

DESCRIPTION OF A NEW SPECIES OF FOSSIL
LORICELLA (ORDER *POLYPLACOPHORA*).
 WITH REMARKS ON SOME UNDESCRIPTED CHARAC-
 TERS PRESENT IN *LORICELLA ANGASI*, AD.
 AND ANG., AND *L. TORRI*, ASHBY.

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(Communicated by C. E. Lord.)

Plate XV.

(Read 11th July, 1921.)

Mr. E. D. Atkinson, who for many years was resident at Sulphur Creek, North-West Tasmania, early in September last, sent me a very beautiful valve of a Chiton which he had obtained at Table Cape, a locality that has yielded to him and his son many fine forms of fossil mollusca. Three species of *Loricella* from the same locality, and the result of the joint work of the two, were described by Mr. A. F. Basset Hull (in Proc. Lin. Soc. of New South Wales, 1914, Vol: XXXIX., Pt. 4). Since receiving the specimen herein described from Mr. Atkinson, he has passed away. He was an assiduous collector, and many fine forms have been discovered as a result of his earnest labours, and we all owe a debt to his memory.

Mr. Hull, in the paper before mentioned, comments on the large number of species belonging to the genera *Loricella* and *Lorica* represented in the Table Cape deposits, and the apparent dwindling of species in recent times. He states that the genus *Loricella* "is represented by a single living "species," and, speaking of the genus *Lorica*, which also is well represented in the same beds, he says "one only *Lorica "volvox*, Reeve, is still extant."

Since Mr. Hull wrote thus, three living forms of this latter genus have been recognised, two of which are Australian, and one from New Zealand, also a second species of *Loricella* has been described by the writer, who, in addition, foreshadows the probability of yet another species being

recognised. While it is evident that these southern seas were exceptionally rich in species belonging to these two genera at the time the Table Cape Beds were laid down, recent research indicates that both genera are better represented by living forms than was thought to be the case when Mr. Hull's paper was written.

Loricella sculpta, n.sp.

Up to the present one median valve only has been discovered in the Table Cape Beds, but it is in an excellent state of preservation; its beautiful sculpture, which suggests the name I am giving it, is as perfect as it was during life. The shell is remarkably flat, although carinated.

Pleural and Dorsal Areas.—These are evenly decorated with narrow, strongly raised, wavy ribs; these in places are bridged by transverse ribs following the growth lines. These are particularly marked towards the anterior margin, where the transverse ribs resemble a string of small beads. Towards the posterior portion of the valve this feature of the sculpture is somewhat modified, and might be more correctly described as a series of irregularly and widely spaced grooves, following the growth lines and breaking to some extent the longitudinal ribs where they cross. These longitudinal ribs are more or less confluent on the jugum, and to a limited extent in the pleural area.

Lateral Area.—This area is much raised and strongly decorated with coarse, radiating, wavy ribs; these are broken at irregular intervals by deep grooves, which are a continuation of the growth lines which cross the pleural area, and turn abruptly at less than a right-angle across the lateral areas.

Inside.—Eaves well developed, insertion plates 1 slit, evidences of not very pronounced serrations. The sutural laminæ are well developed, and appear to be much less produced forward than is the case with *L. angasi*, Ad. and Ang., the anterior margin throughout being almost straight, but in places it is a little broken; therefore, in a perfect shell, this feature may be less pronounced. The suture is broad, and the slits on either side thereof are absent. The anterior margin of the callus portion is almost straight, and the thickening very pronounced. The tegmentum is folded over the posterior margin in a similar manner to both *L. angasi*, Ad. and Ang., and *L. torri*, Ashby, with this

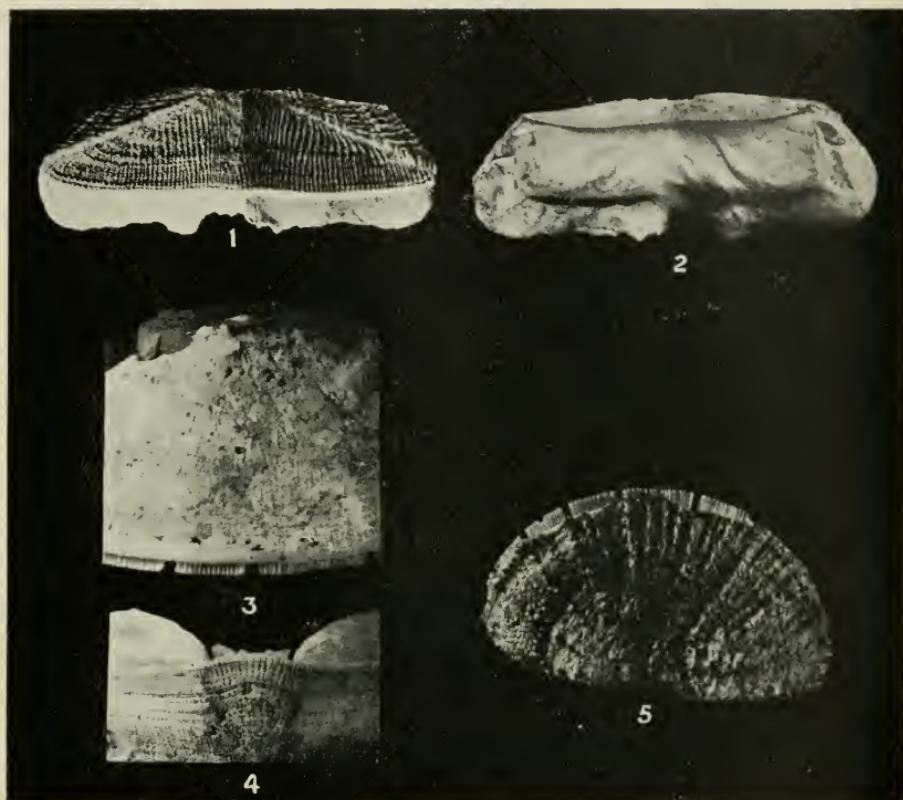


Plate XV.

Fig. 1. *Loricella sculpta*, Ashby. Median valve, upper side.

Fig. 2. *Loricella sculpta*, Ashby. Inside of median valve, showing callus portion and infolded tegmentum.

Fig. 3. *Loricella angasi*, Ad. and Ang. Portion of anterior valve, upper side, showing serrated teeth.

Fig. 4. *Loricella angasi*, Ad. and Ang. Portion of median valve, upper side, showing spade-like process between the sutural laminæ.

Fig. 5. *Loricella torri*, Ashby. Anterior valve, upper side, showing serrated teeth.

difference, that in the fossil the margin is almost straight, whereas in the two species referred to, it curves outwards under the jugum, in a semi-circle.

Note.—The strength and character of the sculpture easily separate this species from any other of the known fossil *Loricella*.

Loricella angasi, Ad. and Ang., and *L. torri*, Ashby.

In my paper on the genus *Loricella* (Trans. Roy. Soc. of S. Austr., Vol. XLIII., p. 61, 1919) reference is made to the lobed suture of the inside of the median valve of *L. angasi*, but only the superficial features distinguishing *L. torri*, Ashby, from that species were dealt with, as the valves were not disarticulated. It has now been possible to examine disarticulated specimens of both species. The sinus or space separating the sutural laminae in the median valves is very broad, with a deep slit at each side, this slit penetrating to the tegmentum, having a spade-like process, with a denticulate margin, between the two slits. This feature is present in both the two living species, but in the fossil one under review these slits are either entirely absent or rudimentary. It suggests that this feature may have been developed in recent times, in which case the fossil *Loricella* might very properly receive sub-generic distinction.

The examination of separated valves for the purposes of this paper has revealed a further difference between *L. angasi* and *L. torri*.

While the latter has, especially in the anterior valve, sharply serrated and deeply propped and cut teeth, the teeth in the former *L. angasi*, as compared with it, are comparatively blunt, and the propping much less finely cut. The fossil species under review seems more closely to approach *L. angasi* in this respect.

Note.—Carpenter MS. is quoted by Pilsbry (Man. Con. Vol. XIV., 239) as follows, referring to *L. angasi*, Ad. and Ang.:—"The sutural plates separated, but having a lamina "between them, which is sometimes bilobate or denticulate," and again, "the sinus having a separate lamina, somewhat "lobed." The figure 11, pl. 51, in same volume, does not at all represent this character as it really is, I have therefore photographed a median valve of that species showing this spade-like process, which separates the sutural laminae, and I also figure a photograph of the anterior valve of both species showing the serrated teeth, which are in both strongly

propred outside, but only showing propping in the inside in the case of *L. torri*, Ashby. This is the first time that a dissected valve of this latter has been figured. The type of *Loricella sculpta*, Ashby, has been presented to the Tasmanian Museum, Hobart. (Tas. Museum No. C. 1672.)

EXPLANATION OF PLATE XV.

Fig. 1. *Loricella sculpta*, Ashby. Median valve, upper side.

Fig. 2. *Loricella sculpta*, Ashby. Inside of median valve, showing callus portion and infolded tegmen-tum.

Fig. 3. *Loricella angasi*, Ad. and Ang. Portion of anterior valve, upper side, showing serrated teeth.

Fig. 4. *Loricella angasi*, Ad. and Ang. Portion of median valve, upper side, showing spade-like process between the sutural laminæ.

Fig. 5. *Loricella torri*, Ashby. Anterior valve, upper side, showing serrated teeth.