

Descriptions of marine Gastropoda from Ceylon, &c. ;—

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This paper is a continuation of the one we had the honour of placing before the Society at the August meeting of last year (1868). These new species, as likewise those previously described, were, with one exception, collected in the Southern Province of Ceylon, mostly near Balapiti; the *Rapana*, one of us had previously also found at La Réunion (Bourbon). We have also seen several of the small species of TROCHIDÆ from Bombay and Arakan, probably all of them are to be met with along our coasts, though the small and interesting little species, we have here named *Euchelus Seychellarum*, we have never met with anywhere in these seas, except at the Island of Mahé, one of the Seychelle group.

Clanculus Ceylonicus—N. S., Pl. XVII, Fig. 7.

T. parva, turbinata; anfractibus senis, convexiusculis, albescens, prope suturam posteriorem maculis fuscis transversaliter prolongatis notatis, ad suturam anteriorem puncturatis; costulis spiralibus quinis in quoque anfractu granulosis; sutura subprofunda; ultimo anfractu ad peripheriam subrotundato; basi leviter convexiuscula, granulato-costulata, umbilicata: umbilico margine incrassato ac denticulato circumscripto; apertura quadrangulari, labro intus crasse costulato, labio calloso, recto, ad medium obsolete, antice crasse dentato.

Alt. 7 Mil.—Diam. maj. 7 Mil.

Abundant.—S. Prov. Ceylon;—also occurs at Bombay.

Euchelus Seychellarum—N. S., Pl. XVII, Fig. 10.

T. parva, depresso-conica, sub-globulosa, alba, solidula; anfractibus quaternis, convexiusculis, suturâ impressâ junctis, costulis spiralibus minute sed confertim granulatis ornatis; ultimo anfractu ad peripheriam rotundato; basi convexâ, spiraliter granulato-costulata, anguste umbilicata; apertura subrotundata: labro uniforme arcuato, ad marginem obtusiusculo, intus sulcato; labio recto, oblique decurrente, antice denticulo parvo instructo.

Alt. 2½ Mil.—Diam. maj. 3 Mil.

Scarce.—Island of Mahé (one of the Seychelle group).

Gibbula Dupontiana—N. S., Pl. XVII, Fig. 8.

T. parva, trochiformis, pallida, transversaliter maculis irregularibus fuscis notata; anfractibus costulis senis spiralibus, crassis circumdatis, prope suturam angustioribus, transversaliter lineis subtilissimis obliquis ornatis; ultimo anfractu ad peripheriam angulato, ad basin applanato, profunde umbilicato; apertura sub-quadrangulari, labro ad marginem acuto, intus sub-incrassato; labio tenui, simplici, leviter arcuato.

Alt. 7 Mil.—Diam. maj. 6 Mil.

Common on sea-weed at low water, S. Prov. Ceylon.

This species is named after M. Dupont, of Mauritius, whose indefatigable zeal has so greatly increased our knowledge of the interesting fauna of that Island. The nearest shell, I know of, to the above is one described by Reeve as *Ziziphinus vexillum* (G. Nevill).

Gibbula Blanfordiana—N. S., Pl. XVII, Fig. 9.

T. parva, turbinata, depresso-globulosa, solida, alba, rubide variegata et marmorata; spira ad apicem sub-obtusa; anfractibus quinque, postice sensim angustioribus, ad medium sub-angulatis, spiraliter costulatis: costulis senis, crassiusculis tenuioribus alternantibus; ultimo anfractu ad peripheriam rotundato; basi convexiuscula, umbilicata: umbilico callositate albida, paulo incrassata, circumscripto; apertura sub-rotundata, labro crassiusculo, intus striato, ad marginem eleganter crenulato, postice paulo deflexo; labio prope recto, oblique decurrente, levi, ad medium paululum incrassato.

Alt. 5½ Mil.—Diam. maj. 6½ Mil.

Not uncommon;—S. Prov. Ceylon; found on sea-weed at low water.

A somewhat allied species to the above was described by Deshayes in his work on the shells of Bourbon, as *Turbo (!) filifer*, the differences in the umbilicus, the columellar margin, &c., however, distinguish it at the first glance. I have also seen this species from Arakan, in Mr. H. F. Blanford's fine collection; like the following, it probably has some considerable range in these seas. (G. Nevill).

Gibbula Stoliczkana—N. S., Pl. XVII, Figs. 2-3.

T. conoidea, parva, solidula, olivacea seu rufescens, maculis transversalibus pallidis notata, aut minute variegata, epidermide fulvescente induta; anfractibus senis, sub-planis, suturâ impressâ sejunctis, spira-

liter minute sulcatis: sulcis liris depressis latioribus, æqui-distantibus separatis; ultimo anfractu maximo, ad peripheriam angulato; basi leviter convexa, spiraliter striata, profunde et anguste umbilicata, in excavatione umbilici albida; apertura oblique quadrangulari, intus callositate moderata ac lævi instructa; labro ad marginem sub-obtuso, labio prope recto, albido, antice truncatim desinente.

Alt. 6½ Mil.—Diam. maj. 5 Mil.

Not uncommon, in the same places as the preceding.

This pretty little species varies immensely, not only in colour and size, but also as regards the convexity of the whorls and the angle of the spire. There are specimens from Arakan and from the Audamans, in the collection of Dr. Stoliczka, after whom the species is named, and who kindly assisted us in drawing up the descriptions of the species noticed in this paper.

Gibbula? sub-plicata—N. S., Pl. XVII, Fig. 1.

T. turbinata, tenuis, semipellucida, alba; anfractibus quinis, tubulosis, ad suturam applanatis, spiraliter costulatis: costulis in anfractu penultimo tribus, omnibus valde prominentibus, interstis profundis, distantioribus separatis, in anfractibus superioribus transversaliter cancellatis seu scrobiculatis, in ultimo spiraliter subtilissime striatis; anfractibus omnibus ad suturam transversaliter plicatis; basi subconvexa, anguste umbilicata, quatuor costulis spiralibus ornata, interstis duobus, prope umbilicum sitis, transversaliter costulatis; apertura fere circulari, margine simplici circumdata, labio moderate insinuato; superficie interna paululum margaritacea.

Alt. 5 Mil.—Diam. maj. 4 Mil.

Rare;—S. Prov. Ceylon.

There is some difficulty in determining in what genus, or sub-genus to place this curious little species, the thinness of shell and the peculiar sculpture of the body-whorl, as well as the slightness of the internal pearly layer, make its position, as long as the animal and operculum are unknown, somewhat doubtful.

Tallorbis—N. Sub-G.

T. sub-orbiculata, subconica, columella solidâ, antice applanatâ, transversaliter plicata et abrupte terminata instructa; habitu generi, Thalotia dicto, affinis.

We experience some considerable difficulty in determining the exact

position of the above sub-genus. *Thalotia* appears to be the one to which it is next allied, though the general form, sculpture and substance are very far removed from any species of that genus with which we are acquainted.

Tallorbis roseola—N. S., Pl., XVII, Fig. 5.

T. depresso-conica; *anfractibus quinis, in latitudine rapide crescentibus, suturis profundis sejunctis, spiraliter distanter costulatis: costulis in anfractu penultimo tribus; omninis distantibus, tuberculis numerosis, roseis eleganter ornatis, interstis latis, una stria spirali in medio divisis, transversaliter cancellatis; basi convexa, similariter ornata; apertura ampla, subrotundata, margaritacea, intus in adultis speciminibus lævi, in junioribus sulcata: labro haud incrassato, ad marginem crenulato, labio tenui; columella antice incrassata, subreflexa, plicis tribus, tortis instructa.*

Alt. $11\frac{1}{2}$ Mil.—Diam. maj. 11 Mil.

Very rare;—S. Prov. Ceylon.

Pisulina—N. G.

T. crassiuscula, polita, semi-globosa, neritiformis, spirâ brevi, apertura sub-orbiculari, integrâ, haud umbilicatâ instructa; labio columellari applanato, calloso, in medio dentiforme dilatato, labro simplici.

This genus approximates so closely to *Calceolina* of A. Adams, that we entertained doubts, as to whether it was desirable to separate it, the remarkable protuberance of the inner columellar lip, however, decided us on doing so, though, until the animals and opercula (if any?) have been carefully examined, we shall feel some doubts, as to whether both of them are not mere sections of *Teinostoma*.

Pisulina Adamsiana—N. S., Pl. XVII, Fig. 4.

T. parva, alba, lævis, solida; spira obtusa; anfractibus quaternis, superis interne, sicut in speciminibus Neritarum, evanidis; sutura indistincta; labio columellari calloso, polito, lævi, denticulo lato, depresso ad medium munito; labro intus paululum incrassato, polito, ad marginem acuto.

Alt. $4\frac{1}{2}$ Mil.—Diam. maj. 4 Mil.

Dead, on the sands; S. Prov. Ceylon.

We have named the above interesting little species after Mr. Henry Adams, who has most kindly given us much valuable assistance and aid, besides describing many of our new Mascarene shells.

Rapana bella—N. S., Pl. XVII, Fig. 6.

T. pyriformis, tenuis; anfractibus quinque, convexis, suturâ impressâ junctis, ultimo anfractu valde inflato; spira brevi, obtusiuscula; superficie alba, fasciis ac striis roseolis, transversaliter elongatis notata, ac striis spiralibus, postice sub-obsoletis, antice ad basin crassis, lamellatis, seu crispiculatis ornata; apertura lata, arcuata, postice sub-angulata antice multo angustiori; labro simplici, tenui ad marginem undulato; labio levi. imprimis antice calloso; basi producta, antice canali brevi recurvato, terminata, umbilicata: umbilico carinâ rugatâ seu lamellosâ circumscripto,

Alt. 21 Mil.—Diam. maj. 22 Mil.

Very rare. Bourbon and Ceylon.

Wood in his "Catalogue of Shells" (pl. 18, fig. 31b) figures a shell apparently belonging, to this species, under the name of *Bulla rapa*, Lin., from China. Hanley, however, in his "Ipsa Linnei Conchyliâ" states that Linnæus' *Bulla rapa* is identical with Lamarck's *Pyrula papyracea*, a quite different species from the present one.

Emarginula papilionacea—N. S., Pl. XVII, Fig. 12.

T. ovato elongata, subconica, moderate elevata, tenuis, alba; apice sub-centrali postico, acuminato ac incurvo; superficie, costulis radiantibus quindecimis fortioribus, sub-tuberculatis ac scrobiculatis, lineis alteris numerosis tenuioribus, rugulatis interpositis ornata; fissura antica moderate incisa, subangusta, postice elevata ac rugulosa; superficie interiori nitida, radiatim leviter sulcata, impressione musculari quadripartita, partibus duabus anterioribus multo minoribus quam posteribus, omnibus triangularibus convergentibus.

Long. 12½ Mil.—Diam. 9 Mil.

Very rare,—S. Prov. Ceylon.

There is no species at all resembling this handsome shell; the internal impression bears a rather striking resemblance to a butterfly, the shell is sufficiently transparent for it to be clearly discernible from the exterior.

Emarginula capuloidea—N. S., Pl. XVII, Fig. 16.

T. parva; regulariter ovata, capuloidea, tenuis, pellucida, apice postico, arcuatim incurvato, instructa; superficie costulis per-numerosis acutis, æquidistantibus, tenuioribus alternantibus notata, interspatiis

profunde ac rude scrobiculatis; aperturæ marginibus valde crenulatis; fissurâ centrali, antica, anguste et moderate incisâ; impressione palliali postice rotundata, prope apicem lateraliter profunde insinuata, antice prolongata ac gradatim latiori, ad terminationem truncata.

Long. 5½ Mil. — Diam. 4 Mil. — Alt. 3 Mil.

Very rare, — S. Prov. Ceylon.

The nearest allied species to the above, that we know of, is *E. crassicostata*, Sow., it is, however, smaller, more elevated, not narrowed anteriorly and the sculpture is somewhat different.

Sub-emarginula Oldhamiana—N. S., Pl. XVII, Fig. 17.

T. oblonga, conico-elevata, solida; apice acuto, sub-centrali, sinistrorse incurvato; superficie externa virescenti, in parte anteriori 5-6—costata: costâ mediâ maxima, ad marginem aperturæ valde prominenti, intus profunde canaliculata, in parte posteriori costis senis radiantibus instructa; omninis plus minusve rugatis, atque costulis et striis numerosis interpositis, versus apicem obsoletis notata; superficie interna albida; impressione palliali magna, prope marginem anteriorem profunde insinuata.

Long. 12 Mil. — Diam. 7½ Mil. — Alt. 9 Mil.

S. Prov. Ceylon, Scarca.

The shell approaching nearest to the present species is *S. Panhiensis*, Q. and G., from which it differs by the peculiar sinistral bend of the apex, which is likewise more decidedly central by the greater production of the anterior rib, forming a far more prominent canal, by the great inequality of the radiating ribs, &c.

Solarium impressum—N. S., Pl. XVII, Fig. 11.

T. late-conica, depressiuscula, solidula, rufulâ seu radiatim fusco strigatâ; anfractibus quinque, depressis, suturâ profunda junctis, spiraliter quatuor seu quinque striis minute granulosis notata, striis incrementi obliquis sub-distincte decussatis; suturis impressis earumque marginibus paulo incrassatis ac granulatis; ultimo anfractu ad peripheriam sub-carinato, ad basin convexo, profunde umbilicato; umbilici margine incrassato granulatoque: granulâs albidis, mediocriter prominentibus; apertura oblique quadrangulari marginibus simplicibus instructa.

Alt. 3 Mil. — Diam. 5½ Mil.

S. Prov. Ceylon.

Though possessed of no very distinctive characteristics, there is no species, I know of, with which the preceding can be confounded.

Fissurella (?) Scrobiculata—N. S., Pl. XVII, Fig. 15.

T. parva, depressa, fere regulariter ovalis, lateraliter prope medium paululum angustata, antice ac postice rotundata, alba, fasciis radiantibus haud distinctis fulvescentibus notata; superficie omnina supra minute scrobiculata, ac striis radiantibus subobsoletis ornata; foramine late ovato, sub-postico, margine elevato circumdato; margine aperturae attenuato, minute crenulato; superficie interna alba.

Long. $9\frac{1}{2}$ Mil.—*Diam.* $5\frac{3}{4}$ Mil.—*Alt.* $2\frac{1}{2}$ Mil.

Scarce, S. Prov. Ceylon.

The sculpture of this interesting shell is very peculiar, the surface being covered with rough, diamond-shaped scrobiculations, perhaps caused by its being covered by the mantle of the animal, in which case, this species will have to be removed to *Macrochisma*.

Fissurella canalifera—N. S., Pl. XVII, Fig. 13.

T. ovato-elongata, antice angustata et ad terminationem retrorse elevata, solidula, concentrice lamellose rugata et striis inaequalibus radiantibus ornata, rufescente pallida, nonnullis maculis elongatis obscuris radiantibus notata; foramine longo, sub-centrali, antice ac postice rotundato; superficie interna albida; margine aperturae obtusiusculo, fere simplici, minute crenulato, antice insinuato; margine foraminis paulo incrassato, obtusiusculo.

Long. 14 Mil.—*Diam.* $7\frac{1}{2}$ Mil.—*Alt.* $4\frac{1}{4}$ Mil.

S. Prov. Ceylon.

Easily distinguished from any other species of *Fissurella*, by the curious way in which the shell, at the anterior end is turned up and contracted, thus forming interiorly a sort of canal; the black stripes in position, also, seem tolerably constant, there being two broad ones radiating from the posterior end of the foramen and the same number, but narrower and more indistinct, from the anterior end.

Macrochisma scutiformis—N. S., Pl. XVII, Fig. 14.

T. ovato-elongata, lateraliter compressiuscula et paulo insinuata, moderate elevata, solidula, striis radiantibus ac concentricis minutis ornata, sordide albida, fasciis nonnullis radiantibus fuscis notata; foramine longo, excentrico fere tertiam partem diametri longitudinalis occupanti, postice angustato; margine aperturae obtusiusculo, simplici; margine foraminis intus incrassato.

Long. $12\frac{3}{4}$ Mil.— $6\frac{1}{2}$ Mil.—Alt. 2 Mil.

Rare,—S. Prov. Ceylon.

We know of no other species of the genus with a similarly formed foramen; it differs from *M. hiantula*, Swains., not only in the above respect, but also in colour and in being laterally more compressed.

Rocellaria cordiformis—N. S., Pl. XVII, Fig. 18.

T. parva, fragilis, longitudinaliter oblonga, albida, antice obtuse acuminata, postice producta, sub-rotundata; umbonibus tumescentibus, paulo prominentibus, incurvatis; hiatu cordiformi, parvo, vix dimidiam partem testæ occupante; superficie striis subtilibus, antice fortioribus, undique acutis ac confertis ornata, et sulca lævi ab umbone utriusque valvulæ oblique ad marginem ventralem medianum decurrente notata.

Long. $6\frac{1}{2}$ Mil.—Diam. $3\frac{1}{2}$ Mil.

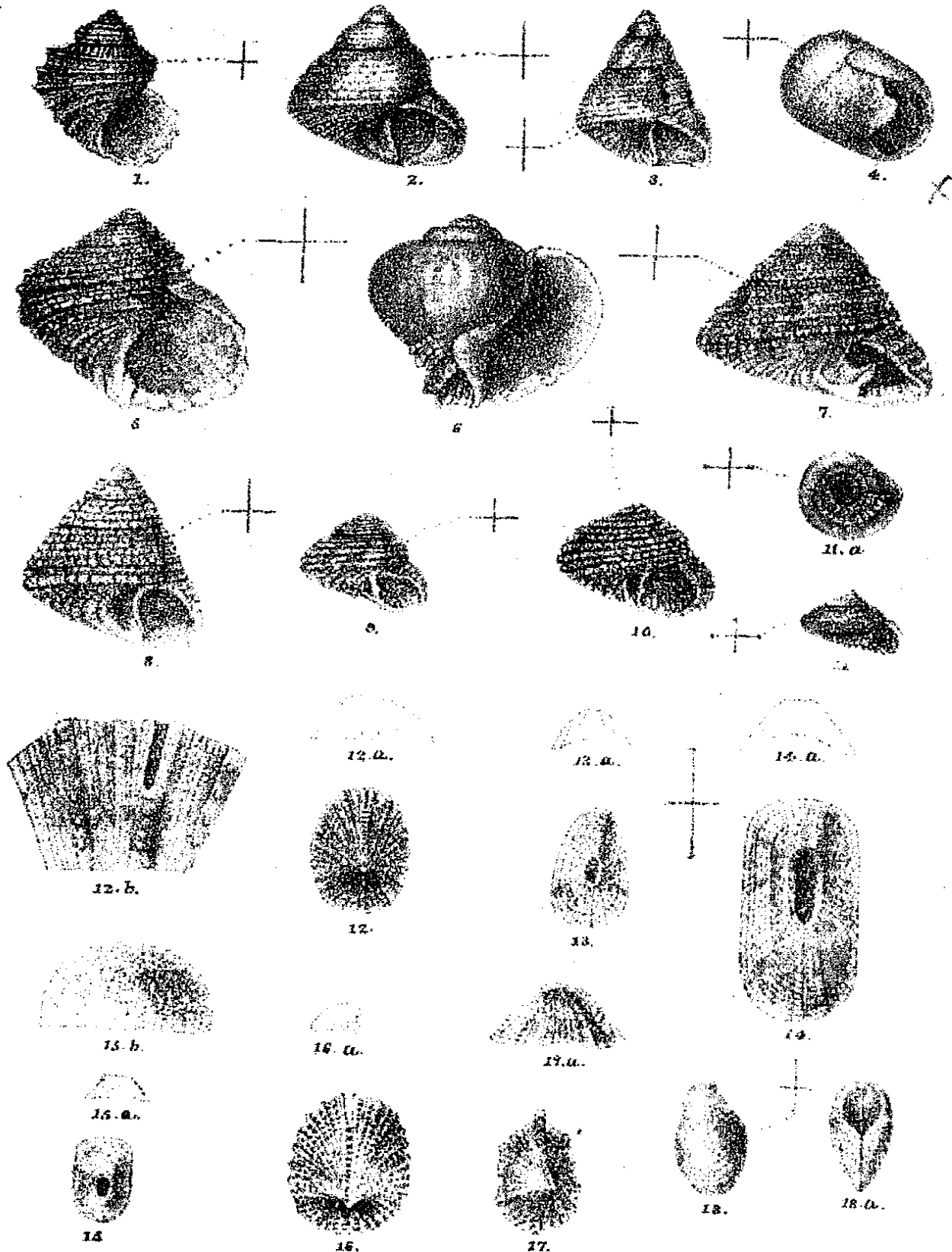
S. Prov. Ceylon. In coral.

The smallness of size and the peculiar heart-shaped form of the hiatus, easily distinguish this species from others.

Ornithological Notes, chiefly on some birds of Central, Western and Southern India; by WILLIAM T. BLANFORD, F.G.S., C.M.Z.S., &c.

[Read and received 3rd March, 1869.]

The following are a few notes on collections of birds made 1st, in Nág-púr, Chanda, and on the upper Godávery; 2nd, at and near Khandalla on the Western Ghats near Bombay; 3rd, on the Nilgiri hills in Southern India. The first alone was large, and was made during the cold and hot seasons of 1866-67; the other two during short visits to the places named. By far the greater portion of the ensuing pages refer to the first collection alone. Several of the birds observed and collected are very rare: one, *Salpornis spilonotus*, Franklin, had only been previously procured by the describer and by Mr. Hodgson, and no specimen of the bird was ever seen by Mr. Blyth or by Dr. Jerdon, until very recently. *Hirundo fluvicola* had not, so far as I am aware, ever been found again in Central India, since Dr. Jerdon first described it, and *Cyornis Tickellia*, Blyth, has equally escaped observation since first collected by the excellent ornithologist after whose wife it was named, while the range of several species noted below, was not previously known to extend into the countries mentioned.



1. *Gibbula* (?) *sub-plicata*
- 2-3. — *Stoliczka*
4. *Pisulina Adamsiana*
5. *Tallorbis roseola*
6. *Rapana bella*
7. *Clanculus Ceylanicus*
8. *Gibbula Dupontiana*
9. — *Blanfordiana*
10. *Euchelus Seychellarum*

11. *Solarium impressum*
12. *Emarginula papilionacea*
13. *Fissurella canalifera*
14. *Macroch. scutiformis*
15. *Fissurella* (?) *scrobiculata*
16. — *capuloidea*
17. *Sub-emarg. Oldhamiana*
18. *Recellaria cordiformis*