9a.)

Shell broadly turreted, white or cream (may be faded). Protoconch naticoid, 1½ whorls, the nucleus small, slightly oblique. Mature whorls four, turreted, excavated above the periphery making a hollowed shelf to the sutures. Sculpture strongly transverse, consisting of strong raised rounded ribs, about 10 to the whorl, separated by flat intercostal spaces about twice the width of the ribs. The ribs continue over the sharp angle of the periphery to the suture, dividing the hollowed shelf into rounded compartments. The ribs continue on to the base, fusing as they bend into the deep umbilicus. Spiral sculpture is almost entirely absent, and is only visible under the lens as very faint threads. Aperture sub-trigonal, outer and upper margin corresponding to the form of the last transverse rib, narrowed anteriorly, inner margin straight, reflected to overhang the umbilicus and to form a thick layer of callus on the body whorl, columella straight and narrow with three prominent folds, the centre one oblique, umbilicus broad and deep. Length 14 mm., breadth 9 mm.

*Localities.*—Port Stephens (type); specimen in Australian Museum, C.10646, collected by C. Hedley; a number of specimens from the beach at Woolgoolga.

*Remarks.*—This is evidently the species recorded in the Check List, No. 803, as *Cancellaria costifera* Sowerby. There has always been uncertainty as to the identity of this species in New South Wales. When Angas recorded it in 1877 he spoke of it as a dwarf variety, and the type itself is labelled as *C. costifera* var. A specimen of what may be the true *costifera* from the Queensland coast differs chiefly in its more pronounced spiral sculpture and by being strongly lirate within the aperture. Compared with *T. vinnula*, *interlaevis* is broader, with rounded instead of straight sides, a broader umbilicus, and fainter spiral sculpture.

Genus **Arizelostoma** Iredale, 1936.

Genotype, *Arizelostoma laseroni* Iredale.

*Arizelostoma* may be looked upon as an extreme form of *Trigonaphera* in which the spire is further depressed so that the earlier whorls are partly hidden behind the angulated periphery of the whorls, the transverse ribs are fused together on the base forming a bar surrounding the extremely wide rounded umbilicus, and the triangular mouth is more exaggerated. The aperture is also almost free, only a short portion being reflected back and attached to the body whorl. Justification of the separation generically of *Arizelostoma* from *Trigonaphera* will depend largely on the individual view of conchologists as to what constitutes true genetic values.

**Arizelostoma laseroni** Iredale.

(Fig. 10.)

REC. AUST. MUS., xix, 1936, p. 318, Pl. xxiv, fig. 9.

The type locality is Shellharbour, where specimens are occasionally washed up on the beach. The specimen figured is, however, from Point Halliday, its length 17 mm., and width 14 mm. It is a very striking species, though rare, and cannot be readily confused with any other on the coast.

Genus **Microsveltia** Iredale, 1925.

Genotype, *Microsveltia recessa* Iredale.

Shell small, broadly conical, sculpture of strong axial ribs crossed by spiral threads, aperture subtriangular, columella with two plaits only, a slight umbilical chink. In general form it resembles *Sydaphera*, but is much smaller, and it also has only two columella plaits instead of three.

**Microsveltia recessa** Iredale.

(Fig. 11.)

REC. AUST. MUS., xiv, 1925, p. 265, Pl. xliii, fig. 16.

The figure is drawn from the type in the Australian Museum which came from 75 fathoms, off Bateman's Bay. Its length is 6 mm., and width 3.5 mm. This is similar to, but not the same as, *Cancellaria exigua* Smith, described from 410 fathoms, off Port Jackson. This is the disputed station of the "Challenger" Expedition, where a number of species from the North Atlantic were recorded as off the New South Wales coast. *C. exigua* should, I think, be removed from the New South Wales list.

Genus **Pepta** Iredale, 1925.

Genotype, *Admete stricta* Hedley.

Shell small, narrowly ovate, protoconch of a single dome-shaped whorl, sculpture of undulating axial ribs overridden by spiral cords, aperture short and rounded, the columella with a single broad fold behind which is a narrow umbilical chink. The classification is uncertain, but as the limited material conforms generally to other members of the Cancellariidae it may provisionally be retained in that family.

**Pepta stricta** Hedley.

(Fig. 12, after Hedley.)

Hedley, *Admete stricta*, REC. AUST. MUS., vi, 1907, p. 295, Pl. 54, fig. 10.

The type locality is 80 fathoms, off Narrabeen, the dimensions given being length 4.5 mm., width 1.76 mm.

Genus **Pallidonia**, gen. nov.

Genotype, *Pallidonia simplex* Laseron.

A small genus of uncertain classification with an ovate shell, few whorls, simple dome-shaped protoconch, weak axial but stronger spiral sculpture consisting of regular evenly spaced cords, aperture short and rounded, outer margin simple but with a wide subsutural sinus, no anterior canal, columella without a fold but slightly flexed, behind it a narrow umbilical chink.

The systematic position of this genus is very doubtful, and it is only placed provisionally in the Cancellariidae because of its general resemblance to *Pepta stricta*, and because there is no other family in which it will satisfactorily fit. The wide posterior sinus alone suggests the Turridae, but the absence of an anterior canal precludes that family. In some ways it resembles *Lironoba* in the Rissoidae, but again the sinus prevents its inclusion there. It is quite possible it represents a new family, and relationship may be sought in the Australian Tertiary rather than elsewhere.

**Pallidonia simplex**, sp. nov.

(Figs. 13, 13a.)

Shell small, elongate-ovate, white. Protoconch rather worn, but short, a minute apical whorl, the next whorl apparently smooth. Remaining whorls three, rounded, sutures impressed, not excavate at the base, body whorl more than half the length. Sculpture of weak, broad, rounded axial ribs, about 10 to the whorl, overridden by strong rounded cords with narrow interstices, seven on the penultimate whorl, about 15 on the body whorl, persisting to the base. Aperture short and rounded, outer margin thin, with a broad subsutural sinus with a sloping shoulder, broadly rounded anteriorly, and no anterior canal. Inner margin nearly straight and only slightly flexed, the columella smooth with a callus continuing to complete the peristome, a slight smear of callus on the body whorl above. Behind the columella is a narrow umbilical chink. Length 3.9 mm., width 1.7 mm.

*Locality*.—Dredged 8-10 fathoms, off Point Halliday.

*Remarks*.—The only Peronian species with which this can be compared is *Pepta stricta* Hedley, from which it differs by the weaker axial and stronger more rounded spiral cords, by the absence of a fold on the columella, and of course by the sinus in the outer margin.