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A SECOND SUPPLEMENT TO A CENSUS OF THE FAUNA  
OF THE OLDER TERTIARY OF AUSTRALIA.

By Professor RALPH TATE, F.G.S., Hon. Member.

WITH AN APPENDIX ON CORALS, BY JOHN DENNANT, F.G.S.

[With Plates XIX. - XX.]

[Read before the Royal Society of N.S. Wales, December 1, 1897.]

SINCE the publication of my supplement to a Census of the Fauna of the Older Tertiary of Australia, in the Proceedings of the Society, there have appeared several important contributions to Australian Tertiary Palæontology. These are:—Cossmann's "Essais Palæoconchologie," parts i., and i., 1895-6; British Museum Catalogue of the Australasian Tertiary Mollusca, part i., by G. F. Harris (1897); McGillivray's "Tertiary Polyzoa of Victoria";<sup>1</sup> Part iv., "Gastropods of the Older Tertiary of Australia," by the writer, including Naticidæ, Hipponycidæ, Calyptræidæ, Turritellidæ and Vermetidæ;<sup>2</sup> also the "Opisthobranchs" by M. Cossmann;<sup>3</sup> whilst miscellaneous additions to the fauna have been published by Howchin, Pritchard, and others.

M. Cossmann's "Essais," as concerns Australian Palæontology, are classificatory revisions of the families Terebridæ, Pleurotomidæ and Conidæ; and his numerous references to Australian species are based on the study of actual specimens.

Mr. Harris's "Catalogue," which is limited to the Gasteropoda, Scaphopoda and Lamellibranchiata, is largely a reproduction of the diagnoses of species described by McCoy, Tenison-Woods, and myself, sometimes amplified and accompanied by well-executed illustrations, more particularly of the embryonic shell, which for the gasteropods is therein called the *protoconch* and for the lamellibranchs the *prodissoconch*. Thirty-six species are illustrated,

<sup>1</sup> Trans. Roy. Soc., Victoria, 1895.

<sup>2</sup> Trans. Roy. Soc., South Australia, 1893.    <sup>3</sup> *Ibid*, 1897.

some of them described as new ; though I do not agree with the determinations of a few of them, *e.g.* — *Acteon scrobiculatus*, this is not the species of Tenison-Woods, but represents *A. distinguendus*, Cossmann ; *Ringicula lactea* is not Johnston's species, but is *R. Tatei*, Cossmann ; *Leptoconus Newtoni*, n. sp., is *L. extenuatus* Tate ; *L. convexus*, n. sp., is *L. acrotholoides*, Tate ; and *Drillia oblongula*, n. sp., is *Buchozia hemiothone*, Ten.-Woods (*Columbella*). In *Scaphander tenuis* and *Umbraculum australe*, the author forestalls *S. Tatei* and *U. australensis* of Cossmann. Moreover Mr. Harris replaces many generic names of long standing by others in accordance with the strict rules of priority, or on the ground of preoccupation ; as most of such rectifications are generally accepted by the leading palæoconchologists, I shall indicate these and other proposed innovations in their proper places.

Class GASTEROPODA.

Family MURICIDÆ.

*Sistrum*, Montfort, 1810, has priority over *Ricinula*, Lamarck, 1816.

Family LAMPUSIDÆ.

*Triton* and *Tritonium* are names that have been in prior use in other departments of zoology, and the application of the priority rule by Mr. R. B. Newton has led him to suggest the employment of *Lampusia*, Schumacher, 1817, in which he is followed by Cossmann, 1896 ; whilst Mr. Harris advocates *Lotorium*, Montfort, 1810. So also *Colubraria*, Schumacher, 1817, has priority over *Epidromus*.

Genus *Plesiotriton*.

This genus was instituted by Fischer in 1884, uniquely represented by *Cancellaria volutella*, Lamarck, of the Parisian Eocene. The form is that of *Epidromus*, the canal is short and deeply notched, and there are plications on the columella. The type has three principal columellar plaits, but the Australian representatives have only two. I recognise two species in the Eocene strata of Australia, namely, *Cantharus varicosus*, mihi,<sup>1</sup> from Aldinga, and *P. Dennanti*, n. sp., from Cape Otway.

<sup>1</sup> Trans. Roy. Soc., South Australia, 1887, t. 8, fig. 10.

but is probably Older Tertiary. The genus is new for beds of this age.

Family STRUTHIOLARIIDÆ.

Genus *Pellicaria*.

Harris states that *Buccinum scutulatum*, Martyn, is not the type of Gray's *Pellicaria*, but *B. vermis*, Martyn; and that therefore *Pellicaria* falls in synonymy with *Struthiolaria*; he proposes *Tylospira* as the generic name.

Family CONIDÆ.

Genus *Conus*.

Messrs. Cossmann and Harris have attempted to bring some of our Eocene *Cones* into subgeneric groups as under:—

Subgenus *Stephanoconus*, Mörch. 1852.

The shells of this group are distinguished from *Conus*, s.s., by a more elongate spire, crowned by obtuse tubercles near the superior suture. Example, *C. Hamiltonensis*, Tate.

Subgenus *Lithoconus*, Mörch.

Distinguished by the absence of sutural crenulations, by the aperture dilated in front and with a rather deep posterior sinus. Examples, *C. Dennanti*, *C. pullulescens*, *C. cuspidatus*.

Subgenus *Chelyconus*, Mörch.

Spire elevated, last whorl convex near the suture, rounded at the shoulder, posterior sinus not very deep. Example, *C. Ralphii*, Tenison-Woods.

Subgenus *Leptoconus*, Swainson, 1840.

Examples, *C. heterospira*, *C. extenuatus*, *C. acrotholoides*, *C. Murravianus*, and *C. ptychodermis*, *C. ligatus*, Tate.

Genus *Hemiconus*, Cossmann, 1889.

HEMICONUS COSSMANNI, spec. nov. (Plate 19, fig. 11.)

Shell biconic, spire about one-third the total length; embryo relatively large of one and a half smooth whorls, apex obtuse hemispheric, the tip somewhat lateral. Spire-whorls five, the first and second concave by the development of a spiral rounded

border at each suture, on the second whorl an interstitial thread appears contiguous with the anterior band. The third and fourth whorls are flat, except for three spiral bands, which ornament it; the two thick marginal bands are rudely crenulated, the medial smaller one is smooth. Last whorl with antesutural angulation, the sutural slope with two spiral ridges, the posterior one is the larger; the anterior surface carries about twelve elevated angulated spiral ridges, which are somewhat unequal in size and not very regularly disposed, the larger ones with coarse blunt crenulations; the whole surface sculptured with somewhat sigmoid closely-set striae of growth. Length 9, breadth 4.5 mm.

Eocene, Muddy Creek, Victoria (one example J. Dennant).

Among the few European species referred to this genus by Cossmann, which I have had under examination, *Conus scabriculus* Solander, is the one to which our fossil shows the greatest resemblance. It differs from the European species by thick spiral ribs, more numerous on the body whorl, with coarser crenulations, by relatively shorter spire and larger pullus. The species name is in compliment to M. Maurice Cossmann, who has so ably advanced our knowledge of Australian Tertiary mollusca.

#### Family PLEUROTOMIDÆ.

##### Subfamily PLEUROTOMINÆ.

Operculum with an apical nucleus.

##### Genus *Pleurotoma*.

Sinus upon the keel, canal long. Example, *P. perarata*, Tate, ms. (apud Cossmann) = *P. septemlirata*, Harris.

##### Subgenus *Hemipleurotoma*, Cossmann.

Canal short, embryo conic. Examples, *P. Samuelli* and *num-daliana*, T. Woods, apud Cossmann.

##### Genus *Drillia*.

Sinus near the suture, canal short curved and emarginate; labrum subvaricose. Examples, *Drillia integra*, *D. stiza*, *D. Trevori*, *Pleurotoma sandleroides* and *P. pullulescens*, Tenison-Woods, *D. vicumbilicata*, Harris.

years ago on the surface of the Eocene at Spring Creek is probably an example of the species.

By its septal arrangement and false trabecular columella, this species is linked with *Montlivaltia Vignei*, of the Eocene (or oligocene) of Sind.

A coral from Muddy Creek was in 1878 referred to this genus by Tenison-Woods as *Montlivaltia discus*, but, as Duncan pointed out in his "Revision of the Madreporaria" (1884), incorrectly so. As shewn in Wood's drawing, synapticalae are present, and Duncan therefore properly placed it with the Fungidae under Moseley's new genus of *Bathyactis*. A similar coral, and from the same locality, had however, been previously described by Duncan himself, viz., in 1865 and again in 1870 as *Antillia lens*, the synapticalae, if his specimens shewed any, not being noticed. Concerning the identity of Woods' and Duncan's species there can now be no doubt, and by the rule of priority the coral should therefore be known as *Bathyactis lens*, Duncan.

## PLATE XIX.

- |   |   |
|---|---|
| Fig. 1. <i>Plesiotrilon Dennanti</i>  | Fig. 8. <i>Streblorhamphus obesus</i>   |
| „ 2. <i>Borsonia polycesta</i>  | „ 9. <i>Fossarus refractus</i>  |
| „ 3. <i>Plicatula ramulosa</i>  | „ 10. <i>Borsonia balteata</i>  |
| „ 4. <i>Borsonia Otwayensis</i>   | „ 11. <i>Hemiconus Cossmanni</i>  |
| „ 5. <i>Gaskoinia bullæformis</i>   | „ 12. <i>Cordieria conospira</i> — <i>a</i> , front aspect; <i>b</i> , embryo and first spire-whorl; <i>c</i> , side view of body-whorl |
| „ 6. <i>Borsonia protensa</i>   |   |
| „ 7. <i>Atlanta fossilis</i> — <i>a</i> , exterior, <i>b</i> , interior aspect. |   |

## PLATE XX.

- Fig. 1. *Montlivaltia variformis*—*a*, corallum 2 diam.; *b*, portion of calice showing two systems, highly magnified.
- „ 2. *Paracyathus supracostatus*—*a*, corallum 1.5 diam.; *b*, calice much enlarged.
- „ 3. *Chileutomia subvaricosa*—*a*, front view; *b*, lateral aspect of body-whorl.
- „ 4. *Strebloramphus mirulus*—*a*, front view; *b*, basal view of body-whorl.
- „ 5. *Dissochilus vitreus*.
- „ 6. *Dissochilus eburneus*.
- „ 7. *Martesia elegantula*—*a*, left valve; *b*, accessory valve.
- „ 8. *Puncturella hemispila*—*a*, side view; *b*, seen from above.
- „ 9. *Submarginula oclusa*—*a*, seen from above; *b*, enlargement of ornament.
- „ 10. *Infundibulum latesulcatum*—*a*, base; *b*, elevation.

