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MYSTICONCHA, A NEW GENERIC NAME FOR CALEDONIELLA BASEDOW, NON SOUVERBIE.

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(Plates xxv-xxvi and Figure 1.)

The presentation recently to the Australian Museum collection of a mollusc trawled off Cape Everard, Victoria, by Captain K. Moller, a keen collector who has given much valuable material to the museum, has disclosed some interesting facts concerning the generic and specific name of a similar species from Backstairs Passage, St. Vincent Gulf, South Australia.

Basedow¹ gives the new specific name *contusiformis* (Pl. xxvi, figs. 6-9) and colour variety names *testudinis*, *pulchra*, and *labyrinthina* to a large naked mollusc dredged in South Australia, and places it in the genus *Caledoniella* Souverbie², a genus made for a small, snail-like, parasitic mollusc from New Caledonia, described as fragile, with fine radiating striæ, and covered with a fine yellow epidermis. Later, from a further note³, we learn that two examples of this mollusc were sent from New Caledonia by Montrouzier, with a simple note attached to the first that it was found living parasitic between the thoracic legs of a *Gonodactylus* ("Trouvée vivante entre les pattes thoraciques d'un *Gonodactyle*"), a marine crustacean. The most important characters of this species were that it was a parasitic form, it possessed an epidermis, was depressed oval-orbiculate in shape, and was only 5-7 mm. in diameter and 4 mm. high, with an aperture $4\frac{1}{4}$ mm. wide and $3\frac{1}{4}$ mm. high. In order that this interesting species should have a place in nomenclature, Souverbie gave to it the name *Caledoniella montrouzieri* (Pl. xxvi, fig. 3), but the disposition of it in a family he left to later authors. Tryon⁴ placed it in the family Naticidae, but Fischer⁵ had previously placed it in the family Lamellariidae, where it still remains.

It is apparent from the description of this shell and its parasitic habit that Basedow very erroneously placed his species in the genus *Caledoniella*. It can only be surmised that he could not have seen the later note on it or the figures, otherwise he would have realised how very dissimilar the two molluscs are. The most outstanding external character is that Basedow's species is a naked mollusc, a large, soft animal, and only on dissecting it along the dorsal surface is a thin large shell found, completely enclosed by the dorsal skin or mantle of the animal. The species *Caledoniella montrouzieri*, on the other hand, is founded on a shell which is definitely external. The animal, which must have been known to Montrouzier, since the specimens were found in their live state, was disregarded in both descriptions of the shell. A mollusc possessing a completely internal shell cannot be the same genus as one having a wholly external shell which envelops a small animal. Basedow's own excellent drawings of his species and its internal shell, apart from his good description, quickly show their dissimilarity.

¹Basedow, Trans. R. Soc. S. Austr., xxix, 1905, p. 181-5, pls. xxviii-xxix.

²Souverbie, Journ. de Conch., xvii, 1869, p. 421.

³Souverbie and Montrouzier, Journ. de Conch., xviii, 1870, p. 71-2, pl. ix, fig. 4.

⁴Tryon, Man. of Conch., viii, 1886, p. 12.

⁵Fischer, Man. de Conch., 1885, p. 764.

It has for some time been my habit when an interesting specimen comes to the conchological department of the museum to make a quick sketch of it for later reference, especially if it is a specimen likely to suffer through preservation, and I have found this most useful, especially in the case of nudibranchs. A few years ago a specimen of *Gonodactylus* (Pl. xxvi, fig. 1), collected by Mr. Melbourne Ward, came with other material from Albany Passage, Cape York, Queensland, and as this was found to have some small shells living parasitically on the ventral surface between the legs, I made some rough sketches, which have been until now with papers belonging to the Conchologist, Mr. T. Iredale. From these drawings it can be seen that the shell belongs to the same genus *Caledoniella* as Souverbie's New Caledonian specimens, which makes it more apparent still that Basedow's one does not belong to it. The Queensland species, from its size and general appearance, is probably the same as *Caledoniella montrouzieri*, but the examination of that can be left for another occasion.

It is necessary, therefore, to create a new genus for the species named by Basedow, *Caledoniella contusiformis*, and varieties *testudinis*, *pulchra* and *labyrinthina*. Cotton and Godfrey⁶ raise these to specific rank, but I think they are better left as colour varieties (as Basedow suggested), and so I propose the generic name *Mysticoncha* for the species.

As to the specific name of this species, further difficulty arises. Basedow⁷ mentions that E. A. Smith⁸ has described a new species of mollusc dredged in Port Phillip Bay, closely allied to his species, but does not consider it a fair criterion to make comparison from the description of this, which is from a contracted specimen. On reading the description of Smith's species, *Lamellaria wilsoni* (Pl. xxvi, fig. 5), however, I consider that it agrees with Basedow's species sufficiently, and, considering the locality, strongly enough to be the same, therefore making *Caledoniella contusiformis* Basedow, with its three varieties, *testudinis*, *pulchra* and *labyrinthina*, synonymous with *Lamellaria wilsoni* Smith, an earlier species. Smith places his species in the genus *Lamellaria* because its shell most resembles that species, but says the dentition more nearly approaches *Marsenina*, but as the drawings accompanying Basedow's description of his species, those in Smith's article, and now those of the shell of the species recently trawled off Cape Everard, show that this mollusc is not of the genus *Lamellaria*, *Caledoniella contusiformis* Basedow now becomes *Mysticoncha wilsoni* Smith.

To go back to the genus *Caledoniella* Souverbie, it is interesting to note here that Preston⁹ creates a new genus and species, *Epistethe gonodactyli* (Pl. xxvi, fig. 4), for a small, thin, snail-like shell found living parasitically on the ventral surface of a stomatopod crustacean, *Gonodactylus chiragra*, from the Persian Gulf. As no reference in his account of this species is given to Souverbie's species from New Caledonia, I presume he was unaware of this paper, and thus created a new genus for a species which, from the description and figures he gives, is obviously the same genus as that of Souverbie, and, therefore, *Epistethe* Preston becomes a synonym of *Caledoniella* Souverbie. Two other genera of parasitic shells, *Robillardia* Smith (1889) and *Cochliolepis* Stimpson (1859), though somewhat resembling the others, are

⁶Cotton and Godfrey, S. Austr. Nat., xiii, Nov., 1931, p. 23.

⁷Basedow, Trans. R. Soc. S. Austr., xxix, 1905, p. 185.

⁸Smith, Ann. Mag. Nat. Hist. (5), xviii, 1886, p. 270, woodcut.

⁹Preston, Rec. Indian Mus., vii, 1912, p. 126-7.

parasitic on different types of animals, the former on *Echinus*, the latter between scales on a certain species of annelid worm. It is doubtful, however, whether these genera, on account of their different hosts, would be the same as those parasitic on *Gonodactylus*.

Family **LAMELLARIIDAE.**

Genus **Mysticoncha**, nov.

Orthotype, *Lamellaria wilsoni* Smith, identified from material trawled off Cape Everard, Victoria.

Animal.—Body ovoid, smooth, dorsal shield or mantle thick, large, verrucose, with the edges tucked in along the sides, and, when contracted, almost completely enclosing the foot. Notched anteriorly, and produced into an imperfect siphon. Head differentiated from the rest, eyes distinct, blue-black, placed on prominences on the outer bases of the tentacles, which are tapering and flattish-cylindrical. Foot truncated, horizontally slit anteriorly, and dilated into wing-like expansions, the slit continuing well down them. Mandibles strong and corneous. Radula long, narrow and ribbon-like, dentition 2.1.1.1.2.

Shell.—Shell completely internal, thin, large, globose, spire small, few-whorled, body whorl large, whitish-buff coloured.

Hab.—South Australia and Victoria.

Thiele¹⁰ places *Caledoniella* Souverbie in the family *Lamellariidae*, but on the description of Basedow's animal and shell, and it certainly seems that *Mysticoncha* (*Caledoniella* Basedow) is more correctly placed in this family than is *Caledoniella* Souverbie.

Mysticoncha wilsoni (Smith).

(Pl. xxv.)

Lamellaria wilsoni Smith, Ann. Mag. Nat. Hist. (5), xviii, 1886, p. 270 and fig. Port Phillip Bay, South Australia (i.e., Victoria). Holotype in British Museum.

Caledoniella contusiformis Basedow, Trans. Roy. Soc. S. Austr., xxix, 1905, p. 183, pl. xxviii, fig. 1, and pl. xxix, fig. 1-8. Backstairs Passage, St. Vincent Gulf, South Australia, 25 fathoms.

C. contusiformis vars. *testudinis*, *pulchra*, and *labyrinthina* Basedow, *ibid.* p. 185, pl. xxviii, fig. 2-4, St. Vincent Gulf, South Australia.

Animal.—Large and almost pleurobranch-like in appearance, mantle thick and fleshy, smooth, devoid of any pustulation or granulation, and much larger than foot. Body arched and sides tucked in round the foot, and almost closing over it. Between the mantle and foot is a distinct head, with a long tapering tentacle on each side, each bearing a blue-black eye on the outer side of a basal prominence. The mouth is large and rounded. The foot is small in comparison with the size of the animal, is broad anteriorly and bluntly pointed posteriorly. At the anterior end the sides are dilated into wing-like expansions, the horizontal slit at this end extending

¹⁰Thiele, Handb. der Syst. Weicht., Jena, 1929, p. 265.

well down these expansions. Gill very small in the specimen examined, and could only be seen by forcing back the mantle margin. The gill was situated on the dorsal part of the animal, just behind the head, and extended from there round to the right side of the foot, terminating just about where the foot became free. It seemed to be attached for most of its length. On dissecting the specimen for the radula and jaws, the buccal cavity was found to contain a mass of orange-coloured pulp, probably food in the process of digestion. The jaws are very large, horny, almost tan coloured, flat, the convex side of each part heavily serrated with about twelve large serrations and a few smaller ones. A strong ridge run from each serration to the concave side, and each platelet thus formed shows fine oblique lines on it. They are 8 mm. long and 4 mm. broad. The radula is long and ribbon-like, with about 92 rows of large, conspicuous teeth, making strong ridges down the ribbon. The teeth are glassy, and the arrangement of the dentition is 2.1.1.1.2. The central tooth is subquadrangular and serrated, and the marginals narrower than the laterals. Length of radula, 25 mm.; breadth, 2 mm. The specimen was a female, with the generative opening on the right side behind the tentacle, but further dissection of it was not deemed advisable as only one specimen had been collected and this was in a rather contracted state.

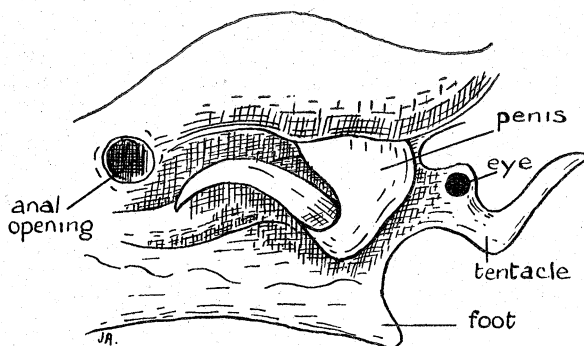
Although the animal was very contracted through preservation, most of the colour marking was distinct and easily seen. The ground colour of the animal was yellowish-white, but probably was brighter in life. On the dorsal surface were broad conspicuous brown-black lines which irregularly connected up forming roughly five or six sided areas inside which were very large rounded blotches of the same colour. Sometimes a complete circle of the dark colour also enclosed the spot and some of the areas had within them as well as the blotches and rings, minute dashes of the dark colour. The marking was outstandingly conspicuous. Owing to the sides of the dorsal surface being curled in round the foot it was impossible to see what colour its undersurface was or whether it had similar markings. The foot, however was uniform bright orange-red, only the tips of the tentacles and the edges of the dilated part of the foot being black. In its contracted state, the animal measured 50 mm. by 40 mm. and was about 40 mm. high.

Shell.—The large globose shell was entirely internal, but could be removed easily by dissecting practically along the whole length of the dorsal surface, where it was found occupying almost all this area, and enclosing the spiral-shaped visceral mass of the animal. The shell is very thin, cream coloured, with three small whorls forming the spire, and a very large body whorl. In its natural position the spire seems slightly channeled at the sutures, giving it a depressed appearance; but I noticed that it is possible to force the spire out, making it a more typical one. The outer lip of the body whorl seems to arch to a point where the base of the aperture meets it, but as the shell is so thin the minute it is out of preservative it is liable to crinkle into ridges, and this may be such a one. There are growth lines on the shell, giving it a faintly striated appearance. The texture of the shell is almost similar to that of certain species of *Tethys*, and it is this thin shelly matter, easily rubbed off, which I think, Basedow considered to be epidermis in his specimens. The measurement of the shell is 38 mm. long by 33 mm. wide.

Locality.—Trawled off Cape Everard, Victoria, by Captain K. Møller. Australian Museum Collection, Regd. No. C. 59324.

I consider this specimen identical with Basedow's typical form, and not with any of the three colour varieties, as it most resembles this form in its colour marking.

Since preparing the above description, I have found another specimen of this interesting mollusc in the Museum collection and labelled *Pleurobranch* sp. It was collected in 1904 by the "Endeavour" off Davenport, Tasmania, and is in a fairly good state of preservation. The specimen, though faded, is still a uniform pink colour above and orange tinged below, and has lost all pattern on the upper surface except the small black spots. In this state, the spots resemble those on Basedow's figure of his variety *testudinis*, but this is possibly due to the original pattern having disappeared, and in general appearance it resembles the Cape Everard specimen. The "Endeavour" specimen is a male, with a large penis extruded from the side of the foot just behind the right eye-bearing tentacle. The penis is broad at the base, tapers towards the end, is flattened, and about one-fourth of an inch long. It is not retracted into an opening, but occurs simply as a surface protrusion. Further along the side of the foot and posterior to the gill is a large, rounded opening—the anal opening. By the addition of this specimen, with its strongly pronounced external penis, to the species, the other specimen of which is a female, establishes the fact that in this type of mollusc the sexes are distinct. Basedow gives no indication of the sex of the specimens he described.



Penis of *Mysticoncha wilsoni* (Smith) from Davenport, Tasmania. Collected by F.I.S. "Endeavour."

EXPLANATION OF PLATES.

PLATE XXV.

Mysticoncha wilsoni (Smith).

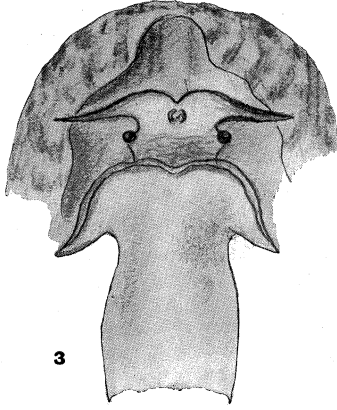
- Fig. 1.—View of the dorsal surface of *Mysticoncha wilsoni*. Trawled off Cape Everard, Victoria.
 Fig. 2.—Ventral view of the same.
 Fig. 3.—View of the head and anterior end of the foot of *Mysticoncha wilsoni*. Slightly enlarged.
 Fig. 4.—Radula of *Mysticoncha wilsoni*. Enlarged.
 Fig. 5.—A lateral tooth from the radula.
 Fig. 6.—A central tooth from the radula.
 Fig. 7.—Two marginal teeth from the radula. All greatly enlarged.
 Fig. 8.—The internal shell of *Mysticoncha wilsoni*.
 Fig. 9.—The shell exposed *in situ* after a slit has been made in the dorsal part of the mantle sheath.
 Fig. 10.—The visceral mass of *Mysticoncha wilsoni* after the shell enclosing it has been removed.
 Figs. 11 and 12.—Jaws of *Mysticoncha wilsoni*. Enlarged.

PLATE XXVI.

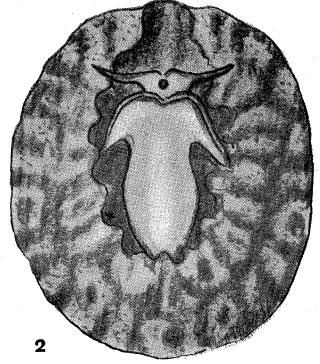
- Fig. 1.—A species of *Gonodactylus* from Queensland, with two parasitic shells of the genus *Caledoniella*, *in situ*.
- Fig. 2.—The parasitic shell enlarged.
- Fig. 3.—Two views of *Caledoniella montrouzieri* Souverbie.
- Fig. 4.—Two views of *Epistethe gonodactyli* Preston.
- Fig. 5.—The shell and teeth from the radula of *Lamellaria wilsoni* Smith. The original drawing of the shell is about two-thirds its natural size.
- Figs. 6 and 7.—Two views of the internal shell of *Caledoniella contusiformis* Basedow.
- Fig. 8.—*Caledoniella contusiformis* Basedow, showing position of shell in respect to the animal.
- Fig. 9.—One part of the jaw or mandible of *Caledoniella contusiformis* Basedow.



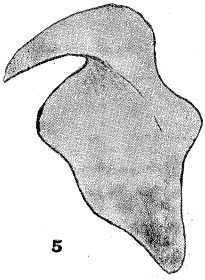
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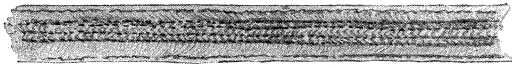
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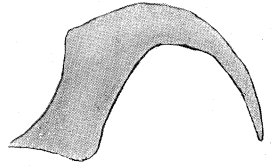
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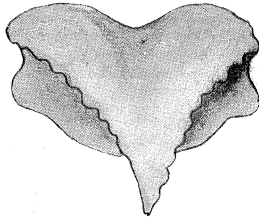
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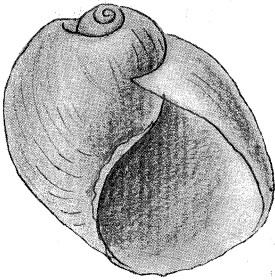
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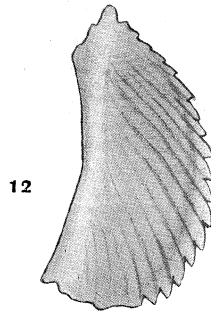
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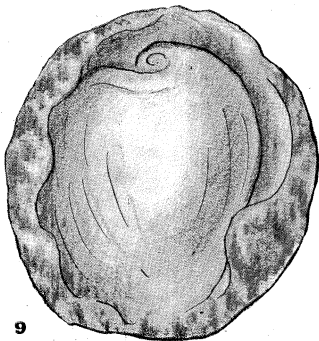
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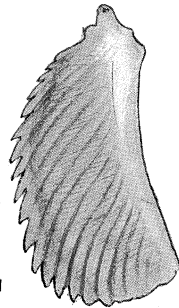
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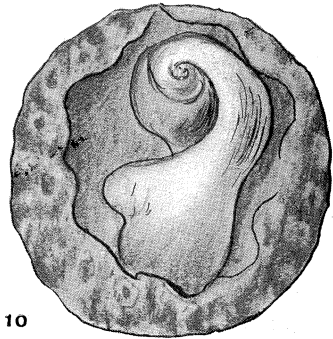
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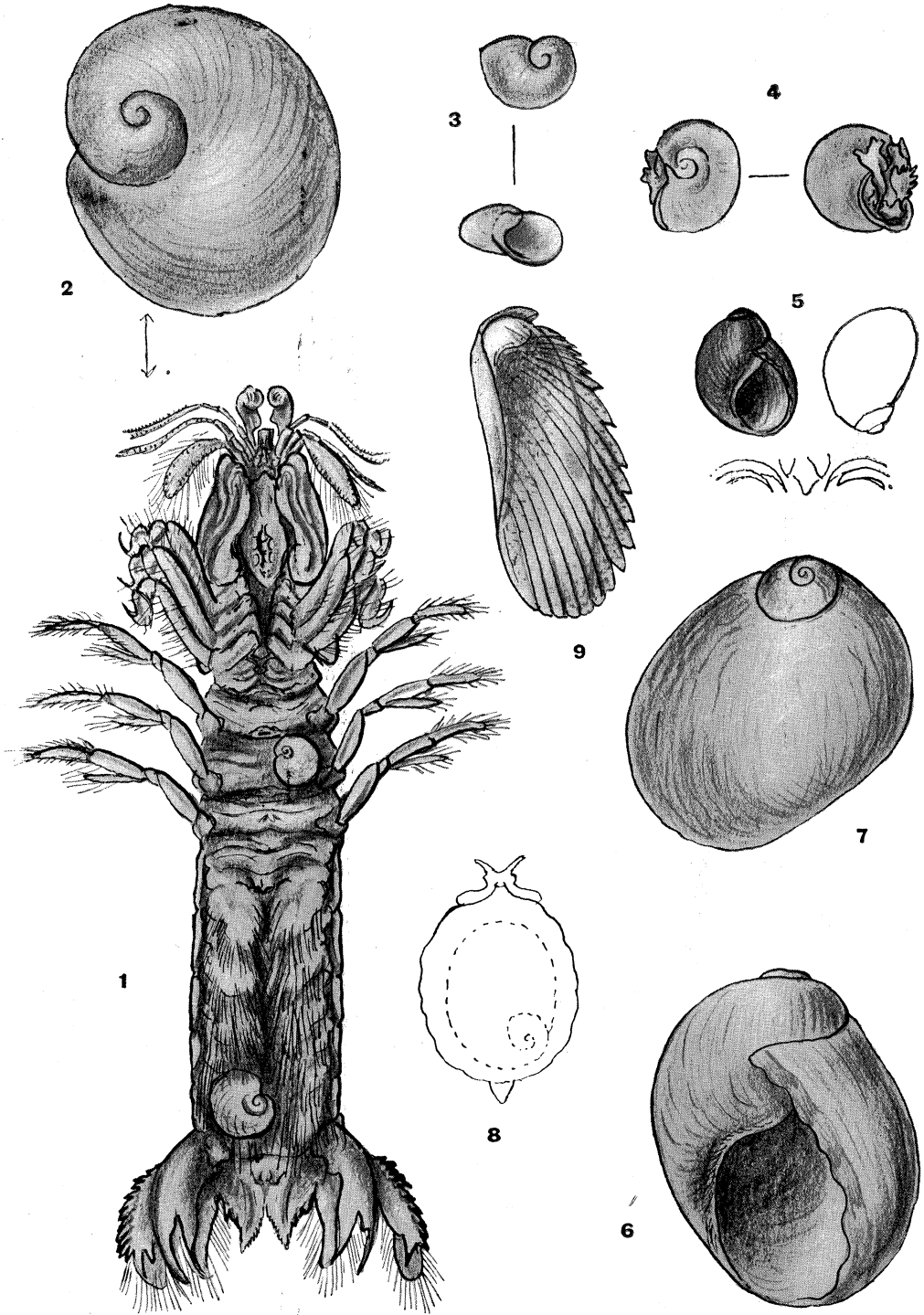
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JOYCE ALLAN, del.