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THE MARINE MOLLUSCA OF MADRAS AND THE  
IMMEDIATE NEIGHBOURHOOD.

BY J. COSMO MELVILL AND R. STANDEN.

(Read before the Society, Oct. 13th, 1897.)

A FEW years ago Professor J. R. Henderson, of the Christian College, Madras, handed over the mollusca obtained during two or three dredging expeditions, in the neighbourhood of that city, to the Manchester Museum for investigation.

Want of time and pressure of other matters have, till now, prevented our accomplishing this, but we now have the pleasure of detailing the results of our examination of this very interesting collection.

As might be expected, the fauna is typically Indian, a few species showing considerable extension of range southwards, which have been till now mainly considered inhabitants of the North Indian Ocean or the Arabian Sea.

So far as we can make out, but few collections of marine shells from Madras have been formed, still fewer catalogued. That published of the contents of the Madras Museum embraces specimens from other localities as well, so that we believe the present is the first endeavour to collate such a list.

There is a large assemblage of dredged material in the British Museum, mainly collected by Mr. Edgar Thurston, Superintendent of the Madras Museum, but this has not yet been investigated.

These facts render the accompanying enumeration of greater interest than a mere list of names usually possesses.

We have thought it worth while to add to each species a note regarding its geographical distribution, and, we may remark, it is astonishing to find how very widely distributed many species are, e.g., *Strombus floridus*, *S. gibberulus*, *Nerita polita*, etc. The majority of the mollusca named come from Madras and its immediately neighbouring shores, but a few were dredged in the Pamban Passage, between Port Lorne, S.E. India, and Rameswaram Island, N.W. Ceylon.

We take this opportunity of expressing our acknowledgements to Prof. Henderson for the opportunity of examining such rich and well-collected material, and we are also much indebted to Mr. Edgar A. Smith, F.Z.S., for having personally aided us in the comparison and differentiation of some obscure species; and, whilst we have left, as still doubtful, several of these, we have ventured to describe seven as new in the present paper.

The total number now catalogued comes just short of 400 species, and is therefore slightly in excess of those enumerated, three years ago, as natives of Bombay by Mr. Alexander Abercrombie and one of

the present authors.<sup>(1)</sup> We should be inclined to estimate the probable total of both Madras and Bombay marine mollusca, severally, as about the same, say, 700 species or so. Both localities possess many points in common.

An asterisk (\*) is appended to all those forms which are included in the Bombay catalogue just alluded to.

(I). DESCRIPTIONS OF NEW SPECIES.

*Cerithium carnaticum* n. sp. (Plate I., fig. 1).

*C. testa attenuato-fusiformi, solida, sordide ochracea, interdum castaneo-variegata; anfractibus novem, inæqualiter varicosis, ad suturas superficialiter canaliculatis, longitudinaliter irregulariter costatis; costis rudibus, undique transversim rudi-liratis; junctura costarum lirarumque sæpe gemmulatis; apertura ovata, labro extus effuso, paululum incrassato; canali brevi. Long. 13, lat. 5 mm., sp. maj.*

It is curious that this *Cerithium* has not been described ere this, for unnamed examples exist in the British Museum. Its affinities would appear centred near *C. adenense* Sow. (which, however, is much larger) and its allies.

It is a rudely-sculptured species, solid, nine-whorled, attenuate, so impressed at the sutures as to appear channelled; the unequal varices and the irregular longitudinal ribs are crossed by thick liræ, and at the junction of these shining papillæ occur. Mouth ovate, outer lip effuse, a little thickened, canal short.

*Colina selecta* n. sp. (Plate I., fig. 2).

*C. testa fusiformi, cylindrica, attenuata, solidiuscula, cinereo-brunnea; anfractibus undecim, apud suturas paululum impressis, undique transversim arcuè sulculosis; sulcis impresso-punctatis; ultimo anfractu producto; apertura rotunda, labro exteriore effuso, incrassato, intus castaneo-lineato. Long. 15, lat. 4 mm.*

Allied to *C. pinguis* A. Ad., the typical form of which is from the Cape, while varieties occur in various tropical regions, e.g., Lifu and the Paumotu Is. Our species resembles more *C. tæniatum* Sow., but is not so pupiform in shape, nor is it noduled transversely. After examination of all forms of *C. pinguis* and allies, we have come to the conclusion that this is distinct from any. It is an elegant shell, and of marked peculiarity in appearance.

*Rissoina (Morchiella) thaumasia* n. sp. (Pl. I., fig. 3).

*R. testa fusiformi, versus apicem attenuata, solida, ochraceo-alba; anfractibus novem, turritis, apud suturas paululum canaliculatis, septem superioribus profundè decussatis; costis longitudinalibus prominentibus, interstitiis quasi-punctatis; anfractu penultimo et ultimo distinctè transversim acutiliratis; costis longitudinalibus ferè evanidis; apertura obliqua; labro exteriore multum incrassato. Long. 5, lat. 1.50 mm.*

<sup>1</sup> Mem. Manchester Soc., ser. 4, vol. 7, p. 17-51, 1893.

A beautifully sculptured *Rissoina*, allied, of course, to *R. antoni* Schwag., *R. spirata* Sow., etc., but differing from all in the decussate and strongly longitudinally ribbed sculpture of the seven upper, and in the acutely carinate transverse liræ of the two last whorls. The mouth is oblique, outer lip extremely thickened. There is one specimen in this collection and three, precisely similar, unnamed in the British Museum, also from Madras (coll. Thurston). *Θαυμάσιος*, wonderful.

***Syrnola maderaspatana* n. sp.** (Pl. I., fig. 4).

*S. testa fusiformi, versus apicem multum attenuata, perlævi; anfractibus quatuordecim, apicali incluso, vitreo, pellucido, cæteris ad suturas canaliculatis, pallidissime ochraceo-vinctis, apud suturas utrinque pellucide albo-ligatis; ultimo anfractu ad peripheriam sub lente ochracea linea succincto; apertura oblonga; labro recto, marginem apud columellarem paululum reflexo, uniplicato. Long. 10, lat. 2.50 mm.*

An interesting shell, which at first gave difficulty as to precise location. Had no plait been present, we should have deemed it a *Eulimella*; it is nearer in facies to an *Obeliscus* than a *Syrnola*, but its distinct columellar plait places it in the latter genus. At first we compared it with *Obeliscus turritus* Ad., but the mouth processes are altogether different. The apex is in very perfect condition, and shows a translucent bulbosity.

***Turbonilla coromandelica* n. sp.** (Pl. I., fig. 5).

*T. testa pergracili, multum attenuata, albida, pellucida, delicatula; apice heterostropho vitreo; anfractibus quindecim, ventricosulis, undique longitudinaliter arcuè recticostatis; interstitiis levibus, nitidis; apertura trapezoide; labro extus tenui, simplice, columellarem apud marginem paululum reflexo. Long. 7, lat. 1.50 mm.*

Many examples of an exceedingly graceful, attenuate, shining-white *Turbonilla*, which does not correspond with any example in the British Museum collections, nor have we seen it described or figured in any monograph. It does not approach any species nearly that we are cognizant of, the whorls being fifteen in number, delicate, pellucid, ventricosely tumid, shining, closely longitudinally straightly ribbed, the interstices being quite smooth, mouth unequally square, outer lip thin, simple, and slightly reflexed at the columellar margin.

***Cadulus anguidens* n. sp.** (Pl. I., fig. 6).

*C. testa paululum arcuata, apud apicem attenuata, pellucide albida; apertura rotundo-ovata, margine obliquo; apertura posteriore parvo, rotundo, simplici, tenui. Long. 8, diam. oris 1, apicalis 0.50 mm.*

A graceful attenuate slightly arcuate *Cadulus*, gradually increasing in diameter till the oblique aperture is reached. The shell is subpellucid, white, quite smooth, posterior or apical orifice minute, simple, round, thin, the mouth being roundly-ovate, with very oblique margin. Two specimens, differing from any in the National collection.

***Sanguinolaria hendersoni* n. sp.** (Pl. I., fig. 7).

*S. testa tenui, ferè lævi, subnitida, obscure concentricè inæqualiter striata; valvis posticè et anticè paululum hincis; margine postico subtrapezoide, paululum producto; antico prolongato, rotundato, ventrali rectiusculo; dorsali leniter utrinque declivi; umbonibus levibus, roseis, cætera superficie pallidè rosea. Long. 23, lat. 35 mm.*

A beautiful addition to a circumscribed genus. To no known species does it nearly assimilate, save in colour, coming perhaps nearest to the West Indian *S. sanguinolenta* Gm., which, however, is far more produced and gaping posteriorly. The type, from Mr. Henderson's collection, is of the dimensions given above, but three other specimens, smaller but quite perfect (long. 20, lat. 32 mm.) exist in J. C. Melvill's collection, which were obtained at a sale at Stevens' auction rooms, in Dec., 1866, without label of locality. We have much pleasure in naming this species after its discoverer.

(II.) GENERAL CATALOGUE.

We have carefully compared the following list with that<sup>1</sup> compiled by Mr. Edgar Thurston, C.M.Z.S., Superintendent of the Madras Government Museum, when investigating the Zoology of Rámésvaram Island, and the Gulf of Manaar, Ceylon, and find 106 species in common. Probably the very few of Mr. J. R. Henderson's Mollusca collected at Pámban, were obtained about the same time as Mr. Thurston's; the majority gathered 250 miles further north show on the whole a great dissimilarity.

Mr. Thurston's catalogue enumerates about 425 Marine Mollusca, inclusive of a few brackish water or fluvial forms, such as *Tympanotonos*, *Potamides*, and *Melanie*, from Pámban and Tuticorin, which we have not mentioned though they occurred in Mr. Henderson's gatherings. Like ourselves, he has not attempted differentiation of the Chitonidæ. Our two species, both small and insignificant, are probably new, for as Mr. E. R. Sykes informs us, no Chitonidæ are yet recorded from Madras.

Amongst Mr. Thurston's more interesting records we note *Conus longurionis* Kien., which has lately occurred on the Malabar Coast (Townsend), *C. pepulum* Chemn., from Muttuwartu; *Mitra zebuensis* Rv., from the same place, this being one of the finest of the genus, also *M. acupicta* Rv., *Cypræa lentiginosa* L. (also found along the whole W. Coast of Hindustan) *Pterocera scorpia* L., *Ovulum formosum* Ad. Rv., and others. We should hope that many of these will ultimately be found to reach the vicinity of Madras.

That portion of Mr. Thurston's preface which gives a glimpse of the appearance of the Madras coasts, is interesting, and well worth

<sup>1</sup> Bull. Mus. Madras, No. 3, 1895.

quoting here. He says (*L.c.*, p. 79):—"A casual observer walking along the sandy, surf-beaten beach at Madras, will probably find nothing to attract his attention excepting a number of coarse shells destined for the manufacture of chunám (lime), an occasional flattened jelly-fish, and swift-footed crabs (*Ocyropa*), which on the approach of man, scamper away, and disappear like rabbits into their burrows. But if the same observer walks along the shore at Pámban, he cannot help noticing that it is strewn with broken fragments of dead coral, among which branches of madrepora are most conspicuous; and sponges washed on shore by a recent tide, or dried up above water mark. And if he trusts himself upon the slimy blocks of coral which are exposed at low tide, and turns them over so as to display their under-surface, he will find there a wealth of marine life, crabs, boring anemones, annelides, shell-fish, trepangs, (*bêches-de-mer*), and bright-coloured encrusting sponges. And the Madras beach may, allowing for differences of species, be taken as fairly representative of the coast of the Presidency, with the exception of the coral-fringed shores of the islands which skirt the coast of the Gulf of Manaar."

CLASS GASTROPODA.

ORDER OPISTHBRANCHIATA.

FAMILY BULLIDÆ.

*Bulla ampulla* L.—Rather small specimens. Philippines.

FAMILY RINGICULIDÆ.

*Ringicula propinquans* Hinds\*—Five or six, quite normal. Philippines.

ORDER PROSOBRANCHIATA.

FAMILY TEREBRIDÆ.

*Terebra (Euterebra) eximia* Dh.—Exclusive of the new species, this is the most interesting shell in the collection. It is the second known specimen only, the type<sup>1</sup> in Mus. Deshayes being equally finely marked but smaller, ours measuring 48 mm. The sculpture is peculiar and very beautiful.

*Terebra (Euterebra) marmorata* Dh. (Pl. I., fig. 8).—Many typical examples. Australia.

*Terebra (Euterebra) similis* E. Sm.—Described<sup>2</sup> from a unique individual, this being bleached. The two before us from Madras, and one from Karachi (Townsend coll.), were dredged living, are pale ochraceous yellow to fawn colour, and exhibit the characteristic sculpture. The locality having been hitherto unknown makes the discovery of these specimens of unusual interest.

<sup>1</sup> Reeve, *Conch. Icon.*, Plate xxi., fig. 106.

<sup>2</sup> *Ann. and Mag. Nat. Hist.* (4) vol. 11, 1873, p. 265.

*Terebra (Subula) crenulata* L.—Several. A widely distributed species extending from the Indian Ocean to Central Polynesia.

*Terebra (Subula) dimidiata* L.—Common. It is also found at Singapore, Philippines, and Central Polynesia.

*Terebra (Subula) duplicata* Lm.—In all stages of growth. A very common Indian Ocean form. Zanzibar, Madagascar, Moluccas, Singapore, China, to Fiji Islands.

*Terebra (Abretia) cerithina* Lm.—A few typical specimens. Also occurs from Philippines to Society Islands.

*Terebra (Abretia) tenera* Hinds.\*—One only, but perfect and a match for Bombay and Ceylonese specimens, with which we have compared it. Ceylon and Straits of Malacca.

*Terebra (Hastula) aciculina* Rv.—Three specimens. The smaller size, colour, longer plications, and broad base distinguish this species from *T. cinerea* Born, with which it is often confounded. It occurs at Singapore, Manila, Marquesas, and Sandwich Islands.

*Terebra (Hastula) strigilata* L.—Also from Polynesia and Sandwich Islands.

*Terebra (Myurella) cingulifera* Lm.—Typical. Also recorded from Philippines, New Ireland, Lifu, Fiji, and China.

*Terebra (Myurella) monilis* Quoy.—Several. According to Tryon this is but a synonym of *T. straminea* Gray. Philippines, China.

*Terebra (Myurella) myuros* Lm.—Two examples of this well known species, which also occurs at Moluccas, Lifu, and New Ireland.

*Terebra (Myurella) persica* E. Sm.—Very beautiful, being highly chased and shining, though much grooved and latticed. A remarkable extension of its range as hitherto recognised. Persian Gulf.

*Terebra (Myurella) cf. turrita* Dkr.—An interesting little form, which may be distinct, but there is only one specimen, so it is hard to come to a satisfactory conclusion on the subject.

*Terebra (Myurella) undulata* Gr.—Also recorded from Philippines and Fiji.

FAMILY CONIDÆ.

*Conus mutabilis* Chemn.\*—Red Sea, St. Domingo, China.

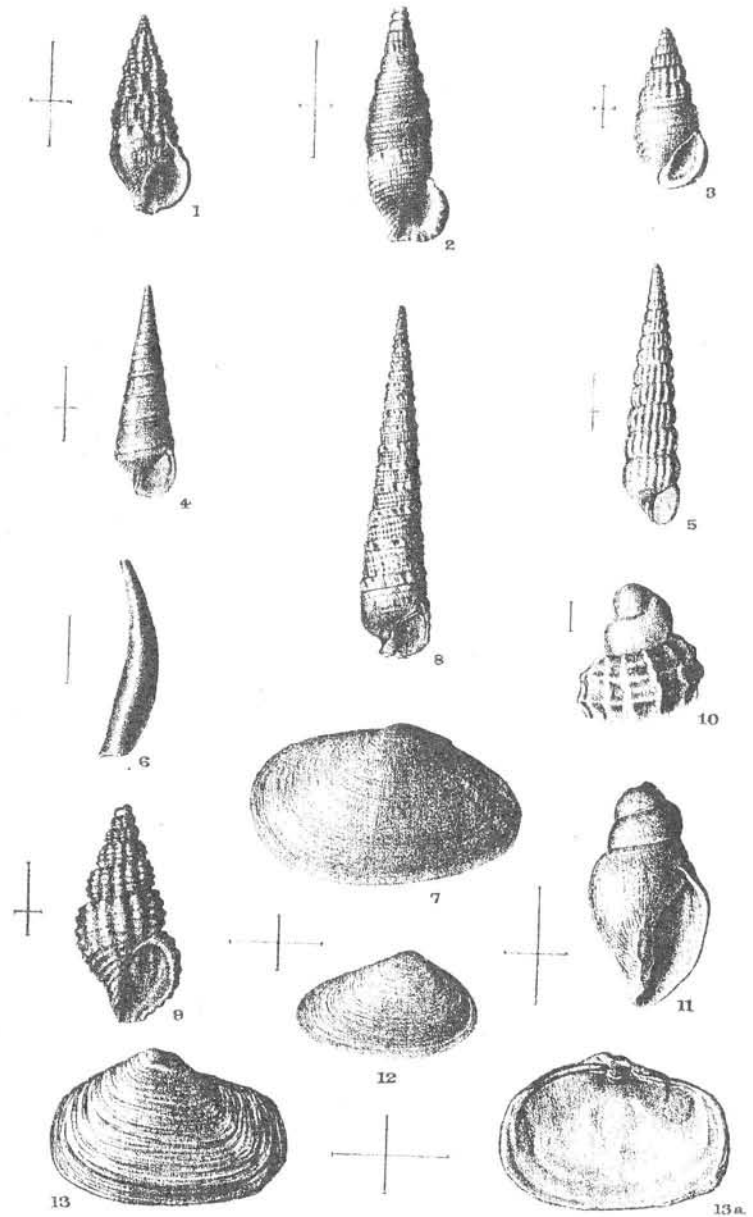
*Conus (Coronaxis) hebraeus* L.—Widely distributed. East Africa, Ceylon, Mauritius, Japan, Philippines, New Caledonia to Fiji.

*Conus (Coronaxis) pusillus* Chemn.—A pretty little shell, which Tryon places as a variety of *C. ceylouensis* Hwass. Red Sea,



EXPLANATION OF PLATE I.

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G.M. Woodward del. et lith.

West, Newman imp.