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THE
GEOLOGICAL MAGAZINE.

No. XXIX.—NOVEMBER, 1866.

ORIGINAL ARTICLES.

I.—ON THE AUSTRALIAN TERTIARY SPECIES OF *TRIGONIA*.

By FREDERICK M'COY, F.G.S.

Professor of Natural Sciences in the Melbourne University; Director of the National Museum of Victoria; Palæontologist to the Geological Survey, etc., etc.

AS I have prepared descriptions of nearly all the fossils of Victoria collected by the Geological Survey under Mr. Selwyn for some years, I have been urged to make a preliminary publication in the GEOLOGICAL MAGAZINE of some of the more remarkable forms, and I now forward my descriptive note of the two Tertiary *Trigoniae*, on account of Mr. Jenkins' paper in the May number of this Journal, in which one of them is referred to the recent *T. Lamarckii*. I feel assured that if Mr. Jenkins will look at the edge along the ribs, towards the beak of a recent specimen of *T. Lamarckii* and my *T. acuticostata* from the Tertiary beds, he will at once appreciate the distinctive form of the ribs which I point out and figure in the annexed woodcut.



FIG. 1.—*Trigonia acuticostata*, M'Coy.
Older Pliocene, &c., Victoria, South
Australia.



FIG. 2.—*Trigonia Lamarckii*, Mathn.
Recent Australian Seas.

DESCRIPTION OF NEW SPECIES.

1. *Trigonia semiundulata* (M'Coy).

Sp. Ch. Rotundato oblong, little longer than deep, moderately convex, anterior and ventral margins broadly rounded, posterior margin nearly straight, abruptly truncated, forming an angle of 120° with the hinge line; posterior slope flattened and radiated with about ten or eleven strong obtusely rounded ridges, separated by rather wider flattened spaces, and crossed by lines of growth near the margin, closer and spinulose near the beak, and followed on the lunule close to the hinge-line by six or seven much smaller spinulose ridges; middle and anterior portions of the valves covered with narrow rounded, slightly undulating ridges, nearly parallel

with the ventral margin, crossed, except on the anterior portions, by rather faint impressed sulci radiating from the beak to the ventral margin, nearly the same distance apart as the ridges of the posterior slope. Length of longest specimen, two inches; proportional width from beak to ventral margin $\frac{80}{100}$; length of anterior side $\frac{25}{100}$; length of hinge line $\frac{60}{100}$; of truncated posterior margin $\frac{50}{100}$; depth of one valve $\frac{25}{100}$; average length $1\frac{1}{4}$ inches.

I sent labelled specimens of this species to the second Great Exhibition in London. Mr. Jenkins gives a figure of it in the "Quarterly Journal of Science," in which the transverse ridges are not sufficiently thin, numerous, or undulated.

It is easily distinguished from any known recent or Tertiary species by the rippled appearance produced by the undulated concentric ridging of the anterior two-thirds of the valves; the posterior slope is abruptly marked by the ridges being only radiating. The transverse ridging, though common in the Mesozoic *Trigonia*, is not found in the recent species.

Very abundant in the sandy beds of Bird-rock Bluff Ad. 22 and Ad. 24.

2. *Trigonia acuticostata* (M'Coy).

Syn. *T. Lamarckii*, Jenkins, GEOL. MAG., Vol. III. p. 201, Plate X., fig 3-7 (not of Mathn.)

Sp. Ch. Rotundato rhombic moderately convex; posterior slope flattened; anterior and ventral margins rounded; posterior margin obliquely subtruncate nearly straight; respiratory angle obtusely rounded; anal angle about 130° ; surface radiated with about thirty-two acutely angular ribs, about thirteen of which are on the posterior slope; the intervening spaces seem wider than the ribs from the sides of each rib gradually converging to an acutely angular line closely set with numerous small thorny tubercles (about seven in. three lines, at six lines from the beak); intervening spaces coarsely striated and wrinkled at right angles to the length from anterior to posterior end 1 in. three lines; proportionate width from beak to opposite point of ventral margin $\frac{90}{100}$; depth of one valve $\frac{30}{100}$; length of anterior side $\frac{20}{100}$; length of hinge line $\frac{52}{100}$; of truncated posterior margin $\frac{55}{100}$.

This species is easily distinguished, even as a fragment, from the *T. Lamarckii*, *T. pectinata*, and other recent species, by the character indicated in the specific name, *i.e.* the remarkable compression of the ribs into acute angular ridges, Woodcut Fig. 1; and from the same cause the spinous tubercles do not form the broad, blunt, transverse tubercles which they do in the recent species, in which the ridges form broad, obtusely flattened, almost square ribs, when viewed from the margin in a position in which those of the present species form a series of acute angles.

Not uncommon in the older Pliocene beds of Mordialloc in Hobson's Bay. Rare in the Upper Miocene beds of Muddy Creek.

The specimens above referred to were collected by the Geological Survey, and are deposited in the National Museum of Melbourne.