

ON SOME LAMELLIBRANCHS FROM MAURITIUS, WITH DESCRIPTION OF ONE NEW SPECIES OF THE GENUS *MONTACUTA* (MOLLUSCA).

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INTRODUCTION.

Among the workers who contributed towards our knowledge of the conchology of Mauritius or Isle de France (a name obtained during French occupation), the names of Bernardin (1773)¹, Sganzin (1843)², Adams (1867, 1868)³, Nevill (1871, 1875)⁴, Lienard (1877)⁵, von Martens (1880)⁶, Sowerby (1893)⁷, Germain (1921)⁸ and Leloup (1941)⁹ deserve special mention. This well-known East African island lies in the western part of the most extensive marine conchological province, called the Indo-Pacific, and abounds with marine life of all sorts. A few years back Viader (1937)¹⁰ in his revised catalogue tried to gather together the names of all forms of molluscs so far recorded from that island and to arrange them systematically in the respective groups. This work may be used with great profit by all workers in the field as it provides ready-made information as to the number of species inhabiting the island, but the nomenclature and classification used do not appear satisfactory in all cases.

The materials used in this paper consist of dry shells of Lamelli-branches which were received from Dr. R. Viader of the Mauritius Institute, Mauritius. But he did not supply the necessary details, such as, the exact localities, dates of collection, etc. of the specimens. The collection, though very small and poor too in the number of species, appears quite interesting as it comprises four different genera, namely, *Montacuta*, *Cardita*, *Tellina* and *Aloidis*, of which the first one is being recorded for the first time from Mauritius represented by a new species designated as *M. (M.) viaderi* in honour of Dr. Viader. Moreover, the existence of *Tellina murrayi* Smith in Mauritius out of its habitual latitude in the Rain island, off Cape York, North Australia (155 fathoms), is also quite remarkable. Altogether six species are dealt with in this paper.

I am grateful to Dr. W. J. Rees of the British Museum (Nat. Hist.), London, for his invaluable help in the identification of *Tellina murrayi* Smith after a careful comparison with the type found in the collection of the Challenger Expedition. My thanks are also due to Dr. R. Viader for taking the trouble in supplying me some useful information about the genera *Montacuta* and *Aloidis*.

¹ Bernardin, St. Pierre. B, *Voy. a l'Isle de France, a l'Isle de Bourbon, etc.* (1773).

² Sganzin, V., *Cat. Coq. aux Iles de France, de Bourbon et de Madagascar* (1843).

³ Adams, H., *Proc. Zool. Soc. London* (1867, 1868).

⁴ Nevill, G. and H., *Journ. As. Soc. Bengal* XL, Part 2, pl. 1 (1871); *ibid.* (1875).

⁵ Lienard, E., *Cat. Faun. Malac. de l'Isle Maurice et de ses Dependances* (1877).

⁶ von Martens, E., *In Mobius's Beitrage zur Meeresfauna der Insel Mauritius und der Seychellen* (1880).

⁷ Sowerby, G. B., *Proc. Malac. Soc. London* 1 (1893).

⁸ Germain, L., *Faun. Malac. Terres. et Fluv. des Mascareignes* (1921).

⁹ Leloup, E., *Maur. Inst. Bull.* 2 (1), pp. 1-13 (1941).

¹⁰ Viader, R., *Maur. Inst. Bull.* 1 (2), (1937).

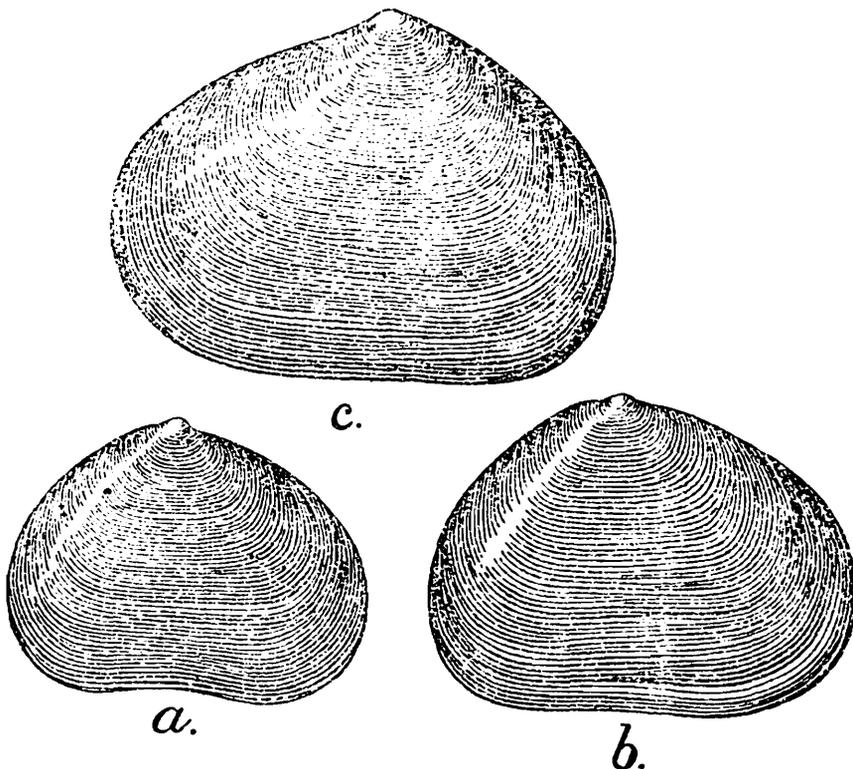
SYSTEMATIC ACCOUNT.

Family MONTACUTIDAE.

Genus *Montacuta* Turton, 1822.Sub-genus *Montacuta* s.s.*Montacuta viaderi*, sp. nov.

Three small separate valves are found in the collection which appear to differ so markedly in shape and character from those of the existing species of *Montacuta* that I feel justified to describe them as a new species under the name of *M. viaderi*. The specimens marked *a*, *b*, *c*, vary amongst themselves in size and measure 13 mm. in length and $5\frac{1}{2}$ mm. in height, 11 mm. in length and $8\frac{1}{4}$ mm. in height, and $9\frac{1}{4}$ mm. in length and 7 mm. in height respectively. The new species is described as follows:—

Shell small, thick, somewhat triangularly ovate, slightly compressed behind the middle as in *M. pelseneeri* Prashad, longer than high, surface covered with thin greyish epidermis but that is scraped off on the upper part (more in *a* and *b*), more or less roughly and regularly concentrically striated throughout; posterior side rather short with the dorsal margin convex and very sloping and showing slight concavity near the umbones (more marked in *a* and *b*); anterior side a little longer and narrower



TEXT-FIG. 1.—Valves of *Montacuta (Montacuta) viaderi*, sp. nov., from Mauritius, X 5.

with the dorsal margin gradually sloping but showing more concavity in *c* than in *a* and *b*, and finally obliquely rounded at the end; umbones subcentral, bluntly acute, slightly elevated above and curved forwards instead of backwards; ventral margin contracted in the middle (more so in *a* and *b*), the concavity gradually being reduced with growth (see

in *c*), the margin on either side of it gradually raised upwards slightly narrowing anteriorly but the posterior dorsal margin being more sloping and convex and aided by the general concavity below gives the shell a somewhat blunt beak-shaped appearance which is more marked in *a* and *b* than in *c*; interior of the valve white and glossy in *a* and *b*, but dull in *c*.

Type-locality.—Mauritius, East Africa.

Holotype.—Reg. No. M. 16085/2 Zoological Survey of India.

Paratype.—Reg. No. M. 16036/2 Zoological Survey of India.

Remarks.—The new species *Montacuta (M.) viaderi* appears very closely allied to *M. pelseneeri* Prasad¹ from the Bay of Badjo, west coast of Flores (155 fathoms), but differs from it in essential details. To be more sure about the occurrence of the genus *Montacuta* in Mauritius, I wrote a letter to Dr. Viader requesting him to let me know if the genus *Montacuta* is at all represented by any species there and he kindly favoured me with the following reply :

“ I have not yet met with any *Montacuta* nor has any been recorded from Mauritius yet as far as I know.” (*Letter of 8th September, 1950.*)

So, the species *viaderi* undoubtedly marks the first record of the genus *Montacuta* in Mauritian waters.

Family CARDITIDAE.

Genus *Cardita* Bruguiere, 1792.

Subgenus *Cardita* s. s.

Cardita calyculaeformis Deshayes, 1863.

1863. *Cardita calyculaeformis*, Deshayes, *Cat. Moll. Reunion*, p. 21 (no. 55), pl. iii, figs. 10, 11.
 1880. *Cardita (Mytilocardia) calyculaeformis*, von Martens, in *Mobius's Beitrage zur Meeresfauna der Insel Mauritius und der Seychellen*, p. 321.
 1922. *Cardita calyculaeformis*, Lamy, *Journ. de Conchyliol.* LXVI, p. 231 (*foot-note*).

Deshayes's original name *calyculaeformis* for the species appears to have been slightly emended by von Martens as *calyculaeformis*, though he wrongly relegates it to the family Astartidae. Tryon² not only perpetuates the same error, but commits more blunder in quoting an entirely wrong name “*corbiculaeformis*” for the species. Moreover, he creates a great confusion about its systematic position while putting it wrongly under the genus *Actinobolus* Klein.

The most remarkable feature which may readily distinguish this species from any other in the group is its ovato-oblong, sub-quadrilateral and arcuated shell ornamented on the surface with more or less regular, conspicuous, strong, granulated radial ribs—the postero-median

¹ Prasad, B., *Monogr. Siboga-Exped. Pelecypoda LIIC*, p. 172, p. v, fig. 28 (1932).

² Tryon, G. W., *Proc. Acad. Nat. Sci. Philadelphia*, p. 253 (1872).

ones of which are larger. Moreover, the anterior side is short and truncated, while the posterior side is large and broad. The umbones are acute and obliquely arcuate. These interesting features are more or less apparent in the five young shells before me. The surface of the shell is white and sparsely spotted with dark-brown—the spots sometimes appearing much darker and prominent in the youngest shells and quite visible even from the inner side. The entire ventral margin along the inner side is stained with dark-brown and the stain may even extend upwards along the dorsal margin. The outer side of the dorsal margin appears straight for some distance and then forming a slight angulation posteriorly gradually slopes downwards and becomes obliquely truncated below. This may possibly be due to the shells being too young. The largest shell in the collection measures 5 mm. in length, 4 mm. in height and 3.5 mm. in diameter, while the smallest one is 3.5 mm. \times 2.5 mm.

Distribution.—*Cardita* (*C.*) *calyculaeformis* Deshayes was originally described from Reunion (or the isle of Bourbon in East Africa). Although no mention is made of this species by Viader in his comprehensive Catalogue of the Mauritius shells, von Martens appears to have put it on record in his paper already referred to.

***Cardita nodulosa* Lamarck, 1819.**

1819. *Cardita nodulosa*, Lamarck, *Hist. Nat. Anim. sans Verteb.* VI, p. 25.
 1843. *Cardita rufescens*, Reeve, *Conch. Icon.* 1, pl. iv, figs. 19a, 19b.
 1880. *Cardita* (*Mytilicardia*) *rufescens*, von Martens, in *Mobius's Beitrage zur Meeresfauna der Insel Mauritius und der Seychellen*, p. 321.
 1916. *Cardita nodulosa*, Hedley, *Journ. Roy. Soc. Western Australia* 1, p. 12.
 1922. *Cardita nodulosa*, Lamy, *Journ. de Conchyliol.* LXVI, pp. 236-239.
 1937. *Cardita rufescens*, Viader, *Maur. Inst. Bull.* 1(2), p. 64.

The application of Lamarck's name "*rufescens*" to the species appears more appropriate in view of the red colour of its shell and this may possibly be the reason why Reeve called it "Red *Cardita*" But since it is antedated by Lamarck's name "*nodulosa*" many authors have preferred the use of the latter. The inclusion of the species into the family Astartidae by von Martens is rather erroneous. Lamy who has discussed its nomenclature and synonymy considers Valenciennes's *modulosa* (1846) and Clessin's *rubida* (1888) as its synonyms. Reeve's *nodulosa* figured in pl. ix, no. 44 of *Conch. Icon.* is not the same as Lamarck's *nodulosa* (= *rufescens*). The original description of *C. nodulosa* was based on two right valves found in the collection of the Paris Museum which were obtained by Peron and Lesueur, in 1801, from New Holland.

The species is characterized by its elongately-oval, red-coloured shell which is nicely adorned on the surface with conspicuous ribs bearing imbricating scales. The shells before me appear quite young and agree somewhat closely with Reeve's figures regarding colouration and ribbing, though the scales do not appear so prominent and regular in all cases. The dorsal margin is slightly angular posteriorly as in *C. calyculaeformis*, but this angulation may be lost in the adult. The largest shell in the lot measures 5 mm. in length, 3.5 mm. in height and 3 mm. in diameter.

Distribution.—*Cardita* (*C.*) *nodulosa* Lamarck is a wide-spread species in the Indo-Pacific.

Family TELLINIDAE.

Genus **Tellina** Linnaeus, 1758.**Tellina murrayi** Smith, 1885.

1885. *Tellina murrayi*, Smith, *Zool. Chall. Exped. Lamellibranchia*, XIII, pp. 98-99, pl. iii, figs. 8-8b. (*Type* : British Museum (Nat. Hist.), London).

This very rare and interesting species is represented in the collection by only three separate valves. Since our entire collection of the family Tellinidae is very badly damaged by the Varuna flood of 1943 at Banaras and, as such, no authenticated specimens were available here for comparison I thought it better to send the specimens in question to Dr. W. J. Rees of the British Museum (Nat. Hist.), London, for opinion. The latter has been good enough to take the trouble of comparing them with the type and giving me the following information: "*Tellina murrayi* Smith compared with the type in Challenger Coll. and seems to be identical as regards structures, hinge, etc.; but your specimens are somewhat larger and in better condition."

Regarding shape colouration and sculpture the specimens in the collection seem to correspond to Smith's description and figures. The crenulation on the surface of the shell, so characteristic of the species, is produced by fine, somewhat distant, more or less regular, concentric lirae and the more numerous and closely packed radial ones—the latter arising from the small but acute and prominent umbones. The concentric lirae appear to form slight but distinct angulations at the place where they meet the conspicuous radial ridge near the narrowed and somewhat rostrate posterior end. The largest valve is 10 mm. in length and 6 mm. in height, while the smallest one is 8 mm. in length and $4\frac{3}{4}$ mm. in height. The latter appears to be more or less equal in size to the holotype of *T. murrayi* measuring 8 mm. \times $4\frac{1}{2}$ mm.

Distribution.—*Tellina murrayi* Smith was originally recorded from the Rain Island, off Cape York, North Australia (155 fathoms), Coral sand. Since then it has not been known to occur anywhere else. Its existence in Mauritius is, therefore, of great interest.

Angulus (Exotica) rhomboides (Quoy & Gaimard, 1833-35).

1833-35. *Tellina rhomboides*, Quoy & Gaimard, *Voy. Astrolabe, Zool.* III, p. 502, pl. lxxxii, figs. 4-7.

1867. *Tellina rhomboides*, Reeve, *Conch. Icon.* XVII, pl. xxii, figs. 114a, 114b.

1932. *Tellina (Angulus) rhomboides*, Prashad, *Monogr. Siboga Exped. Pelycy-poda*, LIIC, pp. 192, 193.

1935. *Angulus (Exotica) rhomboides*, Thiele, *Handb. der Syst. Weichtierk.* II, p. 919.

1937. *Tellina rhomboides*, Viader, *Maur. Inst. Bull.* 1(2), p. 65.

Prashad while discussing the nomenclature of the species *rhomboides* interpreted Megerle's *Angulus* (1811) as a sub-genus of *Tellina*. But later on Thiele gave *Angulus* a distinct generic rank (a view followed

by Adam et Leloup¹ also) and treated Jousseau's *Exotica* (1918), which Prashad considered as "superfluous", as one of the sections of the subgenus *Fabulina* Gray (1851). Prashad seems to have rightly supported Dunker² and Smith in considering Deshayes's *clathrata* (1835) as a synonym rather than a substitute for *rhomboides* as suggested by Iredale³, and Viader has also upheld the same conclusion. Hirase⁴, no doubt, records with some hesitation this species from Japan, but unfortunately he relegates it to the genus *Macoma* Leach (1819). Smith has discussed the diagnostic features of the species.

The species *rhomboides* is greatly variable in form and character of the shell and is commonly called the "Rhoraboidal Tellina". There are three complete shells and two separate valves in the collection which agree with the description of the type, save that the radial pinkish rays on the surface of the oblong and obliquely wedge-shaped shell are faintly visible in some or wanting in others. The largest shell in the lot is 13 mm. in length, 7.5 mm. in height and 3.5 mm. in diameter, while the smallest one is 11 mm. × 6 mm. × 3 mm.

Distribution.—While dealing with *Angulus (E.) rhomboides* (Q. & G.) Smith (1885, p. 104) remarked: "The distribution of this pretty shell is as extended as its colour is variable." Its wide range extends into the Persian Gulf, Red Sea, Gulf of Suez, Mauritius, Madagascar, Zanzibar, Mozambique, Natal, Minikoi, Ceylon, Nicobars, Malay Archipelago, Cocos—Keeling Is., Timor, Macassar, Sailus Ketjil in Paternoster Islands, Sulu and Banda Anchorage, New Caledonia, Cape York in North Australia, Levuka in Fiji Islands, Philippines and Japan.

Family ALOIDIDAE.

Genus **Aloidis** Megerle von Muhlfeldt, 1811.

Subgenus **Aloidis** s.s.

Aloidis modesta (Hinds, 1843).

1843. *Corbula modesta*, Hinds, *Proc. Zool. Soc. London*, p. 57.

1893. *Corbula modesta*, Melvill and Abercrombie, *Mem. and Proc. Manch. Lit. and Phil. Soc.* (4) VII, p. 49.

1930. *Corbula modesta*, Oostingh, *Misc. Zool. Sumatrana*, XLIX, p. 11.

1932. *Aloidis modesta*, Prashad, *Monogr. Siboga Expd. Pelecypoda*, LIIC, pp. 308, 309.

1941. *Aloidis modesta*, Gravely, *Bull. Mad. Govt. Mus. N. S.* V(1), pp. 64, 102.

Hinds's *Corbula modesta* was based on specimens from the straits of Macassar and island of Ticao found in the collection of Sir Edward Belcher and Hugh Cuming. But the true systematic position of the species has been in a state of great confusion owing to its inclusion into

¹ Adam, W. & Leloup, E., *Mem. Mus. Roy. Hist. Nat. Belg.* Hors Ser., II, Face, 20, p. 97 (1939).

² Dunker, W., *Ind. Moll. Mar. Japan*, p. 191 (1882).

³ Iredale, T., *Mem. Queens. Mus.* IX, p. 266 (1929).

⁴ Hirase, S., *A Coll. of Jap. Shells*, p. 25, pl. xlv, fig. 7 (1934).

the families Myidae and Corbulidae by different authors. Winckworth¹ in his paper entitled "*Notes on Nomenclature*" has discussed the validity of the genus *Aloidis* and Prashad, Gravely, Viader and others have also followed him. But recently Vokes² has suggested the revival of Lamarck's generic name *Corbula* in suppression of Megerle's name *Aloidis* and also advanced a classification of the group, though his view appears to have received very little support. Prashad and Smith have discussed the synonymy, diagnostic features and affinity of the species *A. modesta*, while Reeve³ has figured it in pl. ii, Nos. 14a, 14b.

Two small separate valves of the same size (9 mm. in length and 5.5 mm. in height) represent this well-known species in the collection. The slightly produced and angularly keeled anterior side and beautifully sculptured surface of the valves with prominent concentric ribs ranging one upon the other like steps amply justify their inclusion into the species *modesta*. But they do not seem to present the carnelian red on the inner side which may possibly be due to their young age.

Distribution.—*Aloidis (A.) modesta* (Hinds) has a wide range in the Indo-Pacific, having been recorded from Bombay, Mauritius, Madras Pamban, Tuticorin, Muttuwartu, Ceylon, Sumatra, Bay of Kankamaraan, South Coast of Kangeang, Sailus Ketjil, Anchorage off Pulu Kawassang, Bay of Bima, Pulu Sanguisiapo, Tawi Tawi Islands, Sulu Archipelago and Banda Anchorage, Amboina, Off Nukalofa, Tongatabu, Malacca, Rua-sura Island in Solomon Archipelago and the Philippines. But its range is also known to extend to Whydah on the Dahomey shore on the Atlantic in West Africa. There are specimens in our named collections from Gwadur in Baluchistan, Andamans and Aden about which no mention is found in literature.

¹ Winckworth, R., *Proc. Malac. Soc. London* XIX, p. 15 (1930).

² Vokes, H. E., *Bull. Amer. Mus. Nat. Hist.* LXXXVI, pp. 1-32 (1945).

³ Reeve, L., *Conch. Icon.* II (1843).