

NOTES ON SOME TASMANIAN CHITONS.

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Some time ago I received from Captain Beddome, of Hobart, several specimens of three species of Chitons, labelled respectively *Chiton speciosus*, *Chiton australis*, and *Chiton liratus*. At the time they came to hand the South Australian forms were engaging my attention, and I at once saw that there must be some mistake in regard to those sent under the names of *speciosus* and *liratus*, as they could not be made to answer the original descriptions of those species, but the difficulty of satisfactorily identifying them by reference to the literature at my command compelled me to put them aside for the time being. A few months since some Chitons collected by Dr. Perks at Port Elliot, Encounter Bay, were submitted to me for examination, when I recognised that they were identical with the specimens sent to me by Captain Beddome as *Chiton australis*, Sowerby, and I so labelled them; further, I exhibited an example before the Royal Society of South Australia as an interesting addition to the molluscan fauna of this colony. Having, however, since had the privilege of studying the exhaustive work of Mr. H. A. Pilsbry on the *Polyplacophora* (Chitons) as part of Tryon's Manual of Conchology, I found I had been too hasty, and had fallen into the too common snare of accepting a name under which a species is popularly known, and that, instead, the shell was the closely allied *Chiton novæhollandiæ*, of Gray. To satisfy myself more thoroughly I procured typical Port Jackson specimens of *C. australis* from Mr. C. Hedley, of the Australian Museum, while almost at the same time I received two examples from Mr. G. B. Sowerby, of London, labelled *C. australis*, one of which, however, proved to be *C. novæhollandiæ*, Gray. The means now being at my command, I resolved to deal with the forms received from Captain Beddome, and to submit the results to your Society. For the benefit of Tasmanian conchologists I shall quote the descriptions of the species from the Manual of Conchology very fully.

ISCHNOCHITON HADDONI, Pilsbry, 1892. Tryon's Manual of
Conchology, Vol. XIV. (Polyplacophora) page 88,
pl. 22, figs. 67-73.

Chiton longicymba. Sowb. Conch. Illust. f. 67.

” ” Reeve. Con. Icon. species 163.

Lepidopleurus longicymba, Angas, in his Lists of the Mollusca of South Australia and of New South Wales, in the P.Z.S. of London.

Ischnochiton longicymba, Carpenter. MS.

” ” Haddon, Challenger Report, Polyplacophora, p. 17.

Also *Chiton longicymba* of Australian collectors, but NOT *chiton longicymba*, Quoy and Gaimard. “Shell distinctly keeled on the back; scales of the girdle beautifully regular in size and arrangement, and evenly and deeply grooved. Sculpture and colour pattern like *I. longicymba*. Interior white, greenish, or bluish; anterior valve with 10, central 1, posterior valve 12 slits; teeth thin, sharp. Posterior tooth of the intermediate valves long, extending almost to the posterior lateral angle of the valve, and not terminating abruptly. Length 27, breadth 12 mill.

“The colouring is even more variable than in the New Zealandic *I. longicymba*; some specimens are clear, light greenish buff; some are brown, speckled all over with olive black; some are mainly red or black, having a wide white dorsal stripe.”

Port Jackson, N.S.W., South Australia (common), Tasmania.

Mr. Pilsbry writes:—“Having examined extensive suites of specimens of the *longicymba* type from New Zealand and Australia, I find myself compelled to separate specifically those from the latter locality, although in general appearance, colour, and sculpture they certainly resemble the true *longicymba*. The differences indicated (in italics) seem to be remarkably constant and readily recognised if one takes the trouble to look for them. It must be admitted, however, that to thoroughly examine a small *Chiton* involves some little trouble; and therefore we must feel no surprise if the superficial collector, and the often no less superficial author, continue to confound species which are really distinct. It must be said, however, that the confusion of these two species has probably been due to the lack of specimens from the two localities for comparison, else the differences would hardly have escaped writers so careful and observant as Carpenter and Haddon.”

I examined every specimen sent to me by Captain Beddome, and found that all belonged to the Australian *Haddoni*, and not to the New Zealand *longicymba*.

The foregoing species was received from Captain Beddome as *Chiton speciosus*, Adams and Angas. The *C. speciosus* was described in P.Z.S., 1864, p. 192, from specimens obtained by Mr. Angas on Yorke's Peninsula, South Australia. It is

a synonym of *Chiton contractus*, Reeve, Con. Icon., species 78 (1847), the habitat given being New Zealand. *Ischnochiton contractus* is a common South Australian species, and is credited to Tasmania by Mr. Pilsbry on the authority of the Cumingian collection.

ISCHNOCHITON (ISCHNORADSIA) NOVÆHOLLANDIÆ (Gray MSS. in Brit. Mus.), Reeve, Con. Icon. Species 142 (1847):

Chiton (Lophyrus) australis, Sowerby. Tenison Woods Census of the Marine Shells of Tasmania (1877).

Received from Captain Beddome as *Chiton australis*, and also from Mr. W. Legrand under the same name over twenty years ago.

The following are the essential portions of the descriptions of the two species, transcribed from the Manual of Conchology:—" *I. novæhollandiæ*.—Shell oval-oblong, elevated, the dorsal ridge angular, side slopes nearly straight; colour green, minutely marbled with olive, the lateral areas darker. Lateral areas sculptured with *low, uneven, somewhat nodulous radiating riblets, and some concentric growth wrinkles. Central areas smooth except for a very dense and regular microscopic granulation.* End valves having radiating riblets. Interior blue green, with pink and olive rays. Girdle covered with smooth, solid, pebble-like scales, which toward the outer edge are subcarinated. Length 43, breadth 23 mill. Adelaide, South Australia."

I may here state that there is no locality in the immediate neighbourhood of Adelaide where this shell is likely to be taken.

Encounter Bay, S.A. (Dr. Perks, Professor Tate.)

Tasmania, where apparently it is a common species.

" *I. australis*.—Shell oval oblong, moderately elevated, the dorsal ridge sub-angular, side slopes nearly straight. Colour dark olive brown, the apices of the valves pink when eroded. Lateral areas sculptured with *close uneven riblets, which usually bifurcate or branch freely, especially toward the posterior margin of the area. Central areas closely and evenly sculptured with finer longitudinal riblets, obsolete on the ridge, where they give place to a dense microscopic granulation.* End valves sculptured with close radiating riblets, those of the posterior valves irregularly granose. Interior light blue-green, with two wide pink rays in each valve, and behind them two olive-brown rays. Girdle wide, closely covered with conspicuous,

convex, pebble-like scales, which toward the outer edge are subcarinated in the middle. Length 62, breadth 35 mill. Port Jackson."

Attention to the italicised words in the foregoing descriptions will show the outside difference existing between these two species, and a study of the specimens now at my command has satisfied me that the Tasmanian and South Australian shells are identical, and are *C. novæhollandiæ*, Gray, and not *C. australis*, Sowb., as given in Tenison Woods' Census of Tasmanian Marine Shells. Neither have *C. concentricus*, *C. muricatus*, or *C. smaragdinus* anything in common with the present forms, as suggested by Mr. Woods, the two former being true Chitons, and the latter a typical Ischnochiton as restricted. The Port Jackson specimens are typical *australis* in every particular. Of the Tasmanian shells I have six, and of the South Australian I have examined eight (a gradation of sizes in each case). In the most perfect of those from Tasmania there are superficial signs of the longitudinal riblets on the central areas at the extreme sides in front of the diagonal lines, as also are there on the two largest of the South Australian ones. I do not note any concentric growth wrinkles on the *C. australis* from Port Jackson, but they seem to be more or less present in the *C. novæhollandiæ* from both localities mentioned, in which also the radiating riblets of the terminal valves are more or less broken up into concentric granulations. The two specimens received from Mr. Sowerby are labelled "Australia," and comprise one of each species.

CHITON PELLISSERPENTIS. Quoy et Gaimard., Voy. de l'Astrolabe, Zool. iii., Moll., p. 381, t. 74, f. 17-22 (1834).

C. pellisserpentis, Reeve, Con. Icon., species 84.

" " Hutton, Cat. Mar. Moll, N.Z., 1880, p. 111.

"Shell oval, rather elevated, hardly carinated, the side slopes somewhat convex. Surface lustreless. Colour a rather dull and dingy olive or olive-green, marked with black along the ridge, and on the sides of some valves. The lateral areas moderately raised and sculptured with *three or four rows of distinct tubercles*. Central areas having *strong, irregular growth wrinkles, and fine longitudinal riblets*. Anterior valve larger and much more elevated than the posterior, both being sculptured with numerous regular rows of distinct tubercles, the rows increasing by splitting. Posterior valve depressed, the low mucro in front of the middle. Inside blue, indistinctly blotched with olive-green. Sutural plates rounded, the sinus broad and deep, smooth or hardly denticulate.

Anterior valve having 12, central valves 1, posterior valve 12 slits, teeth blunt, pectinated. Eaves broad. Girdle wide, *alternately light and dark*; scales rather large and wide, often showing a slight tendency to carination in the middle, microscopically striated. Length 30, breadth 23 mill. New Zealand."

It may be here mentioned that in order to satisfactorily determine a chiton by all its essential characters, which particularly include the internal ones, such as the sutural plates, sinus, slits, etc., it is necessary to take the shell to pieces.

Received from Captain Beddome as *Chiton liratus*, Adams and Angas, and under which name I am informed it is labelled in the museum collection at Hobart. *C. (Lepidopleurus) liratus* was described with other South Australian Chitons, including *C. (Lepidopleurus) speciosus* by Messrs. Adams and Angas in the P.Z.S., 1864, from specimens gathered by Mr. Angas on Yorke's Peninsula, S.A. I have not yet myself been successful in determining the *C. liratus* from among our South Australian Chitons, but at any rate no South Australian specimen of *pellisserpentis* exists in any local collection. Again, the Tasmanian shell is a true Chiton, whereas *liratus* of A. and A. is an Ischnochiton. In concluding that the Tasmanian shell is *C. pellisserpentis* and not *C. sinclairi*, which is closely allied to it, I have relied on the circumstance that in the specimens in my possession (five) the broad sinus shows an "absence or absolescence of teeth," and also on the colouring of the girdle, which is alternately light and dark. The figure in Reeve well illustrates the species.

Chiton sinclairi, Gray. Dieffenbach's Travels in New Zealand, Vol. 2, p. 263 (1843).

As this shell is closely related to *C. pellisserpentis*, and as it has been recorded from Tasmania, although that locality has been doubted by the late Rev. J. E. Tenison Woods, I have extracted the full description as given in the Manual of Conchology for the benefit of Tasmanian conchologists.

"Shell oval, rather elevated, the *dorsal ridge rounded*, side slopes rather straight; *brown-black*, each valve *irregularly and raggedly striped with whitish*; the head valve pale with dark rays. Sometimes the white predominates. The lateral areas are raised and sculptured with *three or four radiating granose ribs, often sub-obsolete*. Central areas *smooth in the middle except for a few growth wrinkles*, but having *fine short longitudinal riblets at the sides in front of the diagonal line*. These riblets are sometimes almost obsolete. Head valve sculptured at first with about 15-18 granose riblets, but as they have a tendency to split as the valve grows, the number in a grown

specimen is usually 24-30. Tail valve having a low, obtuse mucro, decidedly in front of the middle. Interior bluish. Sinus rather wide, denticulate, the area behind it porous. Anterior valve having 11, central valves 1, posterior valve 14 slits; teeth obtuse, strongly crenulated. Eaves broad, spongy. Girdle covered with large convex scales, which are very finely, sharply striated. Length 28, breadth 18 mill. Another specimen length 17, breadth 11 mill."

Those portions of the description printed in italics emphasise the salient features of the species.

Mr. Pilsbry says:—"The smooth polished central areas, grooved only along the diagonal line at the sides, and the granose-ribbed lateral areas and end valves are characteristic. The black and white colouring is also constant. The sculpture of the side areas varies greatly in strength. This species has been reported from Tasmania, but on doubtful authority."

The *Conchologia iconica* (Monograph of Chiton, published in 1847) gives "Van Diemen's Land" as the habitat of this shell on the authority of Dr. Sinclair, R.N. Presumably, as this Chiton is named after Dr. Sinclair by Gray as a New Zealand species, the locality given by Reeve four years afterwards may be an error.

Reeve's notes to this shell in *Con. Icon.* is:—"Very closely allied to *C. capensis* and *C. pellisserpentis*, but distinguished from both by the peculiar structure of the granules, which, to use a mournful comparison, have an appearance like the nails on a coffin."

C. sinclairi is included in Tenison Woods' Census of the Marine Shells of Tasmania (1877), with the following remarks:—"A New Zealand shell, whose Tasmanian habitat is doubtful."

Turning to Professor Hutton's Manual of the New Zealand Mollusca (1880), when I had written the larger part of this paper, to read the description given by him of *C. pellisserpentis* I was astonished to find myself accredited as an authority (bracketed with Reeve) for giving Tasmania as a habitat for *C. sinclairi*. Although I have been in possession of a copy of this book from the time of its publication by the courtesy of Professor Hutton, I do not recollect having noticed this before. It must assuredly have been a *lapsus calami* on the part of the Professor (Beddome, no doubt, being intended), for I never possessed the species till about two months ago, when I received examples from Mr. G. B. Sowerby, of London, labelled "New Zealand."

C. sinclairi may certainly be looked for in Tasmania, although the affinities of the fauna of the island are with Australia and not with New Zealand.