

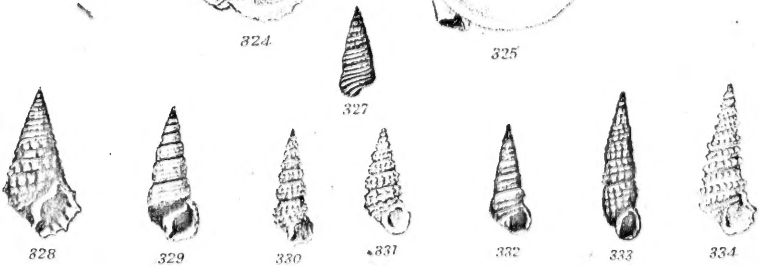
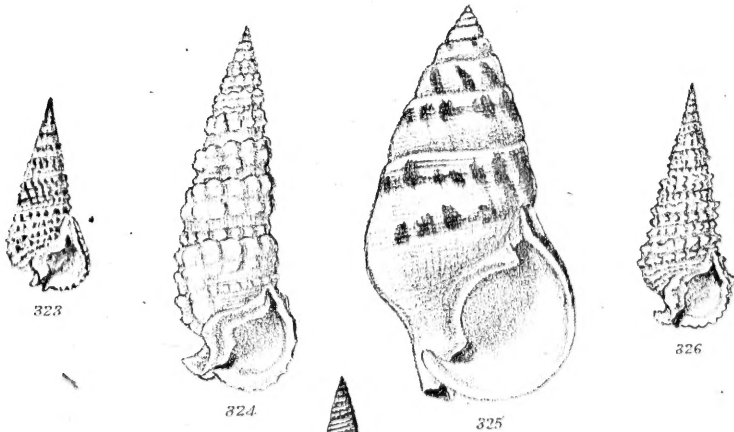
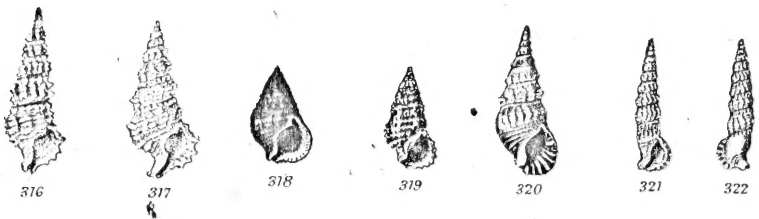
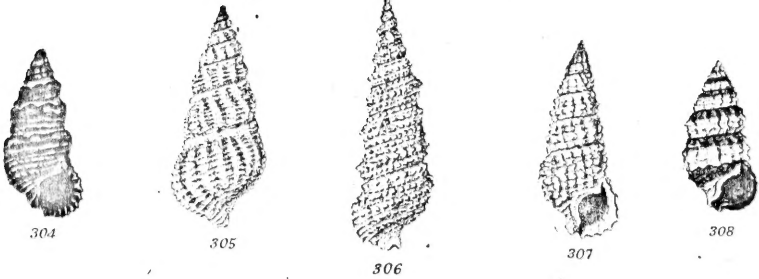
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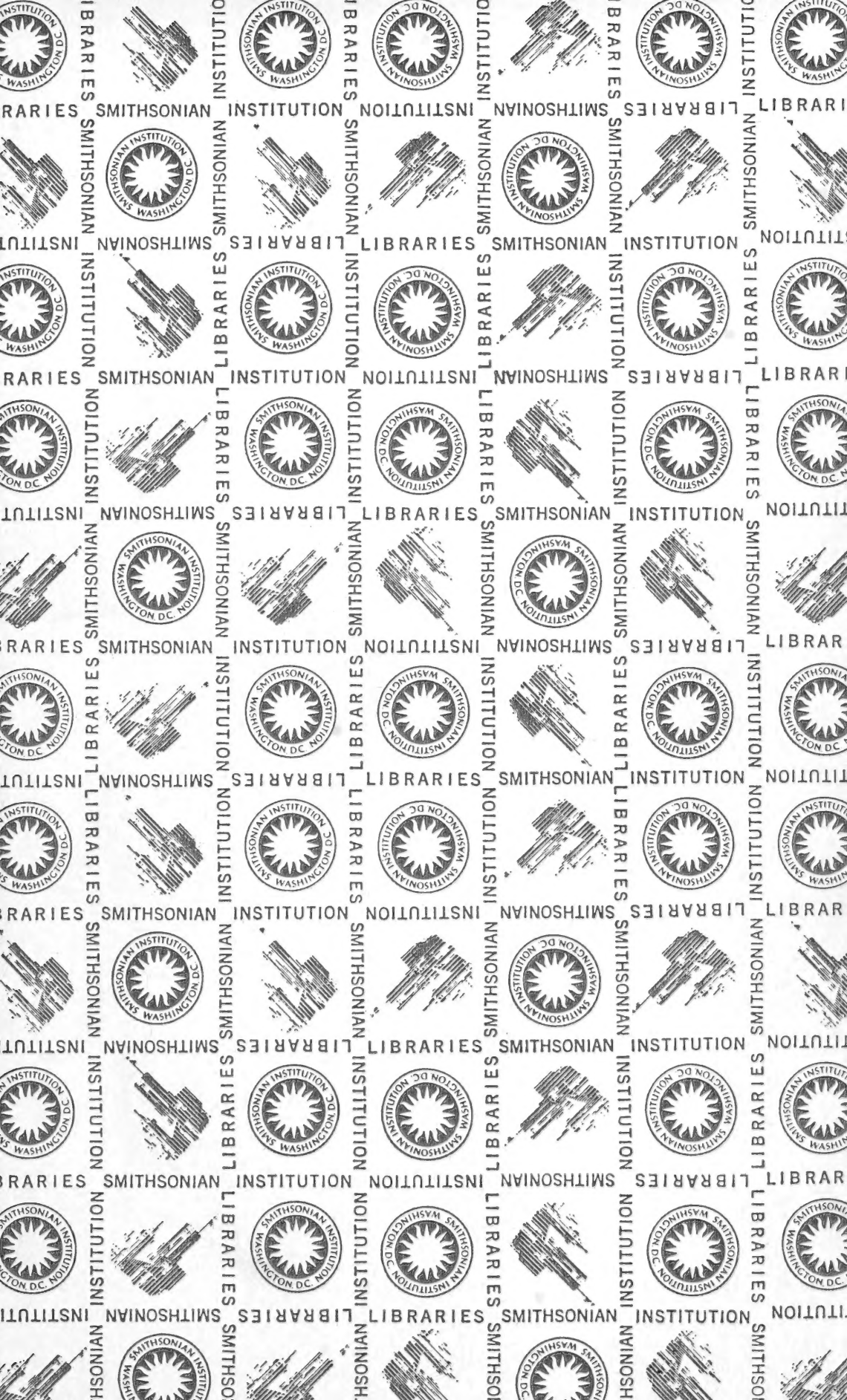
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CERITHIUM XII.

Thes. Pl. 290.





Dates of issue of *Thesaurus Conchyliorum*,
 or Monographs of Genera of Shells,
 by G. B. Sowerby, 2d.

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THESAURUS CONCHYLIIORUM,

OR

MONOGRAPHS

OF

GENERA OF SHELLS.

EDITED BY

George Sowerby, 1812-1884
G. B. SOWERBY, F.Z.S.
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1887.

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MONOGRAPH OF THE GENUS

LATIAXIS, *Swainson.*

GENERIC CHARACTER.—Testa angulatim fusiformis vel turbinata, canali extus late umbilicato, varice spirali, exfoliata marginato.—The shells associated in our plate, and mostly supposed to belong to this genus, have one or more of certain characters which link them together so as to form in appearance a natural group. The type is *Pyrrula Mawæ*, remarkable for the breadth of its umbilicated disc in the region of the canal. This character appears more or less in all the species but two, which otherwise resemble the umbilicated species so closely as to be scarcely separable. The exceptions are *L. fruticosus*, *Gould*, and *L. pagoda*, *Adams*. The species are all peculiarly sloped down towards the angle excepting *L. Mawæ*.

Species.

1. MAWÆ, f. 9, *Gray*.—Testa roseo-alba turbinata, spira elevata superne compressa, anfractibus laxatis spiraliter scabroso-sulcatis, angulatis, ad angulum laminae trigonis latis crispatis coronatis, supra angulum late subplanulatis, infra medium coarctatis, ad canalem expansis late umbilicatis extus exfoliatis, apertura superne subrotunda, canali oblique tortua.—Of a remarkable form, needing no description for English readers.

2. DEBURGHLE, f. 5, *Reeve*.—Testa subturbinata albida solida spiraliter sulcata; spira exserta, anfractibus 5 brevibus subacute angulatis, ad angulum laminae latis elongatis oblique extantibus sursum acclivibus coronatis, supra angulum

complanatim declivibus; ultimo infra medium coarctato, ad canalem moderate expanso exfoliato umbilicato; apertura trigona, intus lirata, margine crenato, canali breviusculo fere recto.—This species may be said to partake the characters of *L. Mawæ* in a moderate degree, excepting in the laxity of the whorls.

3. *CARINIFERUS*, f. 6, *Sowerby*.—Testa quam *L. Deburghiæ* brevior latior, liris spiralibus rugoso-prominentibus, undulatis, laminis extantibus ad angulum brevioribus.—The form is shorter, the crowning laminæ shorter and the spiral ridges much more prominent and undulating.

4. *ELEGANS*, f. 4, *Angas*.—Testa subovata albida, liris scabrosis spiralibus cincta; spira subelevata, acuminata, anfractibus acute angulatis, ad angulum laminis granosis trigonis coronatis; supra coronam declivibus; ultimo ad medium laminatim spinoso, infra angulum serrato unilirato, infra medium squamoso sulcato, ad canalem tortuo; apertura subtrigona margine spinoso, canali brevi, obliquo.—The last whorl has not only the broad laminated corona on the angle, but also another inclining downwards in the middle, and a serrated ridge between. The spire is more elevated than in that of *L. Deburghiæ*.

5. *GRAVESII*, f. 7, *Broderip*.—Testa fulva angulata crassa; spira elevata acuminata, anfractibus angulatis, ad angulum spinis triangularibus compressis coronata; ultimo spinis ad angulum latis prominentibus, infra angulum lira serrata, medio et infra seriebus tribus spinarum ornato, axe angustiusculo, vix umbilicato, apertura subtrigona alba, intus lirata, margine spinoso.

6. *MURICATUS*, f. 12, 13, *Hinds*.—Testa alba, acute quadrigona minute scabroso-striata; spira exserta acuminata, anfractibus acute angulatis supra angulum declivibus, ad angulum latissime spinis latis compressis coronatis, ultimo infra medium spinis latis trigonis cincto, ad canalem anguste subumbilicato.—A curious little white shell resembling the rowels of a spur when placed with its head towards the observer. The region of the canal is narrower than usual in this genus.

7. *DIADEMA*, f. 11, *A. Adams*.—Testa pallide roseo-fulva lævi, distanter varicosa; spira elongata, acuminata, anfractibus prominente scalariformibus angulatis, ad angulum alminatim spinosis, ultimo biangulato, varicibus ad angulum

superiorem spiris paucis ensiformibus productis et infra medium minoribus ornatis, apertura brevi, margine quadrispinoso; canalis margine exfoliato, axe subanguste umbilicata; apertura intus lirata.—The whorls are ornamented at their upper angle by produced curved flattened and notched spine-like processes arising from distant varices.

8. EXFOLIATUS, f. 15, *Sowerby*.—Testa alba, quam *L. diadema* angustior, spira haud tantum exserta, spinis ad angulum anfractuum minoribus, axe haud umbilicata, canali angusto; apertura intus lævi.—Having much the general appearance of *L. diadema*, but the produced flattened spines at the angle of the whorls are not nearly so large. In the specimen figured the one at the angle of the mouth is bilobed. The great difference, however, is in the narrowness of the varicose canal and the absence of an umbilicus. The name *pagodus* applied by A. Adams to this shell was preoccupied; see sp. 10.

9. FRUTICOSUS, f. 8, *Gould*.—Testa alba tenuis breviter subovata; spira breviuscula anfractibus angulatis, supra angulum declivibus, ad angulum et medio spinis tuberosis ornatis; apertura trigona, margine lobato, umbilico parvo, margine trifariam tuberculato.—The umbilicus in this curious little species is narrow but not wanting, as in the preceding species; it is bordered by three rows of small tubercles. The spines are not compressed but tubular.

10. PAGODUS, f. 2, 3, *Jonas*.—Testa oblique quadrata pallide fulva, vel subrosea, liris serratis spiralibus sculpta, ad angulum anfractuum carina squamifera undulata marginata; anfractibus subacute angulatis, supra angulum declivibus, ultimo infra medium contracto, versus canalem varice exfoliato marginato subanguste umbilicato, canali spiraliter subtortuo.—Angularly fusiform, with prominently angular whorls, bordered at the angle with an undulated and serrated keel and all over with finely serrated close ridges.

11. TORTILIS, f. 1, *A. Adams*.—Testa *L. pagodo* similis, sed multo magis rude sculpta, canali breviori.—Translucently white, with the serrated ridges much coarser and fewer than in the last. The lower part of the last whorl is less ventricose and more angular.

12. GYRATUS, f. 12, *Hinds*.—Testa parva, *L. pagodo* similis sed minutissime sculpta, carina serrata, ad angulum

anfractuum magis prominenti et regulari.—Exactly like a miniature representation of *L. pagodus*, a small shell, with sculpture minute in proportion; the keel, however, being more prominent and more regular.

13. EUGENIÆ, f. 16, *Bernardi*.—Testa ventricosa subpyrulæformis, spiraliter regulariter sulcata subrosea; spira subconcava, anfractibus obtusissime angulatis, supra angulum concavis declivibus, ultimi angulo supra suturam elevato, umbilico lato, arcuatim elongato; canali oblique tortuo.—The whorls are obtusely angular above the suture, and are slightly concave above the angle, which is very obtuse. The whole surface is spirally grooved.

14. NODOSUS, f. 17.—Testa alba brevis; spira conica, anfractibus rotunde angulatis, ad angulum nodulis rotundis ornata, spiraliter liris crebris minute serratis cincta; umbilico lato, margine serrato; apertura pyriformi, canali brevi, tortuo.—Short and white, with a row of nodules at the rounded angle of the whorls.

15. RHODOSTOMA, f. 14, *A. Adams*.—Testa oblongo-fusiformis subaurea, late fusco-rubescenti trifasciata, spiraliter sulcata, sulcis serratis, spira elevata acuminata, anfractibus declivibus, infra prope suturam rotundatim angulatis, longitudinaliter plicatis, plicis rotundis, prominentibus; umbilico brevi latissimo, margine serrato; apertura rosea, subquadrata, margine crenato, canali oblique tortuo.—Although this has not the decidedly angular whorls of most species, the umbilicated region of the canal is very characteristic of the genus. The spire is longer and the umbilicus wider than in any other species. It is coloured with three broad bands.

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MONOGRAPH OF THE GENUS

FASCIOLARIA.

Testa canalifera late fusiformis, medio vel supra medium ventricosa, epidermide plerumque tenui induta; apertura pyriformi, supra medium extensa, labio interno versus suturam calloso et canalifero, supra canalem triplicato, plica inferiori majori, canali aperto. Operculum corneum, unguiculatum.—Distinguished among fusiform channelled shells by the three plaits on the columella increasing in size downwards. *F. porphyrostoma* and *F. Thersites* are aberrant in form.

Species.

1. GIGANTEA, f. 1, 2, 29, 30, *Kiener* (*Orb. ante?*).—Testa magna ventricosa, solidiuscula, fulvo-rubescens, spiraliter costis latis complanatis et minoribus intermediis cincta; anfractibus supra medium angulatis, tuberculis maximis solidis munitis; apertura rubescenti, quam spira longiori labio externo expanso, margine undato, canali recto brevi lato; epidermide fusco crassiusculo.—Figs. 1 and 2 represent, in my view, the young state of this species, named by my late father *F. papillosa* (*Tanc. Cat. App.*) as received by Reeve and others, and probably *F. Fischeriana* by Kuster. Fig. 29 is from the British Museum specimen nearly two feet long, and f. 30 from a fine, less-developed specimen in Mr. Hanley's collection. The shell figured by Kiener ranks between the two latter, and completes the chain connecting *F. papillosa* with *F. gigantea*.

2. PRINCEPS, f. 5, *Sowerby*.—Testa elongato-fusiformis, utrinque acuminata, aurantia, epidermide fusco crasso induta,

spiraliter costis rotundis distantibus cincta; spira eleganter producta, anfractibus infra medium angulatim nodulosis; apertura pyriformi, vivide aurantia, intus rubro-lineata margine externo undulato, duplicatim dentato; operculo ornatim sulcato et laqueato.—Of a more elegantly sloping form than *F. gigantea*, and having a deeply grooved and fluted operculum.

3. CORONATA, p. 3, *Lamarck*.—Testa breviuscula fusiformis fulvo-flavida vel fusco subcinerea, costellis distantibus et alteris minoribus intermediis spiraliter cincta; spira mediocri, anfractibus supra medium angulatis declivibus, ad angulum nodosis.—Figs. 14. *a. b.* and *c. d.* in Reeve's *Iconica* probably represent the same species, the former most nearly resembling our fig. 3. In the collection of the late Mr. Taylor there is a brighter shell with a more open texture.

4. FUSIFORMIS, f. 4, 31, *Valenciennes*.—Testa pallide fulva vel ferruginea, gracile fusiformis spiraliter sulcata; anfractibus medio brevibus, superne subangulatis, superioribus tuberculosi; apertura supra canalem rotunda, margine crenato.—The figure in *Kiener's* Monograph is rounder and less tubercular than the shell we figure from the British Museum as identified by Reeve for *F. fusiformis*. Still the two may possibly be but variations of the same species. Our figure 31 is copied from *Kiener*, who gives it as from type in the French Museum. It resembles *F. crocatus*, Phil.

5. LUGUBRIS, f. 10, 24, *Adams* and *Reeve*.—Testa subpyriformis, fusco-cinerea, liris et striis intermediis spiraliter cincta; spira conica breviuscula, acuminata, anfractibus angulatis, superne declivibus, ad angulum subnodosis; apice acuminato subpapilloso; apertura pyriformi, columella superne canaliculata, margine externo acute denticulato, canali brevi, infra subacuminato; epidermide crassiuscula, fusca.—This species was named as above several years before its publication by *Krauss* as *F. badia*. Our fig. 10 is from an uncharacteristic specimen. F. 26 is reduced from Mr. Hanley's type specimen.

6. FILAMENTOSA, f. 6, 7, 8, 9, *Martini*.—Testa anguste fusiformis, striis tenuibus et filis albis, aurantiis et nigris varie tæniata; anfractibus plerumque angulatis ad angulum nodosis, nodis frequenter fusco maculatis; spira producta,

acuminata; canali elongato, angusto truncato.—Our figure 7 corresponds fairly with Lamarek's description of his *F. ferruginea*, which, with Kiener, I regard as a variety of this species with more rounded and less tuberculated whorls.

7. TRAPEZIUM, f. 21, 22, 33, *Linnaeus*.—Testa solida, quadrilateralis, epidermide fusca induta, spiraliter rubro-lineata, supra medium angulato et tuberculis magnis armato, anfractu ultimo infra conspicue vel inconspicue tuberculato; spira breviuscula, canali lato, truncato; apertura magna, intus striata et rubro lineata, margine denticulato.—The extreme form fig. 21 and the rather cylindrical shell f. 23, have been separated as sub-species by Jonas under the names of *ponderosa* and *Audouinii*.

8. HEYNEMANI, f. 11, *Dunker*.—Testa fusco-aurantia, lævis, subpyrulata; spira brevi, anfractibus prope suturam angulatis, ad angulum tuberculis oblongo-rotundis armatis, supra angulum declivibus; apertura pyriformi, alba leviter purpurea suffusa; anfractu ultimo obscurissime bilirato.—A very characteristic Cape shell, of which the only specimens I have seen are much worn, and have lost the purple tints from which the species may have been named.

9. LIGNARIA, f. 18, *Linnaeus*.—Testa angusta, recta turrita fusiformis, subviride fulva, fusco fasciata lævis; spira producta, anfractibus angulatis, ad angulum acute tuberculatis, canali brevi, recto, truncato.—This well-known Mediterranean species is the *F. Tarentina* of Lamarek.

10. AURANTIACA, f. 20, *Lamarck*.—Testa ventricosa, subquadrangulata, aurantio rubroque variegata, spiraliter quadriseriatim tuberculata, duplicatim sulcata, spira breviuscula, anfractibus angulatis, ad angulum tuberculis magnis munitis; apertura pyriformi, intus striata, margine denticulato, canali brevi lato.—Commonly called the '*Persian vest*' according to Lamarek, without reference to its locality, which is unknown.

11. PERSICA, f. 19, *Reeve*.—Testa quam *F. aurantiaca* latior, sulcis magis distantibus, tuberculis majoribus, interstitiis maculis nigrescentibus ornatis.—A much broader and heavier shell than *F. aurantiaca*, with more distant flattened grooves, and larger tubercles.

12. GRANOSA, f. 25, *Broderip*.—Testa subpyriformis lævis, spiraliter sulcata, epidermide granulato induta; spira brevi lato, anfractibus angulatis, ad angulum tuberculis trigonis magnis acutis armata; apice papilloso; apertura pyriformi, salmonea, labio interno lævi lato, labio externo denticulato, canali producto acuminato.—The granular character of the epidermis is not conspicuous except in advanced stages of growth.

13. SALMO, f. 26, *Deshayes*.—Testa lævis, castanea spiraliter leviter sulcata, pyriformis, superne bulbiformis, ventricosa, epidermide læviusculo induta, spira brevi, apice papilloso, anfractibus angulatis, tuberculatis; tuberculis anfractuum superiorum rotundis, vix prominentibus, versus ultimum crescentibus, frequenter magnis acuminatis canali subtortuo, acuminato; apertura pyriformi, salmonea, labio interno lævi tumido, labio externo denticulato.—The epidermis is smooth, and a sort of obliquity appears to be characteristic of the species. The tubercles are more rounded and less prominent than those of the preceding in the upper whorls, but enlarge towards the last.

14. THERSITES, f. 15, *Reeve*.—Testa alba, spiraliter striata, gracile fusiformis; spira breviuscula; anfractibus brevibus, superioribus angustis, antepenultimo et penultimo angulatis et tuberculis magnis armatis, ultimo subquadrato, tuberculis costæformibus paucis magnis munito; canali elongato, tortuo.—A white striated shell, with a rather square, short body-whorl, having large tubercles lengthened into thick ribs, and a long narrow tortuous canal.

15. TULIPA, f. 12, 13, 14.—Testa ovato-fusiformis, lævis vel leviter striata, griseo-fulvescens, maculis castaneis irregularibus triseriatim fasciata, vel aurantia rufo variegata, anfractibus ad suturam plus minusve sulcatis et crenulatis, spiraliter nigro aut fusco lineatis; apertura pyriformi, margine crenato et lineato.—*F. Schepmacheri* is the name of the variety fig. 12, which is a little more generally ribbed, and has rather less ventricose whorls. The name 'canaliculata' may have been given to some specimen with an unusually channelled suture.

16. DISTANS, f. 16, 17, *Lamarck*.—Testa quam *F. tulipa* brevior, magis ovata, magis lævis, lineis nigrescentibus

distantibus cincta; anfractibus ad suturam haud crenulatis, haud sulcatis.—The striæ, which in the preceding species appear in the upper and lower parts of the shell, although seldom all over, are quite absent in this species. This, together with the distant spiral lines and the absence of crenulation or groove at the suture will sufficiently distinguish between the two.

17. PORPHYROSTOMA, f. 27, 28, *Adams* and *Reeve*.—Testa clavata, albida, pallida, superne ventricosa; spira brevi, apice papilloso; anfractibus brevibus; prope suturam angulatis, ad angulum regulariter tuberculatis, supra angulum declivibus; canali elongato retrorsim elevato.—This shell seems to bear the same relation to other species of the genus *Fasciolaria* as *Murex Motacilla* does to *Murices* generally.

ALPHABETICAL INDEX TO FASCIOLARIA.

- antoni*, Recl. = *coronata*,
 sp. 3.
audouinii, Jonas = *trape-*
zium, sp. 7.
aurantiaca, Sowb. by error,
princeps, sp. 5.
aurantiaca, 10, Lamk. f. 20.
badia, Krauss. LUGUBRIS,
 sp. 5.
canaliculatus, Val. tulipa, sp.
 15.
clava, Jonas = *persica*, sp.
 11.
coronata, 3, Lamk. f. 3.
crocata, Phil. = *fusiformis*,
 sp. 4.
distans, 16, Lamk. f. 16, 17.
ferruginea, Lamk. = *fila-*
mentosa, sp. 6.
filamentosa, 6, Martini, f.
 6-9.
fischeriana, Kuster = *gigan-*
tea, sp. 1.
fusiformis, 4, Val. f. 4.
gigantea, 1, Kiener, f. 1, 2,
 29, 30.
granosa, 12, Brod. & Sowb.
 f. 25.
- henymani*, 8, Dunker. f. 11.
lignaria, 9, Linn. f. 18.
lugubris, 5, Ad. & Rve. f.
 10, 24.
papillosa, Sowb. = *gigan-*
tea, sp. 1.
persica, 11, Rve. f. 19.
ponderosa, Jonas = *trape-*
zium, sp. 7.
porphyrostoma, 17, Ad. &
 Rve. p. 27, 28.
princeps, 2, Sowb. f. 5.
purpurea, Jonas = Heyne-
 mani.
rugosa, Val. = tulipa.
salmo, 13, Desh. f. 26.
schepmackeri, Dunk. = tu-
 lipa, sp. 15.
tarentina, Lamk. *lignaria*,
 sp. 9.
thersites, 14, Rve. f. 15.
trapezium, 7, Linn. f. 21,
 22, 23.
tulipa, 15, Linn. f. 12-14.
valenciennesi, Kiener = Sal-
 mo, sp. 13.

MONOGRAPH OF THE GENUS

HALIOTIS.

Padollus et *Teinotis* inclusis.

HALIOTIS, *Linnaeus*.—Testa oblique auriformis, plerumque ovata, interdum orbicularis, raro attenuata, versus marginem sinistrum spiraliter angulata, foraminibus plerumque breviter tubiformibus uno serie sequentibus, prioribus tectis, ultimis quatuor ad duodecenis apertis perforata; intus margaritacea, extus plerumque spiraliter et interdum concentrice sculpta, varie picta; spira brevissima, aperta amplissima, labio interno arcuato, planato, margaritaceo.—The ear-shaped spiral shell, with a series of perforations on the left side, is too familiar to need description, except as a matter of form. Unlike many other genera, the genus *Haliotis* is perfectly isolated in its characters, so that it cannot be confused with any others. The only shells similar in form are found in such genera as *Stomatia*, *Sigaretus*, &c., and these have not the series of perforations on the left side so characteristic of *Haliotis*. With regard, however, to the distinction of species, there are few reliable characters to be depended on. For instance, the number of perforations successively left open in the later stages of growth is no criterion, except in one or two possible cases; and within the supposed limits of a species there are often nearly as many and as great variations in sculpture, form, convexity, &c., as between it and the nearest allied species. The genus *Padollus* has been needlessly separated on account of a spiral swelling without, corresponding to a channel within, about half-way between the suture and the ridge of perforations; and *Teinotis* on account of its very attenuated form.

Species.

1. GIGANTEA, f. 44, 45, 50, *Chemnitz*.—Testa magna ovata convexa oblique undulatim rugata, spiraliter liris subdistantibus subplanatis interstitiis planatis sculpta; area marginali lata, corrugata, nonnunquam costa tuberculata magna divisa; disco externo rubescenti, vel obscure fusco; foraminibus magnis, erectis, tubulosis; labio interno concavo arcuato, medio expanso.—The very large tubes surrounding the holes is the chief characteristic in this large Japanese species. There are three varieties as shewn in our figures. At first these appeared sufficiently marked to require specific distinction, but on examining a number of large specimens in the British Museum and Taylorian collections, I found the characters on which I should have relied to be interchangeable. Fig. 45 is from a small specimen.

2. ECHINATA, f. 124, *Sowerby*.—Testa parva ovata depressa fusca, concentrice rugata, liris validis spiralibus super rugas squamoso-spinosas sculpta, area marginali costis tribus spiniferis lirata et rugata; spira prominula, acuminata, tuberculis foraminiferis tubiformibus extantibus.—Small, oval, depressed, dark brown, concentrically wrinkled, sculptured with strong spiral ridges forming squamose spines on the wrinkles, marginal area with three rows of spines. Quite possibly the unworn young state of *H. gigantea*, but whether as a state or species, it is unique in Mr. Hanley's collection.

3. SIEBOLDII, f. 72, *Reeve*.—Testa concava, obliqua, rubra, antice attenuata spiraliter planato-lirata; spira terminali; labio interno obliquo, area marginali angusta.—I am strongly inclined to believe this one-sided shell to be an abortion of *H. gigantea*.

4. RUFESCENS, f. 35, *Swainson*.—Testa magna, crassa, ovata, spiraliter rugose costata, oblique tuberculis crassis magnis undata, rubra; intus vivide purpureo viridique iridescenti; medio laminis fuscis ornata; foraminibus magnis, paucis tumidis.—A very thick, large, rugose shell; the irregular spiral ribs being crossed with large tumid, oblique swellings. Mr. Hanley's magnificent specimen here figured as reduced, is of a uniform coral red outside, while the inside iridescence exhibits all the colours in great strength,

ornamented with a sort of dark-margined lamination, green and purple predominating. *H. ponderosa* of C. B. Adams is probably a more than ordinarily thick and convex variety of this species.

5. DISCUS, p. 32, *Reeve*.—Testa ovata, oblonga, tenuis lævis, obscure fusca, leviter spiraliter sulcata, oblique rugis elongatis undata, angulo dorsali acuta, area marginali perpendiculariter profunda tuberculis foraminiferis prominentibus subdistantibus, quaternis perviis; spira prominenti subterminali.—A larger range of specimens would probably connect this with *H. Kamschatkana*.

6. KAMSCHATKANA, f. 33, 34, *Jonas*.—Testa ovata, tumida, fusca, versus spiram coloribus numerosis variegata, spiraliter leviter sulcata, oblique rugis magnis tuberosis undulata versus aream spiralem tumida, area marginali supra medium concava, tumida, tuberculata; tuberculis foraminiferis prominentibus, subdistantibus, paucis.—It is chiefly in a young state that the shell exhibits a mottling of various colours, after which the colours tone down to brown or dull red. There is a considerable swelling in the area from the suture and the middle, and the shells are less ovate-oblong than those of *discus*, although intermediate specimens may perhaps lead to the union of the apparent two species.

7. CORRUGATA, f. 26, pl. iv. *Gray*.—Testa ovata, crassa, valde convexa, spiraliter nodoso-lirata, nodulis irregularibus rugis obliquis irregulares efformantibus; spira decumbenti, foraminibus magnis, area marginali tuberculifera; viridi fuscoque fasciatim picta, intus vivide maculis purpureo-iridescentibus ornata foraminibus magnis, paucis, tumidis.—A thick, convex shell, with spiral knobbed ridges, crossed obliquely by tubercular wrinkles. The interior pearl is brilliantly iridescent with purple and green, and the muscular impression is curiously inlaid with dark semicircular lines; tubercular perforations few, large, tumid.

8. MARIÆ, f. 40, 41, *Gray*.—Testa ætate juniori complanata subrugata spiraliter latissime costata, deinde convexa, tuberculata, ad marginem externum lobata, tuberculis foraminiferis magnis.—The identity of *H. mariæ* of Gray with the *dentata* of Jonas must be taken partly on the authority of Mr. Reeve, who compared his shell with drawings sent by Mr. Jonas. In the specimen which I figure (41), the flatness of the early growth is very remarkable, and so is the tran-

sition of character to be seen in the after-growth. A valuable specimen in the possession of Mr. Hanley illustrates an intermediate stage of growth. On the whole, the evidence of identity is not absolute.

9. IRIS, f. 24, 25, *Gmelin*.—Testa ovalis oblonga fusco-viridis, rugis oblique radiantibus et liris spiralibus, interstitiis concavis sculpta, spira parva, subterminali, apertura vivide cæruleo, purpureo, viridique iridescenti, labio interno lato, planato.—The obliquely radiating wrinkles and decussating striæ tend to form symmetrically arranged pits between them. In the brilliant iridescence of the interior, green and purple prevail.

10. VIRGINEA, f. 92, *Chemnitz*.—Testa convexa, ovato-oblonga, fusco-viridis, albo fulgurata, spiraliter granoso-lirata, oblique plicata, spira subterminali, foraminibus, vix exsertis, area marginali declivi; apertura viride iridescenti, tenuiter rugata.—This shell is unmistakably figured in *Chemnitz* as *H. virginea*. Dunker has seen this and figured it beautifully. Reeve applied the name to a shell which is plainly the true *marmorata* of Linnæus, and followed Philippi in giving the name of *H. Gibba* to the present species. It is an oval shell, having a sort of 'quilted' texture, and a beautiful green iridescence within.

11. GRAYANA, f. 87, 111, *Sowerby*.—Testa ovata, convexiuscula subdepressa, spiraliter depresso-costata, subviride fulva, maculis postice marginatis variegata, labio externo circa spiram expanso et extenso; spira subterminali.—The supposed identification of this species as *H. marmorata* of Linnæus by the late Dr. Gray must be regarded as a mistake. The characters given do not identify it, and there are no specimens of it in the Linnæan collection, whereas the early conchological writers, including Gmelin, refer to Martini's fig. 139, t. 14, v. 1, as illustrating the Linnæan species, and that figure corresponds with specimens in the Linnæan cabinet. *H. Grayana* is a finely marked shell with spiral grooves, rather flat, and remarkable for the manner in which the outer lip coils round the spire at the suture.

12. SPLENDENS, f. 37, 38, 105, 106, *Reeve*.—Testa magna, fusca vel fusco-viridis ovalis, depressa, solida, concentricè tenuiter striata, spiraliter plano-lirata, liris latis, tenuissime crenatis, interstitiis angustis planatis; spira subterminali, sub-

decumbenti; foraminibus tubiformibus, mediocris; apertura splendide viridi, purpureo luteoque iridescenti, labio interno crasso.—The well-known large, oval, flat-ridged species with a green and purple iridescence is easy to distinguish from other species. I have no doubt that Mr. Reeve's *H. planilirata* was described from a specimen of the green variety in a young state, of which the exact counterpart can be traced towards the apex of some full-grown specimens. Fig. 105, with somewhat more robust sculpture, and white spots in the centre, is from specimens in the British Museum. *H. intertexta* of Lischke I believe to be a variety half grown.

13. RUGOSO-PLICATA, f. 9, 10, 53, *Chemnitz*.—Testa ovalis, oblonga, valde concava, arcuata, pallide fulva nonnunquam radiatim variegata, spiraliter tenuiter nodoso-lirata, oblique radiatim regulariter rugata, foraminibus numerosis prominentibus; area marginali tricostata; apertura argentea, eleganter rugata.—Of an oval, arched and convex form, beautifully wrinkled with spiral and radiating ridges crossing each other obliquely. This sculpture is inversely shewn in the interior. I was about to name Mr. Hanley's little shell (fig. 53) as new, but found it to be a young specimen of the present species.

14. CRACHERODII, f. 13, *Leach*.—Testa dense viridis nigrescens lævis ovata, moderate convexa, crassiuscula, foraminibus distantibus, depressis; intus argentea.—A large dark, green, smooth, oval shell, with few distant holes.

15. CALIFORNIENSIS, f. 14, *Swainson*.—Testa *H. Cracherodii* similis sed magis convexa, foraminibus multo magis numerosis et approximatis.—Like *T. Cracherodii*, but a much more rounded and convex shell, with much more numerous and approximate holes.

16. GLABRA, f. 1, 2, *Chemnitz*.—Testa ovalis, depressa, viridi-lutea, maculis fulvis acute angulatis variegata, lævigata plus minusve leviter striata foraminibus parvis, spira fere immersa subterminali; intus argentea, labio interno angusto, planulato.—The angular brown spots which variegate this smooth oval shell are sometimes drawn out into elongated points.

NOTE.—*Ziczac*, Reeve, described as being more deeply striated than this species, cannot be distinguished in a number

of specimens, which vary in striation as well as in markings from each other.

17. TAYLORIANA, f. 91, *Reeve*.—Testa oblongo-ovalis, sublævigata, postice subattenuata, fusco viridis, maculis fuscis nigro-marginatis picta, spiraliter leviter lirata intus argentea, labio externo circa spiram extenso.—Of an elongate oval form, with a generally smooth appearance, only modified by slightly raised spiral ridges. The dark-edged spots upon a blended brown and green ground form a strong character in good specimens.

18. MARMORATA, f. 88, 89, *Linnæus*.—Testa ovalis, subconca, striis spiralibus, varie duplicatis et alternatis cum striis tenuibus decussata, medio vix depressa, rubra, maculis albis medianis vel lateralibus variegata; foraminibus parvis, vix elevatis, area marginali lata subequaliter striata; apertura antice subtruncata, labio interno lato, planulato.—The late Mr. Reeve figures the variety, fig. 89, as *virginea* of Chemnitz, evidently by error. A somewhat smaller and more rosy specimen is the type of his *H. rosacea*. Dunker figures the variety fig. 88 as *tuberculata* var. *striata* of Linnæus. To me it seems plain that the species now given is the true *marmoratus* of Linnæus, as figured by Martini and accepted by Gmelin and Dillwyn. It is the *decussata* of Philippi.

19. GRUNERI, f. 57, *Philippi*.—Testa ovalis subcomplanata, concentrice leviter undulatim plicata, spiraliter liris elevatis, crebris minutissime squamosis sculpta; fusca rufescens, maculis magnis vividis variegata; tuberculis foraminiferis parviusculis, 9 perviis; intus argentea.—The very finely scaled ridges give a softened raspiness of texture to this beautiful shell, which is brown, varied with spots of darker colour.

20. TUBERCULATA, f. 66, 67, 102, 115, *Linnæus*.—Testa ovata convexiuscula, tenuiter spiraliter striata, fusco, rubro, vel viridi angulatim variegata; radiatim plus minusve irregulariter plicata; area marginali post angulum foraminiferum excavata, tum versus marginem tumida, rugose lirata.—Generally of the usual oval form, with a tendency to shew undulating plaits; striæ variable, seldom raised, in couplets or equal; marginal area hollow under the tubercular ridge, then turned and coarsely ribbed. The elongated specimen, f. 102, belong-

ing to Mr. Hanley, has occasioned some doubt, but the characters are not sufficiently decided for separation. In this species the young shells are generally rather narrower than when more mature. Fig. 115 represents a very ordinary appearance of the younger stage, and it seems probable that the *H. striata* of Linnæus is from a similar young specimen, of which there are several in his collection.

21. BISTRIATA, f. 99, 100, *Gmel.*—Testa *H. tuberculata* similis, sed liris validis rugosis elevatis, decussatis, plerumque alternatis sculpta.—Like *T. tuberculata*, but having thick raised ribs roughened with cross striæ, unequal and sometimes alternate. It is difficult to find a definite line of demarcation between this species and the more coarsely sculptured varieties of the preceding.

22. ALTERNATA, f. 51, *Sowerby.*—Testa ovata, concava subviridis, maculis subquadratis super costas picta, costis undulatis latis, alternis minoribus sculpta; spira elevatiuscula, lata, apertura argentea labio interno lato complanato.—Distinguished by broad flattened, alternating ridges upon which are painted occasional brown spots. The specimen here figured is slightly undulated, but some occur in the British Museum in which the undulations are raised into thick wrinkles.

23. AQUATILIS, f. 97, *Reeve.*—Testa *H. tuberculata* similis, striis spiralibus fere evanidis; pallide fulva, maculis magnis fusco-viridis angulatim undatis picta, versus marginem liris sublaminatis concentricis rugata.—A shell in which the striæ are nearly obsolete, ranging between *H. tuberculata* and *H. laminata*, having the form of one and a few laminated ridges like those of the other. It may perhaps be only a variety of the former, which sometimes shews similar ridges.

24. SEPICULATA, f. 60, *Reeve.*—Testa ovata subconvexa, radiatim irregulariter plicata, spiraliter costellis erectis acute rugosis lirata, fusco subviride variegata. Formed like *H. tuberculata*, but ridged with close-set elevated and sharply roughened riblets, which are much more close and equal than those of *H. bistriata*.

25. PERTUSA, f. 58, *Reeve.*—Testa ovata oblonga sublævigata, spiraliter punctatim incisa, fusca, versus marginem externum laminatim plicata; foraminibus subconspicuis.—

The characters of this species are not very decided; the pricks in the grooves being difficult to see without a lens. They are caused, as in other species, by fine crossing striae which are obsolete on the flat surface of the ridges.

26. MULTIPERFORATA, f. 59, *Reeve*.—Testa ovato-suboblonga, antice attenuata, fusco viridique variegata, subrugosa, spira parva, cuprea; foraminibus numerosis, rotundis.—I doubt much whether this species is specifically distinct from *H. sanguinea*, but it does not shew the same width and inflation in the spiral or upper portion, nor the same degree of contraction in the middle, and towards the end.

27. SANGUINEA, f. 93, 94, *Hanley*.—Testa ovato-oblonga, postice subrotunda, tumida, antice subattenuata medio contracta, fusca nigricanti, oblique rugata; foraminibus rotundis, approximatis; area marginali spiraliter lirata; apertura argentea, intus ad spiram sanguineo tincta.—Swollen towards the spine, contracted in the middle and attenuated towards the anterior extremity, darkly coloured and wrinkled. The apex outside has a coppery tint and inside a streak of blood-colour. It is difficult to distinguish very young specimens of this from those of *H. Mida*, but the former shew a minute spiral beading, and the latter are smooth.

28. RUGOSA, f. 98, *Reeve*.—Testa fusca, irregulariter ovata, concentrice subundata, spiraliter valide lirata, liris inæqualibus, planatis, carina tuberculifera elevata foraminibus majusculis; area marginali rugose lirata.—A coarsely ribbed brown shell, with the tuberculiferous ridge prominent and the holes rather large.

29. LAMELLOSA, f. 27, 29, 30, *Lamarck*.—Testa ovato-oblonga, spiraliter conspicue lirata, concentrice oblique plicata, plicis elevatis, undatis, subramosis, angulo tuberculifero elevato acuto, area dorsali excavata, medio costata.—The variety f. 29 *Japonica*, *Reeve*, differs no more from the typical ideal than other varieties differ among themselves.

30. RETICULATA, f. 76, 96, 122, 126, *Reeve*.—Testa ovato-oblonga depresso-subcomplanata, spiraliter striata, obscure fusca, maculis subtrigonis fuscis et parvis albidis reticulata, angulo submarginali elevato, acuto; prope marginem externum nonnunquam laminatim rugata.—I can see no reasonable ground for separating *Reeve's incisa*, f. 76, or the var. f.

96, with a few laminated wrinkles, from this species. The angular markings, cut up into a sort of reticulation and intermingled in some varieties with white specks, constitute the peculiarity of the species, which is flattened and very angular at the dorsal ridge.

31. JANUS, f. 81, *Reeve*.—Testa *H. reticulata* similis, spiraliter striata, medio et versus suturam aurantio-subviridis, disco versus angulum dorsalem late albo fasciato, maculis magnis purpureo-fuscis picto.—It is with some doubt that I treat this species as distinct from the preceding, but the dorsal disc is spirally divided into two parts as to colour, namely, the half nearest the spire dull orange, and that near the ridge white with dark spots.

32. SPECIOSA, f. 107, 108 (?), 123, *Reeve*.—Testa oblongo-ovata planulata, medio depressa, spiraliter sublævigatim striata, fulva, maculis maximis rubris nigro-marginatis picta, margine tuberculifero valde angulato; foraminibus parviusculis, approximatis.—Oblong-ovate, rather flat, depressed in the middle, variegated with red or orange patches of colour, the patches being bordered with dark lines. The perforated tubercles are rather small. It is not easy to fix the bounds of this species, but it is probable that the very similarly formed shell taken haphazard by Mr. Reeve for *H. striata*, Linn. f. (108), belongs to it, although the style of variegation is unlike.

33. COCCINEA, f. 64, 95, 120, *Reeve*.—Testa oblongo-subovata, ætate juniore rugosa, vivide coccineo variegata, deinde spiraliter subrugose lirata, concentrice rude plicata interstitiis tenuissime striatis, area marginali spiraliter lirata.—As in the case of many other species when the early character differs from the after-development, the change takes place at various stages. Thus we have a shell, say an inch and three-quarters long, retaining the early crumpled scarlet-mottled character, and another large brown shell sculptured with flattened ridges, and only half an inch of the bright variegated red towards the spire. The specimen figured as 120 is from the late Mr. Taylor's collection, and is peculiar in the duplicate character of some of the ridges and the widening of the shell towards the anterior termination.

34. ZELANDICA, f. 90, *Reeve*.—Testa ovato-oblonga, fulva, maculis trigonis fuscis variegata, tenuiter liratum inæqualiter

sculpta.—This shell does not differ very greatly from some variations of *H. nebulata*. It has a more elongated form, and a different character of marking.

35. NEBULATA, f. 8, 56, *Reeve*.—Testa oblongo-ovata viridi fuscoque nebulata, convexa, lævigata, inter liras planatas inciso-striata; spira angusta, subterminali, exserta; area marginali rotundata acute lirata.—Oblong-ovate, green and brown, clouded with generally undefined spots, sculptured with incised striæ defining flat ridges. Spire small, prominent; holes small. *H. revelata*, of Deshayes (56) found on the shores of the Mauritius, is plainly identical with this.

36. ASININA, f. 3, 4, *Linnaeus*.—Testa elongata, angusta, arcuata, lævigata, utrinque tumida, medio depressa, postice acuminata, antice subtruncata, versus spiram distanter lirata, glauca, viridi vel fusco angulatim variegata; area marginali leviter distanter lirata; intus argentea, labio externo medio sinuoso; labio interno tenui, erecto, foraminibus majusculis; spira parva, terminali.—This long and elegantly arched species is well known, and the propriety of its name acknowledged. The side nearest the suture is swelled in its whole length, the middle depressed, and the other side rounded. The apex is nearly terminal and acuminated, and the anterior end is truncated.

37. HANLEYANA, f. 28, *Sowerby*.—Testa rubro variegata, intus argentea, rugosa, anguste subtrapezoidea, concentrice rugis crassis elevatis undulatis laminata, spiraliter elevatim lirata, liris inæqualibus, subalternatis; spira acuta, valde elevata, anfractibus angulatis; area marginali tuberculatim costata.—Laminated more thickly and roughly than *H. lamellosa*, and chiefly remarkable for its exserted and elevated spire, in which respect it resembles *H. stomatiæformis*. I am indebted for this beautiful species to Mr. Sylvanus Hanley.

38. STOMATIÆFORMIS, f. 22, 23, *Reeve*.—Testa oblique oblonga subtrapezoidea, spiraliter inciso-striata, versus spiram tumida, concentrice liris elevatis rugata; medio depressa ad angulum acuta, tuberculis parvis; pallide fulva, maculis angulatis aurantiacis variegata; spira elevata exserta, anfractibus angulatis; apertura antice subquadrata.—This shell, like *H. Hanleyana* and *H. elevata*, has the spire much raised, so as to resemble *Stomatia phymotis*. The variety

figured in our last plate represents *H. neglecta* of Philippi, and is undoubtedly identical with our present species.

39. *ELEVATA*, f. 116, 117, *Sowerby*.—Testa oblique subtrapezoidea, stomatiæformis, subviridis, viridi versus angulum late fasciata, spiraliter elevatim lirata, liris squamatis; spira elevata cuprea, anfractibus obtuse angulatis.—Having the same stomatia-like form as the preceding, but with strong scaly ridges, and the whorls of the elevated spire more sloped.

40. *SQUAMATA*, f. 62, 68, 118, *Reeve*.—Testa ovato-oblonga angusta arcuata, spiraliter rude et inæqualiter lirata, liris squamosis; plerumque rubro et fusco variegata.—Our fig. 68 doubtlessly represents the most characteristic, because the most scaly, form of this species. Fig. 62 is less roughly squamose. It is a beautifully mottled shell belonging to Mr. Hanley. It is difficult to know where *H. squamata* ends and where the next species, *H. funebris*, begins, but I think fig. 70, representing a shell with smooth ridges, fairly meets the description of the latter.

41. *FUNEBRIS*, f. 70, *Reeve*.—Testa *H. squamata* similis sed magis ovata, vix arcuata, liris vix squamatis.—The numerous specimens we have examined of the preceding species vary very much in the scaliness of the ridges; but the present is almost too smooth to be called scaly.

42. *SQUAMOSA*, f. 52, *Gray*.—Testa ovata, depressa rubro fuscoque variegata, liris magnis spiralibus squamatis, nodosis, interstitiis profundis sculpta; intus rugata; labio interno angustiusculo; margine externo denticulato; spira subimmersa, foraminibus prominentibus subdistantibus.—Very strongly sculptured with prominent squamose and tuberculated ridges, and deep furrows between.

43. *DIVERSICOLOR*, f. 69, *Reeve*.—Testa oblongo-ovalis, convexa sublævigatas, tenuiter lirata, coloribus variis viride variegata; spira fere terminali.—The sculpture is much more fine and depressed than in *H. funebris*, and the colours are brilliantly variegated.

44. *ELEGANS*, f. 82, 119, *Koch*.—Testa elongata, arcuata, antice attenuata, straminea, obscure aurantio variegata, spiraliter costata, costis elevatis angustis subsquamatis, interstitiis profundis latiusculis, spira parva, terminali, tuberculis foraminiferis distantibus area marginali angusta

profunde lirata; apertura elongata, margine dentato, ad terminum truncata.—The nearest in form to *H. asininus*, but sculptured with narrow but deep and wall-like sharp-edged ridges.

45. JACNENSIS, f. 48, *Reeve*.—Testa oblonga, subaurantia, profunde spiraliter lirata; spira parva, tuberculis foraminiferis prominentibus, area marginali subdivaricatis rugosa.—A curious little oblong species of a dull orange colour, with very deeply cut ridges.

46. VARIA, f. 5, 6, 7, 11, 12, 61, *Linnaeus*.—Testa ovatoconvexa spiraliter striata coloribus variis frequenter radiatim picta, liris subdistantibus inæqualibus, hinc illic nodosis rugata; spira latiuscula exserta, area versus angulum foraminiferum lævigata; foraminibus prominulis.—Varying very much in form and colours, but agreeing in the general character of the sculpture, which consists in an alternating or irregular mixture of small spiral striæ, with some larger, having knobs at uncertain distances. In the variety named *semistriata*, *Reeve*, f. 11, on half the disc nearest the perforations the striæ are obsolete. In Mr. Hanley's beautiful specimen (f. 12) this is partly the case through a portion of the semicircle.

47. PUSTULATA, f. 112, *Reeve*.—Testa *H. varicæ* similis sed versus spiram latior, subcomplanata antice attenuata, nodis striisque minoribus.—The sculpture is finer, the spiral region broader and flatter, and the anterior part narrower than in *H. varia*. These differences are, however, of questionable specific value,

48. ASTRICTA, f. 83, *Reeve*.—Testa *H. varicæ* similis, magis oblonga, subconcentrice rugata, spiraliter tenuiter striata, vix nodosa, pallida, viridi fuscoque subfasciatim variegata.—Narrower than *T. varia*, *pustulata*, and with fine sharp striæ intersecting wrinkles and deep lines of growth. The rugose sculpture is finer and closer, and wants the pustules of *T. varia*.

49. CONCINNA, f. 46, 54, *Reeve*.—Testa complanata, subovata, postice lata, antice subattenuata, lactea, rubro viridique variegata, spiraliter lirata, liris distantibus elevatis, undulatis nodosis, interstitiis irregularibus tenuibus; foraminibus prominulis, parviusculis; apice fere immerso.—The sculpture

is somewhat finer, but quite as irregular as in *H. varia*. The flatness and breadth of the spire and comparative attenuation of the anterior give a different appearance to the shell. The prevalence of bright scarlet in the markings is noticeable. Mr. Reeve named the species from a very young and uncharacteristic specimen.

50. VENUSTA, f. 55, *Adams and Reeve*.—Testa planata, angusta, *H. concinna* similis, nodis magis regularibus; tuberculis foraminiferis magis exsertis et distantibus, tubuliformibus; labio interno lato, planato; area marginali excavata ad marginem carinata; disco albo, rubro vel fusco variegato.—Resembling *H. concinna*, with the nodules more regular and the intermediate striæ wanting. The aperture is contracted by the breadth of the flattened margin. The perforated tubercles are prominent, tubular, and few.

51. CRUENTA, f. 63, 101, *Reeve*.—Testa planato-subrotunda, postice lata, antice subattenuata, spiraliter striata, fulva, maculis fuscis vel sanguineis variegata, intus argentea, labio interno angusto.—One of the broad flat-headed species, spirally striated, fulvous, angularly flashed with brownish red, generally attenuated towards the anterior end. Some shells dredged by Mr. Macandrew at Suez seem to belong to this species.

52. COCO-RADIATA, 75, 79, 101, *Reeve*.—Testa suborbiculari-ovata, planiuscula, fulva, strigis viride coccineis radiatim fulgurata, tenuiter spiraliter striata, frequenter antice subattenuata.—The broad radiating flashes of crimson give a peculiar character to this shell. *H. navosa* often has similar rays but is rounder, more convex and scabrous. The younger shells of the two species are very similar.

53. GEMMA, f. 109, 123, *Reeve*.—Testa orbicularis subcomplanata, spiraliter liris undulatis minutissime squamosis, ætate juniore tuberculatis sculpta; fulva, maculis viridis coccineis fuscisque variegata; tuberculis foraminiferis subtubuliformibus.—Rather flatly orbicular, spirally sculptured with wavy ridges very minutely squamose. The type is a very small shell with minute tubercles, but in more advanced specimens the wrinkles and fine squamose ridges are seen, and in this state it is described as *H. Dorkniama* by Dunker. It is prettily mottled with red, green, and dark brown.

54. *PLANATA*, f. 74, *Carpenter*.—Testa orbicularis, subovata, complanata, minute squamoso-lirata, margine circa spiram expanso; spira fere immersa, lata; pallide viridis, nigro variegata, labio interno angusto, planatissimo.—This is the flattest of all the species; it has a broad, immersed spire, and is sculptured with fine, close, scaly ridges.

55. *RUBIGINOSA*, f. 71, *Reeve*.—Testa ovato-subquadrata, convexa, concentrice regulariter undatim rugata, spiraliter valide regulariter lirata, fulva, rubro late bifasciata, ad spiram variegata: tuberculis foraminiferis parviusculis, tuberosis, prominentibus.—The regular concentric wrinkles are crossed by deeply cut ridges, producing a roughly symmetrical effect.

56. *EXCAVATA*, f. 21, 26, *Lamarck*.—Testa orbicularis valide convexa, spiraliter lirata, liris granosis alternatis; prope suturam subconcentrice rugata, pallide fulva radii obliquis viridis fusco marginatis picta; area marginali granoso-lirata, transverse fasciis viridis fusco marginatis picta; spira elevata, subcentrali, rotunda; apertura argentea, labio interno angusto concavo.—Rounded and very convex, with wrinkles near the suture and spiral granulated ridges alternating in size. The inner lip is narrow and slopes down into the concavity of the interior. External colour, radiating flashes of green, edged with brown on a pale buff ground.

57. *ALBICANS*, f. 20, *Quoy*.—Testa ovato-suborbicularis, sublævigata, convexa, spiraliter tenuiter lirata, fulva, rufo radiata; spira lata, rotunda, anfractibus rotundatis; foraminibus parvis; apertura pallide argentea, lævi; labio interno arcuato, subconcavo.—A comparatively smooth shell of a buff colour with obliquely radiating bands of reddish brown. It is of a rounded oval, very convex form, and the holes are small.

58. *CUNNINGHAMII*, p. 36, *Gray*.—Testa magna subrotunda, fulva subradiatim fusco rubescenti variegata, spiraliter tenuiter striata, disco mediano subcomplanato, undulato; angulo dorsali prominenti, area marginali subexcavata angusta; spira lata, subprominenti; apertura argentea.—Large, rather round fulvous, variegated with large patches of brown, finely spirally striated; middle disc rather flattened, spire broad, rather raised. This attains a very large size.

59. NÆVOFA, f. 73, 39, *Martyn*.—Testa suborbicularis, rubra, nonnunquam radiis obliquis variegata, intus argentea, spiraliter minute scabroso-striata, rugis oblique radiatis undata; tuberculis foraminiferis prominentibus, octonis perviis; spira lata rotunda.—Some varieties of this rounded scabrous shell are beautifully varied with rays of scarlet or brown, as in the small shell f. 75. Carefully comparing Reeve's *H. clathrata* with the spiral portion of this species, I am convinced that the former represents the early structure of the latter. I believe the *sulcosa* of Philippi to be a rather rounded and convex form of the same species.

60. ROEI, f. 77, 78, *Gray*.—Testa ovato-orbicularis, liris validis squamatis interstitiis profundis sculpta; rubra, vel fusca; spira lata rotunda subcentrali prominenti; area marginali rotunda.—Ovately orbicular, with large scaly spiral ridges. The spire is rounded and subcentral. *H. scabricostata*, Menke, is the same species.

61. MIDÆ, f. 31, 125, *Linnaeus*.—Testa ætate juniori lævigata vel tenuissime striata, deinde luteo rufescenti, laminis undulatis oblique subconcentricis, extantibus profunde corrugatis; labio externo circa spiram in laminam marginalem longe extenso.—Very peculiarly wrinkled with waved erect laminæ. The outer margin of the lip is extended round the spire so as to form a marginal plait reaching to the other side. The young shell is finely striated and has a smooth appearance, resembling the young of *H. sanguinea*. The shell figured by Philippi as *H. Capensis*, Dunker, is an undeveloped *H. midæ*.

62. PULCHERRIMA, f. 47, *Martyn*.—Testa rotunda, convexa, rubra vel rubro radiata oblique radiatim liris crenulatis rugata, area marginali erecta, divaricatim et crenulatim lirata, spira rotunda, exserta, subcentrali, foraminibus parvis, tubæformibus.—This beautiful little species is convex and rounded with red all over or red-rayed, wrinkled in oblique crenulated rays.

63. SCUTULUM, f. 80, 104? *Reeve*.—Testa ovato-subrotunda, subcomplanata postice latiuscula, viridi fuscoque obscure variegata, spiraliter liris distantibus subarticulatis sculpta; spira lata, decumbenti.—Rather wide and flat at the spiral end, with spiral articulated distant ridges; of a dark colour, variegated obscurely with green and brown.

If the shell drawn as f. 104 belongs to this species, it is of a somewhat abnormal growth and sculpture.

64. *ANCILE*, f. 65, *Reeve*.—Testa rotunda, convexa, antice paulo attenuata, spiraliter undatim lirata; circa suturam plicata, roseo-cuprea subviridis; foraminibus parvis numerosis; spira elevata, lata, subcentrali, anfractibus rotundatis.—A more convex and delicately sculptured shell than *H. scutellum*.

65. *OVINA*, f. 84, 85, 86, *Chemnitz*.—Testa ovato-rotundata, sublævigata, convexo-depressa radiatim et spiraliter tuberculata, rubro viridi fuscoque picta; spira subcentrali, subangulata, prominenti, foraminibus prominentibus rotundis tubiferis; area marginali versus angulum excavata, tum spiraliter lirata; apertura argentea, labio interno lato planato.—The tubercles in some specimens run into each other, and radiate like the spokes of a wheel. The foraminiferous tubercles are peculiarly tubular and regular. *H. papulata*, as represented in the B. M. collection, appears to be this species in a junior state.

66. *DRINGII*, f. 42, *Reeve*.—Testa orbicularis, subdepressa, flavida, rubro variegata, intus argentea, extus spiraliter seriatim nodosa, tuberculis foraminiferis prominentibus, parvis; spira lata, planulata.—Orbicularly depressed, with nodules spirally arranged; spire broad, foraminiferous tubercles small but prominent; colour yellowish, varied with red spots and flashes. The shell may be only a young growth of some larger species.

67. *RUBICUNDA*, f. 18, 19, *Gray*.—Testa orbicularis depressa, fulva rubro-variegata, medio subconcava, concentricè laminis septiformibus extantibus divisa, versus aream marginalem costa valida spiraliter squamoso-lirata circumvallata; angulo foraminifera costæformi, tuberculis prominentibus, rotundis; area marginali concava, ad marginem in costam tuberculatam elevata; apertura tricanaliculata.—The most remarkable character of this species is the broad solid spiral rib a little past the centre from the suture, with which it is connected by upright laminæ. The foraminiferous ridge and the tubercles upon it form a second rib, and the raised and tubercular outer margin a third, all three represented by channels in the interior.

68. *EMMÆ*, f. 16, *Gray*.—Testa fulva squamosa rubro variegata, *H. rubicundæ* similis, sed laminis extantibus

antice fere obsolete, costa subcentrali haud tantum elevata, area marginali vix costata.—The more striking characters of *H. rubicunda* are present in this species in a smaller degree, but the raised laminae connecting the suture with the subcentral rib are only seen in the earlier whorls of the shell.

69. PARVA, f. 17, *Linnaeus*.—Testa aurantia fusco-viridis aut variegata, ovato-depressa, medio subexcavata, tum costa cincta, margine tuberculifero prominenti, area marginali excavato, margine unicostato.—Of various patterns as to colour, this shell exhibits the peculiar character which connects it with the 'padollus' group; namely the spiral rib in the centre of the disc.

70. LAUTA, f. 15, *Reeve*.—Testa subovata, depressa, antice attenuata, spiraliter striata, medio leviter unicostata; spira latiuscula, decumbenti.—In this species the central rib is but slightly shown.

71. BRAZIERI, f. 43, 114, *Angus*.—Testa rotunda subcomplanata laevi rubra vel rubro variegata, medio tumida vel costa spirali subobscura cincta, foraminibus magnis erectis tubulosis spira rotunda lata subcentrali.—The specimen figured in the zoological proceedings seems, instead of preserving the smooth rounded equal-coloured form of our museum shell, to have developed into a shell somewhat resembling *H. lauta*, with variegated colouring and rather strong central rib.

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MONOGRAPH OF THE GENUS.

SIGARETUS, Lamarck.

Including *Naticina*, Gray.

GENUS SIGARETUS.—Testa fere tecta, auriformis ovato-sub-orbicularis vel ovato-subconica subumbilicata, plerumque spiraliter incisa vel lirata; spira brevi, interdum immersa, ultimo magno inflato; apertura magna labio interno medio et supra plerumque incrassato.—Operculum corneum parvum unguiculatum planatum.—The shell is nearly covered by the lobes of the animal, which is proportionally large. The more typical species are depressed, ovate or orbicular, with very short spire and large body-whorl, with expanded mouth. They present little variation in sculpture, and few of them have colour. In the ‘*Naticina*’ group the shells are perpendicular and conical. The operculum is supposed to be rudimentary, but a figure is given in Delessert.

*Species.*Sect. I.—*Oblique auriformis.*

1. CONCAVUS, f. 8–11, 18, 19, *Lamarck*.—Testa globosa, fusco-straminea, intus castanea vel omnino albida, spiraliter valide sulcata spira exertiuscula frequenter lirida, ultimo anfractu latere ventrali ventricoso, post labium internum excavato; apertura subpyriformi antice rotunda, labio interno incrassato.—Of a globose form, with the upper part slightly depressed, and the spire conical and depressed; usual colour brown or straw, chestnut in the interior, but sometimes nearly white. The body whorl is very deep in front,

although concave behind the arched part of the inner lip. A colourless variety is erroneously figured in Reeve's monograph as *latifasciata* of Adams and Reeve in the Samarang. The spiral grooves are strong and regular.

2. NERITOIDEUS, f. 1, 16, 17, *Linnæus*.—Testa oblique ovata, concava, albida, dense spiraliter striata, striis minutissime rugatis; medio latissime pallide livido, intus castaneo pallide fasciato; spira brevissima, apice livide lutescenti, ultimo anfractu post labium internum excavato; apertura subrotunda, labio externo superne flexus.—Linnæus has described in his *Systema* as *Helices* two species of sigaretus. Two species are in the Linnæan collection, which correspond with the descriptions correctly enough as far as the few words go; '*convexa*' for the present species, and '*depresso-planiuscula*' for the *Helix haliotoideus*, together with their respective names, should be sufficient at least to distinguish them from each other. The words '*testa livida*' in the '*Museum*' description, although they seem to have puzzled the author of '*Ipsa Linnæi Conchylia*,' are quite explained in reference to this species, by a pale greyish band in the specimens, and in the var. f. 1 (*latifasciatus* of *Ad.* and *Ree.* *Voy. Lam.* not *Rev. Con. Icon.*) this band becomes more palpable.

3. JAVANICUS, f. 3, 4, *Gray*.—Quam *Sig. neritoideus* magis expansa, liris magis planatis, distantibus et acutis, apice livido apertura rotunda.—Having a near affinity with *S. neritoideus*, but with the ridges more flattened and distant, although acute at the edges. The body part of the last whorl is not so deep and ventricose. In all respects we may regard this shell as intermediate between the preceding and succeeding species. In our fig. 4 the sculpture is not sufficiently close and crisp.

4. LEACHII, f. 23, 24, 25, *De Blainville*.—Testa alba, solida planiuscula, depressa ovato-suborbicularis ultimo anfractu infra angulato planulato lato vix umbilicato, extus spiraliter planilirata, inter liras profunde sulcata; spira immersa; apertura ovata haud profunda.—Our shell, the *Cryptostoma Leachii* of *Blainville*, is flatter than either of the preceding species, and is distinguished by rather wide and deeply cut sculpture. It may possibly be the same as Adanson's *Sigaretus*, which is certainly not the full-bodied

shell (concavus) which some authors have taken for the *Helix halioloideus* of Linnæus. Our fig. 4 should represent Javanicus with closer and crisper sculpture, so as to shew the difference between it and that of *Leachii*. *S. perspectivus*, Say. (f. 25), is probably the same species.

5. *LÆVIGATUS*, f. 12, 13, 45? *Recluz*.—Testa tenuis, quam *S. neritoidea* lævior, magis depressa, alba, ovato-subrotunda. —Smoother than *S. neritoidea*, and more regularly ovate, ultimo anfractu subumbilicato.

6. *DELESSERTII*, f. 14, 20, 21, 22, *Recluz*. — Testa depressa, oblonga, obsolete spiraliter striata, concentrice subundulata; labio externo circa spiram elevato, leviter contracto, superne undulatim producto.—Of a more oblong oval form, and flatter than the preceding, with the outer lip raised over the spire and slightly contracted near the suture. The upper part of the outer lip is somewhat flexuously produced.

7. *AUSTRALIS*, f. 15, 46, 47, *Hanley*.—Testa convexiuscula sublævigata, ovato-oblonga, tenuis, tenuilirata; spira subimmersa, apice carneo-lutea; ultimo anfractu ad suturam elevato et leviter contracto.—The specimens in the British Museum differ from each other so much that it is difficult to mark the limits of the species. The specimen figured in the *Con. Icon.* is distorted, it is inadvertently repeated in our f. 15. Our f. 46 and 47 represent the true form.

8. *CUVIERIANUS*, f. 6, *Recluz*.—Testa tenuis, albida, depressa oblique ovata, post labium internum excavata, regulariter tenuiter lirata, apertura ovata, labio externo ad suturam elevato, leviter contracto; latere ventrali ultimi anfractus angusto; spira parva, lutea, immersa.—Although expanded and depressed this is not a flat species. It is rather thin and contracted round the suture.

9. *ZONALIS*, f. 7, *Quoy*.—Testa oblique oblonga, alba, tenuis, obsolete spiraliter striata, depressa, stramineo late fasciata; anfractibus infra medium subangulatis, ultimo anfractu latere ventrali angusto; apertura oblonga, labio interno tenui.—A rather thin, almost transparent shell with faint spiral striæ. The front part of the body whorl is narrow; the mouth oval with thin edges.

10. *ARGENTEUS*, f. 53, *Reeve*.—Testa alba, oblique ovata subdepressa, solidiuscula, post labium internum anguste

excavata, spiraliter tenuiter striata; spira parva parum exserta.—A plain rather solid, obliquely oval shell without any strong characteristics.

11. EXIMIUS, f. 54, *Reeve*.—Testa quam *S. argenteus* tenuior gracilior, apertura antice magis oblique producta.—Nearly similar in form to *S. argenteus*, but more obliquely produced and thin in substance.

12. MARTINIANUS, f. 27, 28, *Reeve*.—Testa oblique ovata depresso-convexa, subtus arcuata, solidiuscula; spiraliter sublirata, concentrice rugoso-striata, fusco-rufescens, apertura subovata, expansa, labio externo superne flexuoso, ad spiram elevato prope suturam subcontracto; spira parva, subimmersa.—Rather convex for one of the auriform species, and arched on the under side, distinguished by its banded chestnut brown colour, which is strong on the upper and much modified on the under surface.

13. UNIFASCIATUS, f. 52, *Recluz*.—Testa castaneo late fasciata, quam *S. martinianus* magis complanata.—I have copied one of several figures given by *Recluz* under this name, in some uncertainty as to whether it might be a variety of *Martinianus*. I have, however, a similar broad-banded shell which is much nearer to *S. planulatus* than to *Martinianus* in form, being flatter, smoother than the latter, and not at all arched.

14. PLANULATUS, f. 29, 30, *Recluz*.—Testa alba ovata depressa, subtus arcuata, superne planulata, epidermide straminea induta, lævigata, ultimo anfractu subtus lato planulato; apertura subquadrata, antice angulato, labio externo ad spiram elevato, tum undulatim emarginato, supra medium attenuatim producto.—This very flattened, smooth white shell is distinguished by a strong sinus and almost linguiform projection at the upper part of the outer lip.

15. HALIOTOIDEUS, f. 5, 31, *Linnæus*.—Testa ovata alba planulata, tenuiter inciso-lirata, ultimo anfractu subtus late planato; apertura parviuscula, labio interno tenui, arcuato, labio externo versus suturam vix emarginato, supra medium parum producto; spira immersa.—The small flat white shell figured by *Reeve* as *S. incisus*, the specimens from which our figures are taken and the one from the Linnæan cabinet figured in the 'Ipsa Linnæi Conchylia,' are

undoubtedly identical, and correspond fairly with the description of *Helix haliotoideus* in the Systema. As there are only two species in the Linnæan cabinet I do not know why my late father selected the concave one for the *Helix haliotoideus* of Linnæus, which is described as depresso-planiuscula.—Reeve, however, commending and intending to follow the lead given in the genera of shells, figured for *haliotoideus* a variety of Lamarck's *S. concavus*. Mr. Hanley has rightly identified both the Linnæan species.

16. MACULATUS, f. 2, *Say*.—Testa ovata auriformis subplanata, alba, spiraliter planulatim lirata, maculis fuscis seriatim dispositis picta, ultimo anfractu subtus concavo.—Rather more convex than the two preceding species, and spotted with chestnut in partial bands.

17. UNDULATUS, f. 50, 51, *Lischke*.—Testa ovata, valde depressa, subplanulata alba, ferrugineo pallide maculata, sulcis latiusculis, vix ‘*undulatis*’? sculpta; labio interno subincrassato, ultimo anfractu angusto, post labium internum angustissime excavato.—This flattened shell takes nearly the form of the younger specimens of the true *S. haliotoideus* of Linnæus, the upper surface is slightly more convex, and there are slight spots of pale colour. I have not, however, seen the shell, and cannot from the figure make out what is meant by the striæ being remarkably ‘undulated.’

18. JAPONICUS, f. 48, 49, *Lischke*.—Testa quam *S. undulatus* magis convexa, spiraliter tenuiter striata.—This shell is considerably more convex than the preceding, and more finely and closely sculptured, with very little undulation (?). It is also described as being solid. I have not seen the species, and can see no *undulated* sculpture in the engravings of either this or the preceding.

Sect. 2. ‘*Naticina*,’ subovato-erecta.

19. PAPILLA, f. 44, Chemnitz.—Testa solidiuscula, elevata ovali-subconica, spiraliter distanter inciso-lirata; anfractibus infra medium ventricosus, superne declivibus subattenuatis, ad suturam tumidis angulatis, spiralibus brevibus obtusis, ultimo post labium internum subumbilicato; apertura elevata oblique subpyriformi, labio interno crasso, superne tortuo.—Solid, rather elevated and conical with spiral rather distant

incised striæ, having a pyriform aperture with the inner lip thick and tortuous above, and the outer somewhat expanded below.

20. COARCTATUS, f. 34, *Reeve*.—Testa quam *S. papilla* brevior, læviuscula, ad suturam tumida, tum contracta, umbilico latiori; spira breviori.—Much shorter and more finely sculptured than *S. papilla*, with a wider umbilicus.

21. TUMESCENS, f. 37, *Reeve*.—Testa quam *S. papilla* tenuior, leviter sculpta, spira magis acuminata, ad suturam vix tumida.—A smoother and more gradually sloping shell than *S. papilla*, with the whorls scarcely swelled at the suture but gradually sloped.

22. NITIDUS, f. 35, *Reeve*.—Testa lævigata, leviter incisa, ovali-subglobosa, solida, late umbilicata, quam *S. papilla* magis ventricosa, labio interno rectiusculo.—A more ventricose and smooth shell than *S. papilla*, with a rather straighter inner lip.

23. OBLONGUS, f. 40, *Reeve*.—Testa quam *S. papilla* gracilior et magis acuminata, striis parvis elevatis sculpta, anfractibus superne gracile declivibus, spira elevata acuminata, apertura angusta, antice subquadrata.—Narrower than any of the preceding and gradually attenuated from below the middle to the acuminated spire.

24. ACUMINATUS, f. 43, *Adams* and *Reeve*.—Testa quam *S. papilla* tenuior, gracilior, spira magis elevata anfractibus ad suturam haud tumidis, labio interno flexuoso, tenuiusculo, umbilico angusto.—Thinner, more slender, with a more elevated spire than *S. papilla*; inner lip flexuous, umbilicus narrower.

25. MAMILLARIS, f. 41, 42, *Linnæus* (*Helix*), *Recluz*.—Testa alba, polita ovata ventricosa, spira brevi, anfractibus ad suturam rotundis, spira brevi; apertura semilunari, umbilico valido.—More equally oval, or less sloped than the first species in this section, rounded at the suture and smooth on the surface, and having a very short spire. I agree with Mr. Hanley, 'Ips. Linn.,' in thinking that *Recluz* was probably right in this identification of a rather doubtful shell.

26. PELLUCIDUS, f. 38, *Reeve*.—Testa globosa, late umbilicata parva tenuis; anfractibus superne subdeclivibus,

spira brevi, spiraliter tenuissime striata; apertura angusta, pyriformi, subobliqua, labio externo tenui.—A small globose natica-like species, finely spirally threaded, with broad umbilicus.

27. FIBULA, f. 39, *Reeve*.—Testa globosa, quam *S. pellucidus* paulo magis obliqua, lævigata; apertura magis obliqua, labio externo tenuiuscula.—Differing from *S. pellucidus* chiefly in the comparative absence of spiral sculpture and in the largeness of the aperture as compared with the front of the body whorl.

28. PICTUS, f. 36, *Reeve*.—Testa ovato-subconica, tenuis, lævis, umbilicatus, spira brevi, subacuminata, anfractibus superne declivibus, fasciatim pallidissime maculatis; apertura semiovata, labio interno superne incrassato, infra angusto, rectiusculo.—This smooth shell, faintly spotted in bands, and of an oval form somewhat sloped and pointed above, strongly resembles some of the more slender forms of *Natica*.

ALPHABETICAL INDEX TO SIGARETUS.

- acuminatus*, sp. 24, *Ad.* and *Rve.* f. 43.
argenteus, sp. 10, *Rve.* f. 53.
australis, sp. 7, *Hanley*, f. 15, 46, 47.
breviculum, *De Bl. Leachii* ? sp. 4.
coarctatus, sp. 20, *Rve.* f. 34.
concauus, sp. 8, *Lamk.* f. 8-11, 18, 19.
cuvierianus, sp. 8, *Recl.* f. 6.
cymba, *Menke*, *concauus*, sp. 8.
delessertii, sp. 6, *Recl.* f. 14, 20, 21, 22.
eximius, sp. 11, *Rve.* f. 54.
fibula, sp. 27, *Rve.* f. 39.
grayi, *Desh.* *concauus*, sp. 8.
halioideus, sp. 15, *Linn.* f. 5, 31.
halioideus, *Sowb.* *concauus*, sp. 8.
indica, *Gray.* Not found.
incisus, *Rve. halioideus*, sp. 15.
insculptus, *Ad.* and *Rve.* *Neritoideus*, sp. 1, f. 1.
japonicus, sp. 18, *Lischke*, f. 48, 49.
javanicus, sp. 3, *Gray*, f. 3, 4.
lamarckianus, *Recl.* *Delessertii* ?
latifasciatus, *Ad.* and *Rve.* *neritoideus*, sp. 1.
latifasciatus, *Rve.* (not *Ad.* and *Rve.*).—*concauus*.
- laevigatus*, sp. 5, *Recl.* f. 12, 13, 45.
leachii, sp. 4, *De Bl.* *Crypt.* 23, 24, 45.
listeri, *Recl.* *Martinianus*, var. ? sp. 12.
linneanus, *Recl. mamillaris*, sp. 25 ?
maculatus, sp. 16, *Say.* f. 2.
mamillaris, sp. 25, *Linn.* ? *Recl.* f. 41, 42.
martinianus, sp. 12, *Rve.* f. 27, 28.
maximus *Phil.* *concauus*, sp. 8.
neritoideus, sp. 2, *Linn.* f. 1, 16, 17.
nitidus, sp. 22, *Rve.* f. 35.
oblongus, sp. 23, *Rve.* f. 40.
papilla, sp. 19, *Chemn.* f. 44.
pellucidus, sp. 26, *Rve.* f. 38.
perspectivus, *Say.* *Leachii*, sp. 4.
petitii, *Recl.* *Martinianus* var. ? sp. 12.
pictus, sp. 28, *Rve.* f. 36.
plannlatus, sp. 14, *Recl.* f. 29, 30.
tumescens, sp. 21, *Rvo.* f. 37.
undulatus, sp. 17, *Lischke*, f. 50, 51.
unifasciatus, sp. 13, *Recl.* f. 52.
zonalis, sp. 9, *Quoy* (*Cryptost.*), f. 7.



MONOGRAPH OF THE GENUS

IANTHINA.

GENERIC CHARACTER. — Testa tenuis fragilis subglobosa plus minusve angulata purpurea; apertura subtrigona, labio externo versus medium sinuato; columella rectiuscula, subtortua, infra producta, rotunda vel subangulata; apice oblique retrorso. Operculum nullum.—The shells of this genus have attracted much notice, partly on account of the habits and appliances of the mollusc which produces them, and partly for the rich purple colour of their shells, corresponding with that of the purple dye secreted by them. The *Ianthinæ* float on the surface of the Atlantic and Pacific Oceans, supported by a float of bubbles, on which are suspended the eggs and fry. They have no specific shore habitats, being only driven in occasional shoals on land by stress of weather. Three or four species have thus been occasionally washed upon British shores. Notwithstanding the remarks of the late Mr. Reeve on the distinctness of the known species of *Ianthina*, it must be remarked that many of the species introduced in the *Iconica* cannot be defined, points of texture and linear distinctions of form not being reliable. The four or five species into which, for convenience, we may divide the *Ianthinæ* of the more angular section still tend to pass into each other by gradations which render it extremely difficult to sort a number of specimens; an experiment which I have tried with the late Mr. Taylor's collection of *Ianthinæ* from all parts of the world.

Species.

1. FRAGILIS, f. 1-4, *Lamarck*.—Testa superne alba, subangusta, infra planulata, ad angulum acute angulata; columella tortua, infra subacuta.—The only Ianthinæ in the Linnæan collection (*Helix Ianthina*, Linn.) referred to by Lamarck for this species are certainly specimens of this sub-conical form, and agree with the figures cited from the same author from *Chemnitz*. It is more sharply angular than any other species, with the exception of Reeve's *I. trochoidea*. Reeve's *I. affinis*, *I. roseola*, and *I. fibula* cannot be distinguished from this, and *I. involuta* is only a partly unrolled distortion of the same species.

2. TROCHOIDEA, f. 15, *Reeve*.—Testa conica spira elevata.—This shell, otherwise resembling the preceding, has a much more elevated, conical spire.

3. COMMUNIS, f. 7, 8, *Lamarck*.—Testa trapezoidea, quam *I. fragilis* ad angulum magis obtusa, colore magis suffusa, columella infra subacuta, anfractibus superne subplanulatis declivibus.—Less angular than *I. fragilis*, but more so than succeeding species. The upper part of the whorls is rather flattened. *I. Africana*, Reeve, is a larger shell, but not distinguishable from the above by any essential characters.

4. BRITANNICA, f. 5, 6, 14, *Leach*.—Testa subglobosa solidiuscula, purpureo intense suffusa, medio rotundata, vix angulata, apertura flexuosa, sinu marginali obtusa; anfractibus superne subinflatis.—This species has been taken on the coast of Cornwall after storms on English and Irish coasts; and what appears to be its young on the sands of Glamorgan-shire, South Wales (the latter named *I. Smithia*, Reeve). I can have little doubt in also associating *I. grandis* of Reeve with this species.

5. PLANOSPIRATA, f. 9-13, *Ad.* and *Rve*.—Testa sublenticularis, anfractibus latis, medio rotundis, vix angulatis, superne convexiusculis, depressis.—Of a depressed-convex or lenticular form, more rounded than angular at the circumference, and having the aperture wider than broad. It seems impossible to distinguish from this species Reeve's *I. casta*, *I. depressa*, and *I. cœruleata*. *I. balteata* is probably the young of the same.

** *Globose.*

6. *GLOBOSA*, f. 16, 18, *Swainson*.—Testa globosa, tenuis, inflata, tenuissime decussata, supra infraque purpurea, medio pallida; spira parva, anfractibus rotundatis subimmersis, prope suturam tumidis, ultimo magno, inflato; apertura elongata, infra acuminata, sinu marginali acuta.—Thin, inflated, of a pale colour on the upper part of the whorls, the upper of which are rounded and partly sunk in the suture. The aperture is longer than wide, and pointed below. There is no tangible distinction between this and the *I. decollata* of Carpenter. *I. iricolor* is more suffused and iridescent in colour, and somewhat less inflated.

7. *PALLIDA*, f. 19, 20, *Harvey*.—Testa quam *I. globosa* minor, magis exigua, apertura antice rotunda.—Smaller and proportionately narrower than *I. globosa*, but only separated here on account of the rounded and patulate form of the lower part of the mouth. *I. STRIOLATA* of *Adams* and *Ree*. is indistinguishable, although the faint striæ common to all the species are a little more expressed.

8. *IRICOLOR*, f. 17, *Reeve*.—Testa quam *I. globosa* tenuior, purpureo suffusa, subiridescens, anfractu ultimo infra magis excavato, columella magis tortua.—The suffused colour, the slight iridescence, thin substance, excavation of the lower part of the body whorl, and the tortuous columella seem to justify the separation of this species from *I. globosa*.

9. *EXIGUA*, f. 23, 24, *Lamarck*.—Testa parva utrinque acuminata, omnino densi purpurea, tenuiter lirata liris medio angulatim sinuatis; apertura alta medio profunde et acute sinuato.—*I. bifida*, *Nuttall*, is probably the American representative of this species, which is longitudinally ridged, the ridges being sharply sinuated in the middle. It is narrower than the other globose forms, and more pointed at both ends.

10. *NITENS*, f. 21, *Menke*.—Testa quam *I. exigua* paulo magis inflata, vix lirata, nitens, utrinque acuminato.—The form is the same as that of *I. exigua*, perhaps a little more inflated, but the liræ are partially, if not entirely, obsolete.

11. UMBILICATA, f. 22, *D'Orbigny*.—Testa parva, angulatum subglobosa, lævis, anfractu ultimo medio subacute angulato, post columellam subumbilicato; columella rectiuscula, infra acuminata.—An interesting minute shell, in form something between the angular and globose shells of the genus. A slight umbilical depression is observable behind the columella, which terminates in an acute angle.

ALPHABETICAL INDEX TO IANTHINA.

- affinis*, Rve. fragilis. See f. 2.
Africana, Rve. communis, f. 8.
balteata, Rve. planospirata. See f. 12.
bicolor, Menke, communis, f. 7, 8.
bifida, Nuttall, exigua, sp. f. 23, 24.
britannica, Leach, sp. 4, f. 5, 6, 14.
casta, Rve. planospirata. See f. 11.
cærulata, Rve. planospirata. See f. 9, 10.
communis, Lamk. sp. 3, f. 7, 8.
decollata, Carp. globosa. See f. 18.
depressa, Rve. planospirata. See f. 10.
exigua, sp. 9, Lamk. f. 23, 24.
fibula, Rve. fragilis. See f. 3.
fragilis, Lamk. sp. 1, f. 1-4.
globosa, Swains. sp. 6, f. 16-18.
grandis, Rve. Britannica, f. 5.
involuta, Rve. fragilis. See f. 1-4.
iricolor, Rve. sp. 8, f. 17.
nitens, sp. 10, Menke, f. 21.
pallida, sp. 7, Harvey, f. 19, 20.
patula, Ph. pallida, sp. 7.
penicephala, Peron. communis, f. 7, 8.
planospirata, sp. 5, Ad. and Rve. f. 9-13.
prolongata, Bl. globosa, sp. 6.
roseola, Rve. fragilis. See f. 1.
smithiæ, Rve. Britannica. See f. 5.
striolata, Ad. and Rve. pallida. See f. 19.
striulata, Carp. fragilis, sp. 1, f. 1-4.
trochoidea, Rve. sp. 2, f. 15.
umbilicata, sp. 11, D'Orb. f. 22.

MONOGRAPH OF THE FAMILY

CALYPTRÆDÆ.

Testa patelliformis, adhærens, subtus appendice furcata vel calyculata, aut lamina semispirali aut septiformi munita. Limpet-shaped-shells, having an internal plate or appendage in place of the basal plate and columellar lip of spiral shells. In CALYPTRA, as limited in this monograph, it is a sort of forked projection from the apex. In CRUCIBULUM, with some variations, it is an oval cup projecting from the apex, but attached by one side to the inner wall of the shell. In TROCHITA, it forms a spiral or semispiral base to the last whorl; and in CREPIDULA it is more or less septiform. We accept this general arrangement (from Reeve) as the most convenient, although, through intervening forms, the genera, excepting the first, cannot be very exactly defined.

Genus CALYPTRA.

Molluscum interdum laminam basalem extraneam formans. Testa albida, epidermide tenui induta; appendice columellari projecta, fornicata, bifurcata.—The forked projection resembles the half of a narrow split funnel, and serves the purpose of an internal support in place of the usual spiral column.

Species.

1. EQUESTRIS, f. 1, 2, *Linnaeus*.—T. elevato-cónica, liris scabriusculis profundis, ad marginem prominentibus sculpta, margine crenato; appendice magna; lamina basali solida,

marginē crenato.—This species has the striæ more regularly and deeply cut than in any of the allied species. It has a crenulated edge, and forms a shelly plate, which is also crenulated at the margin. Lamarck having selected this out of several species which may have been intended by Linnæus, it has been so accepted by conchologists.

2. *CICATRICOSA*, f. 3, 4, 35, 36, *Reeve*.—Tenuis, depressa, tenuissime striata, annulis concentricis undulatis rugata.—Thin, finely striated, roughened with concentric swellings, and having the apex nearly central. *Adamsii*, f. 4, and *Cyathella*, f. 35, appear to be really undistinguishable from this, although the former has been found with a shelly base as in *equestris*.

3. *DORMITORIA*, f. 19, 20, 53, *Reeve*.—*T. solidiuscula*, ventricosa, tenuiter striata, apice valde arcuatum retrorso, acuto. Rather solid, ventricose, finely striated, with apex arched in a backward direction.

4. *STULTORUM*, f. 29, *Reeve*.—Oblique conica, dense striata; apice acuto producto curvo.—Obliquely conical, very closely ribbed, with the arched acute apex leaning beyond the margin.

5. *UNCINATA*, f. 28, *Reeve*.—Subdepressa lævis; apice uncinato retrorso.—A smooth round species with a hooked and much recurved apex.

6. *SACCHARI-META*, f. 8, 9, *Reeve*.—Rotunda elevata læviscula, apice subretrorso.—This very elevated, rounded shell has very little sculpture of its own, the waved lines and crenated margin of the specimen resulting from inequalities in the surface of attachment.

7. *TONGANA*, f. 38, 39, *Quoy*.—Parva subrotunda ventricosa lævis apice rotundo marginali.—Small, rather round, ventricose, with the apex round, marginal.

8. *BULLA*, f. 18, *Reeve*.—Tenuissima subinflata laminam tenuissimam basalem formans; rugis concentricis et striis radiantibus regulariter inæqualibus cancellata.—This species sometimes forms a basal plate. The sculpture is extremely fine, but, when magnified, shows equi-distant radiating ridges with fine striæ delicately cancellated between.

9. *CEPACEA*, f. 7, 5, 6, 35, 36, *Broderip*.—Tenuis planulata expansa orbiculata tenuissime striata, apice acuto, retrorso.

Thin, flat, wide, round, finely striated, with the apex sharp and turned backwards. *C. cornea*, Brod., f. 5, 36, and *C. varia*, Brod., f. 6, cannot be definitely distinguished, and from Mr. Broderip's own remarks in the Linnæan Transactions, it may be inferred that they are probably only varieties a little irregular in growth. They take 'almost every shape that a calyptræa can assume.' The ends of the divided cyathus are described as more pointed in the more normal *C. cepacea*. But these are also subject to great variation.

10. STELLA, f. 27, *Reeve*.—Orbicularis complanata, liris radiantibus subdistantibus et interstitialibus minutis concentricè decussatis stellata; apice subcentrali depresso, appendice parva.—Round, flat, with distant radiating ridges and interstitial decussated areas, giving a star-like appearance to the surface. The appendage is very small in the specimen figured.

11. POROSA, f. 51, 52, *Reeve*.—Elevato-conica rotunda tenuis, radiatim costata; interstitiis foveolatis; apice valde retrorso, acuto, appendice interna lanceolata.—Raised, radiately and roughly ribbed, pitted between the ribs; apex bent towards the back margin.

12. ALBA, f. 10–15, *Martini*.—Solidiuscula, tenuissime striata, alta, varie corrugata et tortilis; apice retrorso.—The first figures, pl. 13, f. 117, 118 of Martini's *Lepas alba* certainly represent forms of this crumpled species, which, according to the particular character or degree of the tortuosities exhibited, are divided into the species *tortilis* and *Martiniana*, f. 10, 11, *diaphana*, f. 12, *fibulata*, f. 13, and *balanoides*, f. 14, 15.

13. PAPHYRACEA, f. 16, 17, *A. Ad.*, fid. *Reeve*.—*Alba* similis, sed oblique elevatim elongata.—The shell figured by Reeve differs less from *C. alba* than our f. 16, 17. Both may quite possibly represent very elongated distortions of the previous species.

14. CORRUGATA, f. 42, 43, 44, *Broderip*.—Orbicularis, depressa, rudissime radiatim costata, costis nodosis et divaricatis; apice obtuso subretrorso; facie interna concentricè et leviter nodosa.—Orbicular, depressed, very roughly radiately ribbed; ribs nodose and divergent; apex obtuse and drawn towards the back; interior surface concentrically and smoothly nodose.

15. CANCELLATA, f. 21, 22, *Adams* and *Reeve*.—Tumida vel ventricosa, costellis radiantibus et liris interstitialibus cancellata; apice retrorso vel subcentrali.—Our figure 22 is of the form described in the voyage of the Samarang; f. 21 is a capuliform specimen in hand. The radiating ribs with minute interstitial cross-bars are the same in both.

16. ALVEOLATA, f. 23, *Adams*.—Irregularis, sub-elevata, costellis radiantibus acute nodosis et rugis concentricis decussata. Irregular, rather raised; decussated with radiating sharply notched riblets and concentric wrinkles.

17. VANIKOROENSIS, f. 17, *Quoy*.—Conica, obliqua, obtusa, striis radiantibus, inæqualibus sculpta.—The writer does not understand this species, nor does he suppose that *Mr. Reeve* has identified it. In the Astrolabe one side figure is given, which we copy, and the other figures are of distorted shells.

18. LAYARDI, f. 18, *Reeve*.—Hipponiciformis, radiatim costata; costis rotundis, longitudinaliter valde striatis.—The sculpture of this obliquely conical species is that of fine small fibres gathered up into bunches so as to form ribs.

19. PILEOPSIS, f. 40, 41, *Quoy*.—Parva capuliformis tenuissima, liris majoribus radiantibus et interstitialibus minutis sculpta.—Small, cap-shaped, very finely sculptured, with larger radiating and smaller interstitial raised striæ. Probably the same as figured by *Reeve* for *C. vanikoroensis*, *Quoy*.

20. HIPPONICIFORMIS, f. 24, 25, 26, *Reeve*.—Rotunda, parva, oblique elevatim producta, striis minutis, subæqualibus sculpta; apice obtuso valde retrorso.—Round, small, obliquely elevated, produced, with very fine, nearly equal striæ.

21. UMBO, f. 49, 50, *Reeve*.—Elevato-conica, rotunda, distanter radiatim subnodoso-costata, interstitiis minute striatis; apice retrorso, submarginali.—Conically raised, round, distantly rayed with nodose ribs; interstices minutely striated, apex bent back towards the margin.

22. SCUTULUM, f. 46, 47, *Reeve*.—Orbicularis convexa, radiatim lirata; liris distantibus, interstitiis minute striatis, margine striato, appendice minuta, apice valde retrorso.—Small and round, with equidistant radiating ribs and interstitial striæ; apex near the margin; margin striated.

23. TECTUM-SINENSE, f. 30-34, *Chemnitz*.—Lævis interdum elevata, laminis concentricis tectiformibus exfoliata.—Smooth, exfoliated with concentric roof-like laminæ. In one edition of Linnæus' work this stands as the first variety of his *Patella equestris*. The species is also figured as second variety of Martini's *Lepas alba*. Our f. 30, 33, 34 represent the normal forms; 32, *scabies* of Reeve, which has the laminæ more flattened; and 31, the *varia* of Reeve, but not of Broderip, may be regarded as a state in which the first contabulated lamina is very broad and flat and the second has scarcely begun to be formed.

24. ACULEATA, f. 45, *Broderip*.—Depressa, rotunda, lævis, cornea, aculeis parvis fornicatis distanter adspersa.—May possibly be a variety of *C. cornea*, Broderip (*cepacea*), with accidental points.

Genus CRUCIBULUM.

(Plate III., IV., and part of V.)

Testa patelliformis; appendice interna ovata, calyciformi vel semicalyciformi, lateraliter per marginem unum vel per margines duos adnata.—The 'cup and saucer' limpets normally have a funnel-shaped cup free from the sides of the parietal portion, except where joined in one lateral seam, but a section of the species have the appendage looped or three-cornered, and attached by two margins, and forming two of the three angles.

1. SCUTULATUM, f. 1-6, *Gray*.—Patelliforme vel conicum, fulvum vel fusco-purpurascens, radiatim costatum, costis crassis, subnodosis rubro-lineatis; calyce infundibuliformi.—The variety (*rude*, Broderip) with sharp ribs and wide

intervals, seems to differ from those with thick rounded ribs near together, and the conical forms may seem distinct from the flattened ones, but in a number of specimens they are found to merge into each other.

2. AURICULATUM, f. 7-14, *Chemnitz*.—Subspiratum, varie radiatim et concentrice pictum, fere læve, vel spinoso-costatum, costis et spinis oblique radiatis; spinis brevissimis vel elongatis; calyce magno, ovato.—The spines or spinous ribs, as well as the markings, differ much in different varieties, but agree as to their oblique, semispiral direction.

3. LIGNARIUM, f. 15-23, *Broderip*.—Oblique conicum, elevatum, (variat magis depressum aut lateraliter distortum) radiatim plus minusve striatum aut liratum; apice acuto valde retrorso; pallide fulva, aut grisea, castaneo radiata, aut acute maculata, nonnunquam lignaria calyce ovato, lateraliter annexo.—Figures 15, 16 represent the most extreme forms, and both are included in Mr. Broderip's plates. *C. trigonale* of Adams and Reeve, our f. 21, 22, show a strong affinity to them, while in its turn *C. spectrum*, Reeve, cannot be separated; and the *box-wood-coloured* deformity, f. 23, brings us back to *lignaria*, f. 15.

4. TENUE, f. 24, 27, 28, 30, *Broderip*.—Tenue subdepressum sublævigatum, fulvo vel castaneo radiatum, apice subcentrali; calyce ovato, lateraliter adnato.—Much smoother and thinner than the preceding, with a central or nearly central apex.

5. SERRATUM, p. 25, 26, *Broderip*.—Depressum costatum castaneo uniradiatum, apice subcentrali obtuso, costis subdistantibus, interstitiis concentrice foveolatis, calyce angulato lateribus duobus liberis.—A small flat species, with rather serrated ribs and pitted interstices. The cup is triangular, and has two free sides, the third side forming part of the wall.

6. CONCAMERATUM, f. 29, *Reeve*.—Oblique ovato-conicum, fulvum, valide costatum, interstitiis foveolatis; apice acutissimo oblique arcuato; calyce trigono lateribus duobus liberis.—In the form of the cup and the sculpture this resembles *C. serratum*, but the apex is elevated, and has a strong semilateral curve.

7. PECTINATUM, f. 31, 32, *Carpenter*.—Solidum, ovatum, conicum, fulvum, distanter et rude costatum; apice acute et oblique uncinato; calyce semiovato flexuoso, uno latere adnato.—Very coarsely ribbed with raised hook-shaped apex pointing upwards to the left. One side of the cup is formed by the wall of the shell, and the other two sides by a loop.

8. CORRUGATUM, f. 33-36, *Carpenter*.—Rotundum vel subquadratum, subdepresso-conicum, pallide fulvum, vel castaneum, costis corrugatis radiatum, apice subuncinato, plerumque retrorso.—*C. violaceum*, Reeve, with its delicate lilac interior, is not sufficiently distinct to be separated.

9. RADIATUM, f. 37, 38, *Broderip*.—Ovato-rotundum, depressum, tenuiter radiatim striatum et purpureo-castaneo radiatum, apice obtuso, subcentrali: calyce semicirculari, profundo; antice subplanato, retrorsim decumbenti.—The shell is a rather depressed cone with obtuse subcentral apex, rayed with dark chestnut. The cup is lilac, a half funnel with one straight side, and pressed backwards so as to lie almost against the parietal part.

10. STRIATUM, f. 39, 40, *Say*.—Subrotunde quadratum, depressum, oblique radiatim liratum; apice retrorso, uncinato, calice subtrigono, lateribus liberis in amentum curvis.

11. EXTINGTORIUM, f. 55-60, *Lamarck*.—Irregulariter rotundatum, læve, fulvo-grisescens, plerumque spiraliter radiatum; apice subcentrali, semispirato, uncinato, calyce angustissime infundibuliformi.—The sharply hooked apex and the rays of colour are curved half spirally.

12. VERRUCOSUM, f. 51, 52, *Reeve*.—Subdepressum fulvum rude plicatum et verrucosum; apice obtuso subcentrali, calyce angustissime infundibuliformi.—With the similarly looped calyx of the preceding this species has an obtuse apex and a very wrinkled, warty exterior.

Genus TROCHITA.

Testa trochiformis vel patelliformis, spiralis, infra concavo-septiformis; margine columellari reflexo, margine basali producto.

Shell trochus-shaped or patella-shaped, spiral, concave below; base septiform, columellar margin more or less reflected, basal margin more or less prominent.

Species.

1. CONICA, f. 61, 62, *Broderip.*—Rotunda subdepressa, fulva, fasciis undulatis castaneis radiata; spira parva centrali anfractibus perpaucis, septo basali lato, sub-angulatum prominenti.—A round limpet-shaped shell with a central apex. The septum is broad and hatchet-shaped, with the front edge prominently produced.

2. ASPERSA, f. 63, 64, *C. B. Ad.*—Quam *T. conica* tenuior, pallida, magis distanter radiata; septo angustiori haud tantum antice producto.—Like a small light miniature of *T. conica*, with the septum narrower and less produced in front.

3. LICHEN, f. 65, 66, *Broderip.*—Subovata, depressa, albida apice subcentrali, septo angusto, angulatum producto.—A very flat, rather smooth ovate shell with a narrow hatchet-shaped septum.

4. AURITA, f. 42, 43, *Reeve.*—Subdepressa, irregulariter rotunda, radiatum serrato-costata; apice laxo spirato; septo dolabriformi valde producto.—Front margin of septum much produced and rounded at the end of the projecting part.

5. SUBREFLEXA, f. 67, 68, *Carpenter.*—Irregularis pallida spinoso-costata; apice tumide spirali; septo late dolabriformi. Striæ or radiating ribs spinose, apex spiral with a second tumid whorl; septum broad, hatchet-shaped.

6. FASTIGIATA, f. 72, 73, 74, *Gould.*—Rotunda conica, sordida læviuscula, lateraliter convexa; apice mamillato; septo obtuse trigono.—Not so depressed as *S. sinensis*,

with the sides of the conical form a little concave; septum obtusely hatchet-shaped.

7. *POCULUM*, f. 80, 84, *Reeve*.—Parva sordida rotunda convexo-conica tenuis cornea; septo trigono-spirali.—Small, cup-shaped, dull greenish brown, with a small hatchet-shaped septum. The specimens originally described were covered with an extraneous growth.

8. *PELLUCIDA*, f. 82, *Reeve*.—Parva, subovata, depressa, cornea pellucida; septo trigono-spirali.—The difference between this and the preceding species is very small, but the latter is more depressed and thin. *T. poculum*, f. 84, is undistinguishable.

9. *LATERALIS*, f. 93, 94, *Sowerby*.—Solida, oblique compressa, divaricatim rugoso-corrugata, albida, partim castaneo nebulata, lamina septiformi spirali, complanata, medio subumbilicato, margine undulatum arcuato; spira trispirata.—Something like an obliquely flattened trochus with hollow base.

10. *CALYPTRÆFORMIS*, f. 85, 86, *Lamarck*.—Solida, spirali-ter crepiduliformis, purpureo suffusa et extus obscure fasciata, lamina basali arcuatim recedenti, medio anguste umbilicato; spira depressa, anfractibus tribus subcomplanatis. Although in this and the next species there is an approach to the form of *Crepidula*, yet the septum is simply as the base of the whorl of a spiral shell.

11. *MACULATA*, f. 87, 88, *Quoy*.—Rotunde crepiduliformis, intus purpurea, late unifasciata, extus epidermide straminea induta, anfractibus latiusculis convexis; lamina basali latissima, profunde subsidenti, margine arcuato.—More rounded, convex in the whorls, and hollow at the base than the preceding species. It is otherwise known by a broad blackish purple band seen strongly in the interior, and more obscurely on the outer surface when the epidermis is removed.

12. *CLYPEOLUM*, f. 89, 90, *Reeve*.—Depresso-trochiformis, intus alba, extus fuscata, epidermide lævi induta; apice centrali; anfractibus quaternis, convexis; lamina basali profunde subsidenti; margine septiformi undulatum subproducto. In structure nearly approaching the trochiform species, but not, like them, conical in form. The septiform spiral base is sunk far within the outer margin of the shell.

13. CORRUGATA, f. 91, 92, *Reeve*.—Acute conica, tenuis, trochiformis, radiatim rugose lirata, albida; spira elevata, anfractibus quaternis profundis, margine basali dentato, lamina interna basali profunde subsidenti; margine subarcuatim producto.—Closely allied to *T. radians* and *T. spirata*, but light in colour and structure, with finer ribs and marginal fluting.

14. RADIANIS, f. 95, 96, 99, *Lamarck*.—Subdepresso-conica, extus fulva, epidermide tenui induta, intus alba, maculis magnis purpureo-castaneis picta, margine fulvo maculato; anfractibus quinis convexiusculis; costis distantibus hinc illinc divaricatis oblique radiatis, margine dentato, ultra septum basale extenso; margine laminæ basalis leviter producto, undato.—The rayed ribs are oblique and sometimes divergent, and the four whorls are wide and a little convex. The elevated spire of fig. 99 is abnormal.

15. SPIRATA, f. 97, 98, *Forbes*.—Conica alta fumoso-fusca, septo radiatim fasciata; anfractibus quinis, ad suturam concavis, tum tumidis, fere perpendiculariter costata, costis prominentibus distantibus; margine laqueatis; septo basali radiatim fasciato, margine subangulatim producto.—The narrower whorls, the concave suture, the more prominent and straight ribs, and general dark chocolate colour distinguish this from the preceding species.

16. LAMELLOSA, f. 41, *A. Adams?*—Rotunda depressa parva subsquamata; apice laterali; septo quasi incipienti, angustissimo, lateraliter decumbenti.—A very small shell, in which the septum appears rudimentary.

17. SORDIDA, f. 49, 50, *Broderip*.—Parva, sordide lutea, depressa, ovata, radiatim costata; anfractibus tribus regularibus; septo subtrigono, dolabriformi.—With the external form of a regularly spiral shell of several distinct whorls, and the hatchet-shaped septum of *T. conica*, *T. sinensis*, &c.

18. UNGUIS, f. 47, 48, *Broderip*.—Parva livido-fusca, laxe spirata; apice elevato acuminato, laxato; septo subtrigono, arcuatim dolabriformi.—The loosened coils of the apex remind one of a little snake. The hatchet-shaped septum as in the preceding.

19. HELICOIDEA, f. 53, 54, *Sowerby*.—Subaurantia, oblique subglobosa; spira elevata, anfractibus tumidis obliquis,

ultimo expanso, divaricatim costato; septo arcuato, margine columellari tumide reflexo.—A dorsal view gives the idea of a helicoid shell. The septum is more like that of some *crepidulæ*.

20. MAMILLARIS, f. 69, 70, 71, *Broderip*.—Conica lævis, extus sublivida, intus obscure fusca; spira mamillata, septo breviter dolabriformi.—Conical, smooth, rather livid without, sometimes coffee-coloured within, straight-sided; apex a little mamillated coil.

21. SINENSIS, f. 75–79, *Linnæus*.—Depresso-conica albida, plus minusve spinosa, ad latera subconcava; septo acute trigono.—A flattened cone with the lateral outlines a little concave; the surface covered more or less perceptibly with minute spinous points.

Genus CREPIDULA.

Testa plerumque ovata patelliformis; apice marginali, frequenter terminali; subtus concava, lamina basali septiformi.—In *Crepidula*, the septiform plate is scarcely spiral in any case, and in most cases not at all so. It covers about half the cavity. In a few species it is lobed or loop-like in the middle, with a deep notch at the side.

Species.

1. DILATATA, f. 100, 101, 102, *Lamarck*.—Semirotonda, fulva, frequenter variegata, subtus castaneo vel purpureo varie picta, apice laterali, subspirali; septo albo, subspirali, margine infra lobatim producto, ad terminum emarginato.—The white variety is the *C. pallida* of *Broderip*.

2. NAUTILOIDES, f. 104, 105, *Lesson.*—*C. dilatata* similis, sed profunde concava; spira magis inflata et contorta.—The habit of this *Crepidula* is to coil its shell over others of the same species. Groups of these limpets are found thus with the shells deep and curved.

3. FOLIACEA, f. 103, 106, 107, *Broderip.*—Subdepressa, lateraliter expansa, alba, intus fasciatim aureo et castaneo fasciata, extus rugose plicata, margine crenato, apice parvo, terminali, septo trigono, curvo, prominente lobato.—Of the same general form as *C. dilatata*, but wrinkled half-divergently, with crenulated margin. The interior is prettily flashed with orange and chestnut.

4. ONYX, f. 112, *Sowerby.*—Ovato-oblonga, castanea, lineis rubris radiata fulvo marginata; apice uncinato terminali, septo late albo rectiusculo; margine undulatum sinuato.—The original specimen, described in the 'Genera of Shells,' was overgrown and covered on the outside with extraneous matter, but the natural colour appears to be mahogany, with reddish lines showing at the inner margin.

5. FORNICATA, f. 118, 123, *Linnaeus.*—Ovato-oblonga, carnea, punctis minutis rubris adspersa, margine lineato (variat subpurpureo), septo lato elongato recto.—Susceptible of many variations in form and colouring, but mostly sprinkled with the little red dots that have given to one variety the name of *C. arenata*, Broderip.

6. EXCAVATA, f. 119, *Broderip.*—Lævis, straminea, oblonga irregulariter ovata, lateraliter compressa; intus fasciis lividis picta; apice producto uncinato terminali septo lato, margine recto.—The specimens hitherto found have been bent up at the sides in a peculiar manner. The general colour is a kind of straw, with dark radiating flashes within.

7. PORCELLANA, f. 120, 121, 122, *Linnaeus.*—Ovata subexpansa depressa partim fusco-livida castaneo variegata, margine intus maculato; apice peculiariter producto mamillato; septo lato brevi, margine leviter arcuato.—The spots with suffused edges, showing strongly on the inner margin, and the peculiarly mamillated and produced darkly coloured apex, are the characteristics of this species. Var. *immersa*, f. 122, has evidently been figured from a beach-rolled specimen.

8. BILOBATA, f. 108, *Gray*.—Tenuis, pallide fusca, trifasciata, depressa; apice terminali, septo parviusculo, supra medium emarginato, infra lateraliter profundissime inciso.—The lower notch in the margin of the septum is deeply cut. The shell is of a light texture and light brown colour.

9. ACULEATA, f. 124, 125, *Gmelin*.—Ovata subdepressa subspirali alba fusco fasciata, costis spiniferis ornata; septo subspirali, infra medium producto, ad marginem testæ breviter emarginato.—The spines in this species differ in number and size, and the chestnut bands in depth of colour, but a specimen of the species may always be known.

10. FISSURATA, f. 151, *Sowerby*.—Breviter subtrigona, convexa, intus castaneo nigrescenti; apice terminali, uncinato; septo producto, lobato, lateraliter profundissime inciso, margine aurantio lineato.—A pretty little shell with dark interior, a very deep notch in the prominently lobed septum, where it joins the side. It has one or two lines of orange colour on its margin.

11. CONVEXA, f. 109, 110, *Say*.—Parva ovato-oblonga convexa, succinea, apice terminali; septo parvo, subtrigono, margine arcuatim recedenti.—An amber-coloured small oval shell, very convex, with terminal apex; the septum is small and arched recedingly.

12. MARGINALIS, f. 111, *Broderip*.—Subplanata expansa, versus apicem lineata, intus (nisi ad marginem) vivide castanea, margine aurantio lineata; septo oblique lobato, apice acute producto, terminali.—The writer has seen specimens of intermediate shells tending to show that the specimen figured in the 'Transactions' may have been only an accidentally flattened growth of *C. onyx*.

13. COSTATA, f. 113, 114, *Deshayes*.—Ovato-oblonga rugosa, valide distanter costata, carneo-subpurpurea; interstitiis costarum intus extusque livide castaneis margine dentato; apice parvo, terminali; septo latissimo niveo, undulatum fere recto.—Broad ribs and dark interstices, showing within and without, and a strongly-toothed edge, characterise this species, which is unlike any other.

14. ADUNCA, f. 115, *Sowerby*.—Capuliformis, fumoso-fusca, dorso convexo; apice producto uncinato declivi; septo parvo,

profundo trigono albo.—Dark brown, deeply cap-shaped, with a hooked apex curved downwards.

15. ROSTRATA, f. 116, 117, *C. B. Ad.*—Quam *C. adunca* altior, apice magis elevato, margine regulariter ovato; septo parvo.—Of a more regularly oval form and more freely raised apex than *C. uncinata*.

16. ADSPERSA, f. 126, 127, *Dunker.*—Angusta oblonga pallida maculis fusco-purpureis adpersa; apice terminali, obtuso; septo leviter arcuato.—The specimens figured in *Dunker's* work are irregular in form, but narrow and with obtuse apices.

17. SITCHANA, f. 128, 129, *Middendorf.*—Succinea, oblique capuliformis, convexa; apice postice marginali septo angustissimo, profunde recedenti.

18. LENTIGINOSA, f. 130, 130*, *Sowerby.*—Irregularis, luteo-castanea, castaneo-purpurascenti maculata, frequenter lateraliter compressa, dorso frequenter elevato, apice libero, uncinato, declivi; septo albo, obliquo.—The peculiar lentiginous spots and general appearance seem to bring the above two forms together; the mode of growth preventing uniformity of shape.

19. HEPATICA, f. 131, 132, *Deshayes.*—Irregulariter subovata, lævis, intense fuscata, apice producto, septo albo suboblique arcuato.—When young, the form is ovate, as in f. 132. Afterwards the shape depends on conditions of growth. The interior is intensely blackish-brown.

20. INCURVA, f. 133, 134, 135, *Broderip.*—Irregulariter oblonga, castaneo-nigricanti; longitudinaliter lirata; apice producto, deflecto; septo albo, lato, margine arcuato.—Traces of the liræ may be seen on the back of the variety named *incurva* by *Broderip*, although they are not so strong as in the variety *lirata* of *Réeve*.

21. CONTORTA, f. 137, 138, *Quoy.*—Albida linguæformis, pallide maculata, contorta; septo parvo, trigono.—There is little character to be traced in this pale, irregularly-formed species.

22. UNGUIFORMIS, f. 139, 140, *Lamarck.*—Alba tenuis, oblonga, ad terminum subquadrata, dorso decurvo vel recurvo,

septo lato fornicato, apice minuto.—This white shell grows sometimes on the outside and sometimes on the inside of rounded shells, and takes a convex or concave form accordingly.

23. EXUVIATA, f. 141, 142, *Nuttall*.—Albida vel nivea linguæformis depressa, angustissime vel mediocriter elongata; apice producto, frequenter exfoliato, septo elongato, plus minusve fornicato.—The form first described is that of fig. 142. It differs from the other; but this has been caused by the condition of its growth.

24. NAVICELLOIDES, f. 143, *Nuttall*.—Alba subrotunda subrugosa concava, solida; lamina septiformi latissimo margine arcuato, apice laterali.—The prevailing free shape of this white *Crepidula* is circular, slightly curved, with a decumbent apex.

25. LESSONI, f. 144, 145, 146, *Broderip*.—Fulva vel alba, ovata vel subtrigona, laminis concentricis extantibus, subdistantibus radiatim rubro-lineatis, vel vacuis ornata; margine squamoso; septo semicirculari; apice producto leviter curvo.—The typical reddish-streaked shell cannot be distinguished otherwise than by colour from the white variety named *C. fimbriata* by Reeve.

26. SQUAMA, f. 147, 148, *Broderip*.—Depressa, ovata, epidermide subrugosa induta obscure radiatim lineata; apice producto, terminali, septo medio arcuato.—Differing from the preceding in the absence of outstanding scaly plates.

27. WALSHII, f. 149, 150, *Hermansen* (*Reeve*).—Irregulariter dilatata, curva, alba, frequenter planata; septo subtrigono, margine dilatato, partim excavato, ad latus obsolete inflecto et plicato; apice parvo, acuto, curvo.—Our f. 150 represents the familiar form of *C. Walshii*, Herm.; *plana*, Ad. and Rve. It has been developed on a flat or even concave surface, while the more irregular f. 149 (*scabies*, Rve.) has had its growth among crudities, and is, therefore, rough and irregular.

28. CHINENSIS, f. 152, 153, *Gray*.—Test. jun. rotunda calyciformis paucispiralis; postea irregulariter expansa; spira decumbenti; septo trigono, latere columellari reflexo, tubiformi.—In this species the columellar part of the septum

appears to have been reflected, and its edge soldered on to the basal plate, leaving a penetrable tube.—The young shell, f. 152, 153, is round, with a decumbent spire, but in growing becomes laterally and irregularly expanded. It is not different enough from *C. Walshii* to justify its setting apart as a genus. *Noicea chinensis* was the name given by the late Dr. Gray.

29. DORSATA, f. 45, 46 (Pl. 5), *Broderip*.—Ovata fulva radiatim costata, margine crenato; apice subcentrali; septo concavo, obliquo, ad latus profunde emarginato.—Having the nearly central apex of a Calyptræa, with the lobed and concave septum of a Crepidula.

ALPHABETICAL INDEX TO CALYPTRA.

- aberrans*, C.B. Ad., Z. P. 1863;
 not found.
aculeata, Brod. sp. 24, f. 45.
Adamsii, Rve.=cicatricosa.
alba, Martini, sp. 12, f. 10-15.
alveolata, A. Ad. sp. 16, f. 23.
araucana, Lesson; not found.
balanoides, Rve.=alba.
bullata, Rve. sp. 8, f. 18.
Byronensis, Gray; not found.
cancellata, Ad. and Rve. sp.
 15, f. 21, 22.
cepacea, Brod. sp. 9, f. 5, 6, 7,
 35, 36.
chlorina, Gld.; not identified.
cicatricosa, Rve. sp. 2, f. 3, 4.
cinerea, Rve.; not identified.
cornea, Brod.=cepacea.
corrugata, Brod. sp. 14, f. 42,
 43, 44.
cyathella, Rve.=cepacea.
depressa=cicatricosa.
diaphana, Rve.=alba.
dormitoria, Rve. sp. 3, f. 19,
 20, 53.
equestris, Linn. sp. 1, f. 1, 2.
hipponiciformis, Rve. sp. 20,
 f. 24, 25, 26.
Layardi, Rve. sp. 18, f. 48.
Martiniana, Rve.=alba.
ossea, Rve.=dormitoria.
papyracea, A. Ad. sp. 13, f.
 16, 17.
pileopsis, Quoy, sp. 19, f. 40,
 41.
planulata, C.B. Ad.=cepacea?
porosa, Rve. sp. 11, f. 51, 52.
radiosa, Gld.=hipponicifor-
 mis.
sacchari-meta, Rve. sp. 6, f.
 8, 9.
scabies, Rve.=tectum-sinense.
scutulum, Rve. sp. 22, f. 46, 47.
stallonia; not identified.
stella, Rve. sp. 10, f. 27.
stultorum, Rve. sp. 4, f. 29.
tectum-sinense, Chemn. sp.
 23, f. 30-34.
tongana, Quoy, sp. 7, f. 38, 39.
tortilis, Rve.=alba.
umbella; not identified.
umbo, Rve. sp. 21, f. 49, 50.
uncinata, Rve. sp. 5, f. 28.
vanikoroensis, Quoy, sp. 17
 f. 37.
varia, Brod.=cepacea.
varia, Rve. not Brod.=tec-
 tum-sinense.

ALPHABETICAL INDEX TO CRUCIBULUM.

- auriculatum*, *Chemn.* sp. 2, f. 7-14.
auriculatum, *Rve.* not *Chemn.* = *corrugatum*.
cinereum, *Gray* = *auriculatum*.
concameratum, *Rve.* sp. 6, f. 29.
corrugatum, *Carp.* sp. 8, f. 33, 36.
dentatum, *C. B. Ad.* = *scutellatum*.
extinctorium, *Lam.* sp. 11, f. 55-60.
ferrugineum, *Rve.* = *tenue*.
hispidum, *Brod.* = *auriculatum*.
imbricatum, *Brod.* = *pectinatum*.
imbricatum, *Sowb.* = *scutellatum*.
lignarium, *Brod.* sp. 3, f. 15-23.
lividum, *Rve.* = *extinctorium*.
longirostre, *Owen* = *equestre*.
maculatum, *Brod.* = *auriculatum*.
morbidum, *Rve.* = *extinctorium*.
pectinatum, *Carp.* sp. 7, f. 31, 32.
peziza, *Gray* = *auriculatum*.
radiatum, *Brod.* sp. 9, f. 37, 38.
rude, *Brod.* = *scutellatum*.
rugosum, *Desh.* = *lignarium*.
rugosum, *Lesson* = *scutellatum*.
scutellatum, *Gray*, sp. 1, f. 1-6.
serratum, *Brod.* sp. 5, f. 25, 26.
spectrum, *Rve.* = *lignarium*.
spinosum, *Sowb.* = *auriculatum*.
striatum, *Say*, sp. 10, f. 39, 40.
tenue, *Brod.* sp. 4, f. 24, 27, 28, 30.
trigonale, *Ad.* and *Rve.* = *lignarium*.
tubiferum, *Lesson* = *auriculatum*.
umbrella, *Desh.* = *scutellatum*.
verrucosum, *Rve.* sp. 12, f. 51, 52.
violaceum, *Carp.* = *corrugatum*.

ALPHABETICAL INDEX TO TROCHITA.

- alba*, *Donovan* = *sinensis*.
aspersa, *C. B. Ad.* sp. 2, f. 63, 64.
aurita, *Rve.* sp. 4, f. 42, 43.
calyptreiformis, *Lam.* sp. 10, f. 85, 86.
clypeolum, *Rve.* sp. 12, f. 89, 90.

- conica*, *Brod.* sp. 1, f. 61, 62.
corrugata, *Rve.* sp. 13, f. 91, 92.
fastigiata, *Gould.* sp. 6, f. 72, 73, 74.
fusca, *Carp.*=*poculum*.
helicoidea, *Sowb.* sp. 19, f. 53, 54.
lamellosa, *A. Ad.* sp. 16, f. 41.
lateralis, *Sowb.* sp. 9, f. 93, 94.
lichen, *Brod.* sp. 3, f. 65, 66.
laevigata, *Lam.*=*sinensis*.
laevigata, *Chemn.* = *mamillaris*.
maculata, *Quoy*, sp. 11, f. 87, 88.
magellanica, *Gray* ? = *clypeolum* ?
mamillaris, *Brod.* sp. 20, f. 69, 70, 71.
muricata, *Da Costa*=*sinensis*.
pellucida, *Rve.* sp. 8, f. 82.
peruviana, *Desh.*=*radians*.
pileus, *Lam.*=*spirata*.
poculum, *Rve.* sp. 7, f. 80-84.
radians, *Lamk.* sp. 14, f. 95, 96, 99.
regularis, *Rve.*=*mamillaris*.
sinensis, *Linn.* sp. 21, f. 75-79.
solida, *Rve.*=*mamillaris*.
sordida, *Brod.* sp. 17, f. 49, 50.
spinulosa, *Ch.*=*sinensis*.
spirata, *Forbes.* sp. 15, f. 97, 98.
subreflexa, *Carp.* sp. 5, f. 67, 68.
tomentosa, *Quoy*=*calyptæformis*.
unguis, *Brod.* sp. 18, f. 47, 48.
violascens, *Carp.* = *calyptæformis*.
vulgaris, *Phil.*=*sinensis*.

ALPHABETICAL INDEX TO CREPIDULA.

- aculeata*, *Gmel.* sp. 9, f. 124, 125.
Adolphæi, *Lesson*; not identified.
adpersa, *Dunk.* sp. 16, f. 126, 127.
adunca, *Sowb.* sp. 14, f. 15.
amygdalus, *Val.*=*onyx*.
aphysioides, *Rve.*=*onyx*.
arenata, *Brod.*=*fornicata*.
bilobata, *Gray*, sp. 6, f. 108.
calceolina, *Desh.*=*unguiformis*.
californica, *Nutt.*=*aculeata*.
candida, *Risso*=*unguiformis*.
capensis, *Quoy*; not identified.
cerithicola, *C. B. Ad.*=*onyx*.
chinensis, *Gray*, sp. 28, f. 152-154.
contorta, *Quoy*, sp. 21, f. 137, 138.
convexa, *Say*, sp. 11, f. 109, 110.
costata, *Desh.* sp. 13, f. 113, 114.
dilatata, *Lam.* sp. 1, f. 100, 101, 102.
dorsata, *Brod.* sp. 29, f. 45, 46.
echinus, *Brod.*=*aculeata*.
excavata, *Brod.* sp. 6, f. 119.
explanata, *Gould* = *navicelloides*.
exuviata, *Nutt.* sp. 23, f. 141, 142.
fimbriata, *Rve.*=*Lessoni*.
fissurata, *Sowb.* sp. 10, f. 151.
foliacea, *Brod.* sp. 3, f. 103, 106, 107.

- fornicata*, *Linn.* sp. 5, f. 118, 123.
garnotus, Ad.=adunca?
gemmacea, Val.=rugosa.
glauca, Say=fornicata.
goreensis, Ad.; not identified.
hepatica, *Desh.* sp. 19, f. 131, 132.
Holurthii, Parrey; not identified.
hystria, Brod.=aculeata.
immersa, Ad. and Rve.=porcellana.
incurva, *Brod.* sp. 20, f. 133-135.
intermedia, D'Orb.; not identified.
italica, Defr.=unguiformis.
lentiginosa, *Sowb.* sp. 18, f. 130, 130*.
Lessoni, *Brod.* sp. 25, f. 144, 145, 146.
lingulata, Gould=exuviata?
lirata, Rve.=incurva.
marginalis, *Brod.* sp. 12, f. 111.
Moulinsii, Mich.=aplysioides=onyx.
nautiloides, *Lesson*, sp. 2, f. 104, 105.
navicelloides? sp. 24, f. 143.
nivea, C. B. Ad.=exuviata.
nummaria, Gould=navicelloides.
onyx, *Sowb.* sp. 4, f. 112.
osculans, C. B. Ad.=navicelloides.
pallida, Brod.=dilatata.
patagonica, D'Orb.=dilatata?
patula, *Desh.*; not identified.
perforans?=exuviata?
peruviana?=dilatata, Lam.
plana, Ad. and Rve.=Walshii.
plana, Say=unguiformis.
porcellana, *Linn.* sp. 7, f. 120, 121, 122.
rostrata, C. B. Ad. sp. 15, f. 116, 117.
rostriformis, Gld.=adunca?
rugosa, Nuttall?=onyx.
rugulosa, Brod.=foliacea.
Rusei, Dak.; not identified.
scabies, Rve.=Walshii.
sinuosa, Turt.=unguiformis.
sitchana, *Midd.* sp. 17, f. 128, 129.
solida, Hinds=uncata.
squama, *Brod.* sp. 26, f. 147, 148.
strigata, Brod.=foliacea.
subspirata, Bl.; not identified.
trochiformis=spirata.
uncata, Mnke.=adunca.
unguiformis, *Lamk.* sp. 22, f. 139, 140.
Walshii, *Herm.* sp. 27, f. 149, 150.

MONOGRAPH OF THE GENUS

NATICA.

Testa plerumque solida globosa, sæpissime umbilicata; spira brevi, frequenter vix exserta, anfractibus paucis; umbilico aut amplo, aperto, aut callo spirali partim impleto, aut callo columellari tecto; apertura plus minusve semilunari. Operculum sæpissime corneum tenue paucispirale, interdum testaceum.—The Naticæ are generally globose and solid. The most solid and compact are those which, like *N. canrena*, have a spiral callus inside the umbilicus, and a large proportion of these have an operculum with a shelly outer surface. Others, like *N. didyma* and its allies, have the callus of the columella spread into a more or less rounded pad, covering a large part or the whole of the umbilicus, and have a thin horny operculum. A few species are quite thin and simple, and without any umbilicus. The only division that could be made would be between those species with a shelly, and those with a horny operculum, but these are not always known, and do not correspond with other divisional characters. The shells of Naticæ are mostly smooth, some even polished, being more or less wrapped up in the operculigerous lobes. The divisions of the genus in the work of the late Messrs. Adams are:

1. NATICA. With spiral callus in umbilicus, and shelly operculum. Ex. *N. canrena*.
2. LUNATIA. With simple umbilicus, or none. Operc. generally horny. Ex. *L. catena*.
3. NEOCRITA. Flat-spined, with lobed callus. Operc. horny. Ex. *N. olla*.

4. AMPULLINA. *A. fluctuata.*

5. RUMA. Small spire, large and wide mouth. Operc. horny, narrow. Ex. *R. mamillaris* and *Sebæ*.

6. MAMMA. No characters applicable to *all* the species enumerated. Ex. *M. Draparnaudi* and *Caribæa*.

Species.

Operculum thin, horny.

1. OLLA, f. 1, *Marcel de Serres*.—Globosa, solida, superne glauco-fusca, infra alba; spira brevi, anfractibus subrotundis umbilico lato, profundo, callo columellari simplici fulvo, dimidiatim umbilicum tegenti; apertura mediocri, labio externo obtuse rotundo.—The most globose shell of the group to which it belongs. The callus is swelled on the body-whorl, and projects in a round form so as to cover about half the umbilicus. It is simple. The *N. glaucina* of Lamarck is this shell, but that of Linnæus belongs to another set.

2. CAMPECHENSIS, f. 7, *Recluz*.—Præcedenti similis, sed depressa, lateraliter expansa, callo columellari rotundo, umbilicum fere tegenti.—This may be considered the typical form of the group to which it belongs. It is much depressed, and the umbilicus is nearly covered in by the tumid and expanded callus.

3. RECLUZIANA, f. 6, *Deshayes*.—Conica; spira exserta, aliter *N. Campechensi* affinis, callo magis linguæformi; anfractibus prope suturam fusco fasciatis.—With the essential characters of the group, this species has a conically elevated form, produced by lateral compression.

4. BACONI, f. 2, *Reeve*.—Quam *N. olla* magis obliqua, anfractibus superne depressis, callo umbilicali simplici sed planulatim concavo.—Much more oblique and depressed than the preceding. It has the umbilical callus undivided, but flattened and depressed.

5. GLAUCA, f. 5, *Humboldt*.—*Campechensi* similis, sed oblique valide depressa, apertura lateraliter expansa callo umbilicali parvo, producto, linguæformi, columella obliqua.—Very obliquely depressed, with a small tongue-shaped, dark callus projected partly over the umbilicus, and a very oblique, thin columella.

7. DIDYMA, f. 4, 14, *Bolt.*—*N. olla* et *N. Campechensi* similis, sed callo umbilicali per sulcum divisio.—*Glaucina* of Lamarck not being the *glaucina* of Linnæus, this species has been divided into several, under other names, by Recluz, &c. These are: *Chemnitzii*, Recluz (*glaucina*, Lamarck, not Linnæus), our f. 4; *Petiveriana*, Recluz, with the callus a little less produced; and *Lamarckiana*, Deshayes, our f. 14.—These all differ from *N. olla* and *campechensis* in having the projecting umbilical callus divided by a groove. They cannot be fairly separated from each other, and we follow the arrangement of the British Museum in applying to them the above resuscitated name.

8. PROBLEMATICA, f. 54, *Reeve.*—Quam *N. didyma* magis oblique elevata; umbilico elongato; callo umbilicali angusto, divisio.—The greater obliquity in form and the columnar elevation of the callus may perhaps justify the separation of this species.

9. HERCULEA, f. 3, *Jonas.*—Magna globosa pallide fulva; spira exsertiuscula, anfractibus ad suturam angulatis, tum declivibus; apertura magna, labio externo superne producto, sinuato; columella arcuata, lata, callosa, partim super umbilicum producta; umbilico lato.—A large shell, differing from the preceding group in form and in the callus, which is scarcely extended into a lobe over the umbilicus. The whorls are angular near the suture, and then slope outwards.

10. INCEI, f. 63, 64 (young), 101–103, *Phil.*—Oblique depressa, subangulata, subtus albida, superne castanea aut flavida, spira depresso-conica, callo rotundo tumido, umbilicum replenti, ad suturam tumido.—Of a depressed, rather angular form, with a large callus at the suture, sometimes showing above the edge of the outer lip, and an umbilical callus completely filling up the wide cavity.

11. CLAVATA, f. 27, 167, *Sowerby.*—Oblique ovata, albida; umbilico magno, profundo, callo umbilicali magno claviformi, rotundo, planato interne spiraliter continuo.—Differing from *N. Incei* in the more obliquely oval form, and in having the button-shaped umbilical callus separated from the body-whorl so as to show its spiral origin in the cavity.

12. DRAPARNAUDI, f. 84, *Recluz.*—Globoso-subacuminata, obliqua, anfractibus declivibus, anfractibus aurantiis, ad

suturam albifasciatis, umbilico magno, callo spirali angusto; apertura semilunari, albida, labio interno late calloso et medio calli lobato.—In form and colour resembling *N. aurantia*, but differing in having a spiral callus.

13. COLUMNARIS, f. 37, *Recluz*.—Alba, nitens, oblique depressa et lateraliter compressa; umbilico latissimo, callo spirali rotundo, apertura obliqua, labio interno superne calloso, ad umbilicum prominente lobato.—A white oblique shell with wide umbilicus and thick spiral callus.

14. ORIENTALIS, f. 65, 66, *Gmelin*.—Oblique globosa, alba vel castanea spira acutiuscula, ultimo anfractu ad suturam depresso crenulato, subito ad aperturam expanso; umbilico magno, intus spiraliter univaricoso, columella rectiuscula ad varicem umbilicalem callosa.—Close to the suture the last whorl is depressed, almost channelled, and crenulated at the edge.

15. ALBUMEN, f. 57, *Lamarck*.—Lata, aurantio-fusca, lateraliter compressa, umbilico amplissimo, prope marginem bicarinato, callo spirali latissimo crasso; apertura semilunata, magna; labio interno calloso ad umbilicum latissime lobato.—Remarkable for an oblique compression from back to front, and the widest umbilicus with the thickest and broadest spiral callus to be found in any species.

16. HEROS, f. 8, *Say*.—*Herculeæ* similis, magis conica, tenuis et elevata, columella rectiuscula, angusta, vix callosa, labio interno tenui.—Resembling *N. herculea* in general form, but more upright and with a more conical spire. The columella is straight and without the usual callus. These differences are only somewhat exaggerated in *N. duplicata* of Say, which cannot be regarded as distinct.

17. POMUM, f. 19, *Smith*.—Globoso-subturbinata, tenuis, superne castaneo-purpurea, epidermide fusca induta; spira parva, anfractibus rotundis, ultimo magno, inflato, infra subacuminato; labio externo tenui, columella tenuiter et simplice reflexa, umbilico obliquo, angusto.—Of a light thin texture nearly resembling an *Ampullaria*. The columella is thinly reflected over the body-whorl above, and forms a simple sinuated edge over the umbilicus, which is narrow and oblique; mouth dull chestnut, the same colour showing through the light brown epidermis.

18. PAPHURACEA, f. 149, *Sowerby*.—Globosa, tenuissima, *N. pomum* similis, magis rotunda, spira exserta, anfractibus rotundis; columella sinuatim subcallosa; colore pallide fulvo obscure bifasciato.—This shell bears a much nearer resemblance to *Helix pomum* than the preceding.

19. FLAVA, f. 125, *Gould*.—Globoso-subturbinata, tenuis, flavida, spira brevissima, ultimo depresso, apertura magna, umbilico parvo, columella infra rectiuscula, supra medium callosa.—Simple in form and light in structure, with a very small callus on the upper part of the rather straight columella, covering part of the umbilicus.

20. CANRENA, f. 24, operc. f. 169, *Linnaeus*.—Solida, globosa, aureo quadrefasciata ad interstitia arcuatim castaneo maculata; spira brevi, umbilico magno lato, spiralliter valide univariicoso, anfractu ultimo rapide versus aperturam expanso; apertura magna, intus purpurea, semirotunda; columella rectiuscula medio ad costam umbilicalem semirotunde callosa; operculo solido semispirali multicostato.—Distinguished by bands of golden brown, with white interstices spotted with dark bent markings. The lower outline of the body-whorl is hollowed. Operculum half spiral, thickly ribbed.

21. LINEATA, f. 38, *Lamarck*.—Oblique globosa, albida, lineis rubris undulatis, infra terminantibus strigata; apertura infra expansa, intus purpurea, umbilico lato, varice spirali lato.—Delicately striped with thin undulating red lines, with a broad spiral varix in the umbilicus; aperture obliquely pyriform, purple within.

22. ELENÆ, f. 150, *Recluz*.—*Lineata* similis, magis obliqua, lineis quadrefasciatis undulatis; varice umbilicali latissimo, depresso.—More oblique than *lineata*, with the lines four-waved, and the umbilical varix very broad and depressed.

23. ZEBRA, f. 92, *Lamarck*.—Globosa, fulva, striis acute et arcuatim undulatis seriatim picta; spira acuta anfractibus declivibus; umbilico magno, callo spirali valido labio interno tenuiusculo, apertura oblique declivi.—The stripes are beautifully undulated in points and curves.

24. ALA-PAPILIONIS, f. 46, *Chemnitz*.—*Canrenæ* forma similis, leviter concentricè plicata fusco-aurata; interstitiis fasciarum albis, tessellatim maculatis, varice umbilicali obliquo, apertura oblique semicirculari, fauce purpurea.—Much re-

sembling *N. canrena*, but slightly plaited and with oblong markings on the white interstices of the bands.

25. BRODERIPIANA, f. 91, *Recluz.*—Globoso-subpyramidata, concentric lirata, fulva, fasciis tribus albis castaneo maculatis picta, infra alba; umbilico mediocri, callo spirali oblique compresso, columella superne callosa, medio lobata.—Across the body of the shell are three white bands, each painted with a series of large chestnut spots.

26. SULCATA, f. 33, 34, *Born.*—Globosa, plicis concentricis et lineis spiralibus puncturatis cancellata; albida, vel castaneo bifasciatim variegata; umbilico lato, callo spirali angusto.—The cross lines pass over the ribs, and are punctured in the interstices.

27. RUFa, f. 42, *Born.*—Globosa, solida, subobliqua, ultimo anfractu ad aperturam expanso, superne et infra medium castaneo bifasciato; apertura magna, columella oblique recta, ad ultimum anfractum reflexa, callosa; umbilico mediocri callo spirali angustiusculo.—The upper part of the whorls of this globose shell is nearly covered with two broad, defined bands.

28. FULGURANS, f. 123, *Recluz.*—Oblique subglobosa, pallide fulva, maculis fusco-nigrescentibus picta; spira subpyramidata, anfractibus declivibus; umbilico parviusculo callo spirali mediocri.—Marked with camp-like angles.

29. COLLARIA, f. 121, *Lamarck.*—Globosa fulva, undulatim strigata, prope suturam alba, fusco sagittata; spira subproducta, anfractibus convexis; umbilico parvo; callo spirali deorsu; apertura intus purpureo suffusa.—Remarkable for the white band at the suture, with arrowhead markings.

30. COLLEI, f. 142, 143, 144, *Recluz.*—Oblique subglobosa, lateraliter compressa, ad suturam obscure plicata, flammis castaneis seriatim picta, apertura oblique declivi, intus purpurea, callo spirali et umbilico majusculis.—This pretty little oblique species is variously marked with rows of flame-marks in alternately reversed directions.

31. MACULATA, f. 21, 22, *Chemnitz.*—Globosa, solida, pallide fulva, castaneo punctata et interdum triseriatim maculata; spira brevi, anfractibus superne depressis subangulatis; umbilico magno, callositate spirali tumida intranti, apertura

semilunata, intus purpurea.—In spite of the preliminary adverb attached to this name by Chemnitz, there seems to be no valid reason for dropping it in favour of Lamarck's later name, *millepunctata*, which Reeve applied to the variety which is only spotted all over, and not banded with rows of blotches.

32. SPADICEA, f. 20, *Gmelin*.—Magna, globosa, crassa, medio anfractuum castanea, albo bifasciata; spira brevi anfractibus ad suturam depressis et crenulatis, umbilico angustiusculo, callo spirali depresso, lato.—The principal part of the shell is brown or delicately fawn-coloured, with a white band at the suture, and one dividing the brown. The spiral callus is broad and depressed.

33. ADANSONI, f. 94, *Reeve*.—*N. maculata* simillima, sed angustior.—In colouring and substance resembling *N. maculata* (the blotched var.), having also the dark purple tint in the inner part of the mouth, but much narrower, with a more elevated spire. It is '*Le Fanel*' of Adanson; possibly a variety of the above.

34. MACULOSA, f. 13, *Lamarck*.—Globoso-subpyramidata, anfractibus superne declivibus, purpureo punctatis, infra subinflatis immaculatis, callo spirali umbilicali angusto.—Spire produced, whorls spotted and shelving above, becoming wider and clearer towards the lower part.

35. PELLIS-TIGRINA, f. 83, *Chemnitz*.—Anguste globosa fulva, punctis magnis purpureis ornata; spira elevata, anfractibus superne ad suturam depressis, tum tumidis infra contractis umbilico latiusculo, varice spirali umbilicali angusto.—Much like *N. Adansoni* in form, but not so narrow. It is painted with large round purplish spots; the spiral umbilical varix is narrow.

36. MAHEENSIS, f. 40, *Recluz*.—Globosa, alba, interruptim castaneo bifasciata; ultimo anfractu ad suturam infraque leviter plicato; umbilico brevi rotundo, callo spirali rotundo ad terminum deflecto.—The two chestnut bands are neatly interrupted in lines, and the umbilical callus is placed at the lower part of the cavity.

37. GUALTERIANA, f. 152, *Petit*.—Oblique subovata angusta tenuis, linearum rubrarum fasciis tribus ornata; spira

elevata; umbilico angusto, callo umbilicali fere tecto.—The three bands of linear markings call *N. makeensis* to mind, although the form is very different, and the narrow umbilicus nearly filled with the columellar callus.

38. MAROCHIENSIS, f. 62, 108, 109, 151, *Gmelin*.—Globosa solida griseo-alba, medio anfractûs ultimi late unifasciato; ætate juniore variat pallida, punctis sagittiformibus vel arcuatis seriatim depositis, anfractibus prope suturam obscure crenulatis.—From the large plain-banded shell named *unifasciatus* by Lamarck the changes are gradual towards the lighter grey banded varieties with arrow-headed or curved spots. The smaller varieties are slightly crenulated at the suture, and have a slightly more pyramidal form.

39. CATENATA, f. 106, 107, *Philippi*.—Quam *N. marochiensis* magis superne pyramidata, spira exserta anfractibus declivibus, callo spirali in umbilicum deorsum.—More narrow and pointed than the above-named, with the spiral callus laid lower down in the umbilicus. The markings on the grey bands are generally bright and lively.

40. LOCELLUS, f. 155, *Philippi*.—Globosa, medio anfractuum late griseo fasciata, fascia maculis angulatis marginata; umbilico parvo, callo spirali fere obtecto; apice acuto, anfractibus convexis.—Not having seen this shell since 1855, I cannot be quite sure about the spiral callus.

41. IANTHOSTOMA, f. 52, *Deshayes*.—Globosa, fulva, obscure griseo fasciata; spira subproducta, anfractibus superne depressis, tum subangulatis; umbilico angusto callo spirali magno, columella ad umbilicum callosa. Apertura intus purpurascens.—A greyish-brown shell resembling *N. monilifera*, but having the umbilicus and callus of the present section.

42. RAPULUM, f. 61, *Reeve*.—Globosa, albida; spira subpyramidata anfractibus subdeclivibus; umbilico parvo, callo spirali rotundo, brevi.—The umbilicus in this nearly white species is small, and the spiral callus nearly fills it.

43. VITTATA, f. 115, 116, *Lamarck*.—Quam *N. collaria* magis depressa maculis medio rariusculis supra infraque fasciatim dispositis, callo umbilicali parvo, mediano.—Resembling *N. collaria*, but more depressly globose, with the

markings more scattered. The spiral callus is very narrow, and placed higher up in the umbilicus.

44. NOTATA, f. 168, *Sowerby*.—Parva, solida fere alba, ovato-subglobosa, lineis tribus castaneis tenuibus cincta, strigillis flexuosis supra infraque longitudinaliter notatis, spira brevi, anfractibus convexis ad suturam plicatis; columella recta, angusta, ad umbilicum inconspicue lobata, callo spirali mediano, subdepresso.—Very neatly ornamented with linear spirals and cross flexuous markings.

45. DILWYNIANA, f. 166, *Recluz?*—Obliqua, subcompressa, ad suturam inconspicue plicata fulva, albo fasciata, fasciis maculis castaneis articulatis; callo spirali crasso, columella ad umbilicum lobata.—More oblique and compressed in front than *N. Traillii*; in these respects differing from *N. canrena*, of which the specimens might be taken for miniatures.

46. UNIMACULATA, f. 105, *Reeve*.—Ovato-acuminata, fumoso-fusca; spira producta acuta, anfractibus declivibus, umbilico angustiusculo, callo spirali valido, columella flexuosa, superne late callosa, medio lobata; lobo castaneo unimaculato.—With a bright spot of colour on the columellar pad of the spiral callus.

47. CUMINGIANA, f. 31, *Recluz*.—Globoso-subpyramidata, latissime castaneo fasciata; spira subacuminata, anfractibus declivibus; apertura semilunari, castaneo marginata, columella medio lobata, umbilico medio reflexo, lobato, intus subplanato.—A beautiful chestnut-banded species, with a lobe on the columella, but no spiral callus in the umbilicus.

48. POWISIANA, f. 32, *Recluz*.—Globosa, *N. Cumingianae* simillima sed brevior; umbilico latissimo, callo spirali tumidissimo.—This species and the preceding are so much alike, that the difference, which chiefly consists in the prominent spiral callus of the former, is hardly at first perceived.

49. CHINENSIS, f. 9, *Lamarck*.—Oblique subovata, pallida, maculis quadratis triseriatim dispositis picta, spira brevi, acuta, anfractibus rapide expansis, ad suturam depressis, plicatis; apertura umbilico calloque spirali maximis; fauce purpurea.—Distinguished by the rapid increase of the whorls, the largeness of the aperture, the umbilicus and its callus, and the rows of square bright spots.

50. *PICTA*, f. 120, *Recluz*.—*N. zelandicæ* similis; sed maculis sagittatis minoribus; labio interno supra calloso infra acute diviso; apertura intus purpurea.—There is a sharp notch between the upper callus and the umbilical lobe, which hides much of the cavity. The marks are small and arrow-headed.

51. *RUFILABRIS*, f. 127, *Reeve*.—Globosa pallida cinereo fasciata, castaneo obscure variegata; spira breviscula, anfractibus convexis, callo umbilicali tumido, rubro, umbilicum fere tegenti.—A globose shell, with red columellar callus nearly filling the umbilicus.

52. *TRISERIATA*, f. 138, *Say*.—Globosa, sordide livida, obscure trifasciata, spira paulo elevata, anfractibus convexiusculis; columella alba, subæqualiter tumida, umbilicum parvum partim tegenti; apertura pyriformi, interne vivide castaneo trifasciata.—Of a dull livid colour, generally showing its three chestnut bands most brightly in the mouth.

53. *FORTUNEI*, f. 153, *Reeve*.—Subglobosa alta livida; tenuis; spira elevata, anfractibus rotundis, umbilico angusto, callo spirali fere umbilicum implenti; columella infra arcuata.—The very narrow umbilicus is nearly filled by the small spiral callus seen behind the columella.

54. *APERTA*, (no fig.) *Sowerby*.—Globosa tenuis, superne livida, infra livide fulva; spira brevi, anfractibus albo-marginatis, ultimo inflato, apertura intus castanea, superne subdepressa, infra expansa; columella superne tenui, infra umbilicum anguste callosa, cum callo spirali parvo umbilicali confluenti; umbilico angustissimo superne angulato.—The peculiarity of this species was not observed till it became too late to give a figure. The umbilicus is extremely narrow, ending in a notch above; and in it is a small spiral callus, which is obliquely confluent with the lower part of the thickened columella.

55. *INTRICATA*, f. 114 (var. *proxima*, f. 111), *Donovan*.—Subovato-globosa livida, fasciis pallidis castaneo minute variegatis picta; umbilico lato, castaneo, callis columellaribus duobus spiralibus tenuibus, columella tenui, bilobata.—In general characters resembling *N. Alderi*, but with a broad umbilicus, in which are two narrow spiral calli.

56. FORATA, f. 96, *Reeve*.—Globosa fulva punctata, fasciis albis castaneo articulatis, et maculis maximis paucis ad suturam picta; spira brevi, anfractibus rotundis, umbilico castaneo maximo, callo diviso tenui spiraliter costato; columella superne crassa lata, infra attenuata.—Differing from *N. intricata* in the roundness of the whorls, the spire of the latter being more obliquely conical.

57. ZELANDICA, f. 119, *Quoy*.—Globoso-subpyramidata, superne fulva, maculis castaneis arcuatis quinquieseriatim dispositis, spira subacuminata, anfractibus declivibus, apertura obliqua, intus castaneo suffusa, umbilico mediocri, columella lobata, callo umbilicali crasso.—The chestnut spots on the white lines are curved.

58. MAMILLA, f. 28, 29, 30, *Linnaeus*.—Alba, nitens, solida, pyramidata; spira elevata, anfractibus apicalibus brevibus, ultimo magno declivi; apertura semilunari, labio externo superne elevato, labio columellari expanso, callo infra lobato umbilicum tegenti.—A polished white shell, with a very broadly callous inner lip, the lower part of which forms a lobe nearly or entirely covering the umbilicus. *N. albula* (f. 30), Recluz, *N. pyriformis* (f. 28), Recluz, and *N. intermedia*, Recluz, can only be regarded as more or less widened or pyramidal varieties.

59. CANDIDISSIMA, f. 26, *Le Guillou*.—Alba, ponderosa, globoso-subtrigona; spira brevissima, depresso-conica, tum tumida, infra expansa, callo umbilicali superne lato tumidissimo, columella rotunda, callo spirali umbilicum implenti.—White, thick, the last whorl increasing largely in breadth, and the narrow umbilicus partly filled with a rounded spiral callus.

60. AURANTIA, f. 15, 16, *Lamarck*.—Solida, subpyramidata, *N. mamillæ* similis, sed vivide aurantia sed flavida.—The orange colour in one variety and the lemon in another contrast beautifully with the brilliant white of the columellar callosity, but hardly seem to justify the separation of this from *N. mamilla*, except as a matter of convenience.

61. DEIDOSA, f. 43, *Reeve*.—Depresso-globosa, crassa, vivide aurantia; spira brevissima, anfractibus depressis tum tumidis, umbilico maximo, partim obtecto, columella latissima callosa, callo ad umbilicum rotundo; apertura anguste elon-

gata, superne ad suturam depressa.—Resembling *N. aurantia* in colour, but broad and depressed, and with the umbilicus so wide that the umbilical callus, although extremely wide and tumid, only covers two-thirds of it.

62. DUBIA, f. 56, *Recluz*.—Globosa stramineo-alba crassa; spira parva, ad suturam tumida, anfractu ultimo infra marginato, columella latissime callosa umbilicum tegenti.—More globose than any of the *mamilla* group, with a broad columellar callus partly covering the umbilicus, but not its thickened broad border.

63. PANAMENSIS, f. 18, *Recluz*.—Alba, globoso-subpyramidata, *N. candidissimæ* similis, sed magis elevata, superne angustior, umbilico latiori, callo spirali inconspicuo.—Like *N. candidissima* in form, but more elevated and straight-sided towards the spine; the umbilicus open, with a very depressed spiral callus.

64. VAVAOSI, f. 122, *Le Guillou*.—Alba pyramidata, *N. mamillæ* similis, sed umbilico semiobtecto, callo columellari ad umbilicum oblique contracto.—An extraneous deposit sometimes appears on the upper whorls, which is not to be mistaken for natural colour. The shell is of the *mamilla* group, but the front callus is contracted obliquely towards the columella at the umbilicus so as to cover only half of it.

65. PYRAMIS, f. 35, *Reeve*.—Alba pyramidata, spira elevata, anfractibus declivibus, umbilico parvo, callo columellari ad ultimum anfractum crasso; apertura subtrigona.—The columellar callus leaves the greater part of the small umbilicus open.

66. FLEMINGIANA, f. 99, *Recluz*.—Alba, nitens, crassa, oblique pyramidata; spira elevata, anfractibus convexiusculis; apertura brevi, superne oblique depressa, columella ad anfractum ultimum late callosa, ad umbilicum leviter lobata, infra oblique contracta, umbilico mediocri, semiobtecto. As in *N. Vavaosi* the umbilicus is only partly covered by the slight oblique lobe of the columellar callus.

67. MAMILLARIS, f. 68, *Lamarck*.—Pyramidata, fumoso-fusca; spira elevata, anfractibus declivibus; umbilico elongato, columella ad umbilicum lobata, callo spirali lato.—A thick pyramidal shell with a prominent spiral callus.

68. UBER, f. 51, *Valenciennes*.—Alba, subpyramidata; spira acuminata, anfractibus declivibus; umbilico parvo, callo spirali angusto, columella ad anfractum expansa, callosa.—In this whitish pyramidal species the spiral callus is rather small, and lies close behind the columellar lobe.

69. PHYTELEPAS, f. 58, *Reeve*.—Globosa, subviride fulva; spira brevi, anfractibus subdeclivibus; umbilico parvo, callo columellari brevi, columella superne expansa, callosa.—Globose, with short umbilicus partly filled up.

70. MELASTOMA, f. 100, *Swainson*.—Globoso-subpyramidata, cinerea, spira pyramidata, anfractibus convexo-declivibus, versus suturam lividis, apertura intus purpurea, nigricanti, subtrigona, columella late callosa, sanguinea, umbilicum tegenti.—Shaped like the *mamilla* group, of a livid colour, with a blackish-purple mouth, and the columellar callus spread over a somewhat narrower umbilicus.

71. PERSPICUA, 70, *Recluz*.—Violaceo-alba, obscure fasciata, subpyramidata, spira elevata, anfractibus declivibus; umbilico lato elevato castaneo; columella flexuosa, lobata, callo spirali depresso.—A pyramidal species of a delicate lilac-white colour, excepting at the umbilicus, which, with the columella, is deep chestnut.

72. EFFUSA, f. 82, *Swainson*.—Alba, semipellucida, ovato-pyramidata, spira elevata, acuminata, anfractibus declivibus, ad suturam fascia opaca flavida cincta; umbilico lato, elevato, callo spirali depresso, lato; apertura lata, infra effusa, columella superne ad anfractum expansa, callosa, medio in lobum elongatum expansa.—Resembling *N. perspicua* in form, but semipellucid white, with opaque band at the suture.

73. INTEMERATA, f. 44, *Philippi*.—Quam *N. effusa* brevior, umbilico lato, brevi, columella ad umbilicum magis valide lobata.—Shorter, more globose and tumid than *N. effusa*.

74. PLUMBEA, f. 69, *Lamarck*.—Pyramidata, livida; spira elevata acuminata, anfractibus ad suturam subcanaliculatis tum declivibus; apertura brevi, columella ad ultimum anfractum callosa, ad umbilicum anguste lobata, umbilico angusto.—Lead-coloured and very pyramidal, with narrow umbilicus, and columellar callus with a small lobe reflected over it.

75. STRANGEI, f. 80, *Reeve*.—Globoso-subpyramidata, cinerea, sutura aureo marginata; spira subacuminata, anfractibus

vix convexis; umbilico lato, subsulcato, labio interno superne incrassato, infra vix lobato; apertura purpurea, aureo marginata, pyriformi.—In form a little more pyramidal than the British *N. sordida*, of a dark ashy colour, with the mouth dark purple and gold-edged, and the suture and columella edged with gold.

76. LEUCOPHÆA, f. 60, *Reeve*.—Oblique globosa, fusco-plumbea, spira breviuscula, anfractu ultimo infra inflato; apertura magna, infra expansa, labio columellari albo, superne expanso calloso ad umbilicum semitunde lobato, margine aurantio, umbilico magno.—Of a dull leaden-brown colour, with a columellar lip, which is broad and callous on and below the body-whorl, and lobed at the umbilicus. It is white, with an orange-red margin.

77. SOLIDA, f. 81, *Blainville*.—Crassa rotunda castanea spira depressa, pyramidata; apertura castaneo marginata intus cinerea, callo umbilicali subtrigono, latissimo, castaneo nigricanti umbilicum tegenti.—A round, depressed, chestnut-coloured species, with a very dark, broad, three-cornered umbilical callus, covering a wide umbilicus.

78. CONICA, f. 25, *Lamarck*.—Pyriformis pallide fulva griseo late fasciata; spira elevata, anfractibus declivibus, ad suturam albo fasciatis, columella superne expansa et tumida, aurantio-nigrescenti, ad umbilicum leviter lobata, umbilico parvo, callo spirali angustissimo.—The most pyramidal of all the species, differing from the *mamilla* group in having a spiral callus, although a small one.

79. USTULATA, f. 112, *Sowerby*.—Alba, pyramidata, politissima, spira elevata, anfractibus convexiusculis, umbilico brevi castaneo, apertura brevi, labio interno superne ad anfractum expanso, medio tumide lobato, macula magna ovata picto.—Resembling *N. conica*, but shorter, with the whorls more convex. No visible spiral callus, but a columellar pad over the narrow umbilicus, with a large brown spot upon it.

80. JUKESII, f. 55, *Reeve*.—Alba nitens, subquadratum globosa; spira brevissima, anfractibus superne depressis, tumidius; umbilico magno, callo columellari ad ultimum anfractum lato, crasso, infra versus columellam oblique lobato et contracto.—The whorls are somewhat tumid above and below, and the large umbilicus is two-thirds uncovered.

81. RAVIDA, f. 53, *Souleyet*.—Globosa lutea; spira brevi, subpyramidata; apertura semilunari, labio interno latissime expanso et calloso dimidiatim umbilicum tegenti.—A round, onion-shaped shell, with small though pyramidal spire. The wide callus is almost truncated diagonally across the upper part of the umbilicus.

82. PORCELLANA, f. 126, *D'Orbigny*.—Ovato-pyramidata, pallide grisea, ad suturam et infra albo fasciata; columella conspicue et late callosa, lobo umbilicum angustum partim tegenti.—The main part of this shell is pellucid grey, but at the suture and on the lowest part of the last whorl there are opaque white bands.

83. CARIBBÆA, f. 165, *Philippi*.—Ovato-oblonga grisea, ad suturam albifasciata; spira conica, producta; apertura pyriformi, columella callosa simplici, umbilico angusto.—Smaller in size, but of similar form to *N. Gallapagosa*; of a violet-grey colour, with sutural white band; columellar callus spread narrowly over body-whorl, and covering very little of the narrow umbilicus.

84. GALLAPAGOSA, f. 95, *Recluz*.—Ovato-oblonga grisea castaneo tincta; spira brevi conica, anfractibus ad suturam unifasciatis, valde declivibus; umbilico elongato; apertura castanea elongata, columella alba, callo umbilicali albo angusto.—Of the same texture and colour as in the *didyma* and *olla* groups, but narrow and pointed, with a nearly upright, narrow umbilical callus.

85. FUSCA, f. 104, *Carpenter*.—A larger shell than the preceding, with a less defined band at the suture.

86. VIOLACEA, f. 11, *Sowerby*.—Globoso-subpyramidata, solida, pallida, maculis subquadratis castaneis quinquefarîam tessellata; ultimo anfractu supra aperturam subangustato elevato; columella ad umbilicum late callosa purpurea, umbilico angusto, fere clauso.—The five rows of spots are more or less square, so as to have a tessellated appearance. The columellar callus is long and thick, and coloured with purple.

87. SEMISULCATA, f. 59, *Gray*.—Parva alba oblique subquadrata; spira brevi, anfractibus ad suturam tumidis, tum spiralliter tenuisulcatis; apertura subtrigona, columella subtortua, medio lobata, umbilico latiusculo.—An open-mouthed

white species, with a slightly tumid ridge at the suture, beneath which it is slightly grooved.

88. CORA, f. 136, *D'Orbigny*.—Flavida pyramidata solida; spira exserta, ultimo anfractu versus suturam tumido medio vix contracto, infra latiusculo; apertura breviuscula, umbilico angusto, labio interno ad anfractum ultimum et ad columellam tumido.—Pyramidal, swollen at the suture, then contracted and swollen again below; umbilicus narrow, columella swollen on the body-whorl and behind the columella nearly down to the lower end.

89. GLABELLA, f. 159, *Reeve*.—Parva livida pyramidata; spira elevata, acuta, anfractibus declivibus, ad suturam albo marginatis; apertura parva pyramidata, margine crasso, umbilico parvo, columella ad umbilicum et supra callosa, fusca.—A curious little pyramidal species of a grey colour, with a white margin at the suture of the whorls.

90. FRANCISCA, f. 162, *Recluz*.—*N. glabellæ* similis, haud tantum pyramidata, supra infraque alba, castaneo virgata marginata.

91. RAYNAUDIANA, f. 88, *Recluz*.—Globoso-subpyramidata, fulva, maculis flammisque castaneis fasciatim variegata; spira paulo elevata, anfractibus declivibus labio externo crassiusculo, callo columnari dimidiatim umbilicum tegenti.—A solid shell, characteristically marked with rather red chestnut spots and flames, partly interrupted by whitish bands. Some specimens are much more globose than the one figured.

92. SAGRAIANA, f. 117, *D'Orbigny*.—Globoso-subpyramidata subcinerea, dense strigillis zebraformibus lineata; spira brevi, conica, labio late calloso, subpurpureo umbilicum tegenti.—A pretty little shell closely zebra-marked. The umbilicus is covered by a dark columellar pad.

93. NITIDA, f. 118, *Donovan*.—According to Reeve, a shell quite distinct from the following; but its identification with Donovan's *N. nitida* is doubtful.—Seas of Europe.

94. ALDERI, f. 113, *Forbes*.—Solidiuscula, *N. nitidæ* forma similis, grisea fusco obscure et irregulariter variegata; spira haud tantum elevata, umbilico castaneo, magis operto, columella lata, crassa, apertura brevi.—Mr. Hanley figured this shell as the *N. glaucina* of Linnæus, in which he was

probably correct; but this being a matter of uncertainty, it is perhaps best to allow Lamarek's generally adopted identification to stand. Donovan's *N. nitida* seems to be the Mediterranean shell (our fig. 118); and the present species was renamed because it did not appear to be rightly identified with Donovan's shell.

95. MACILENTA, f. 154, *Philippi*.—Pyramidata, maculis sagittatis inter fascias fuscas variegata, umbilico angusto, callo columellari fusco, infra oblique attenuato; apertura castanea.

96. JAMAICENSIS, f. 110, *C. B. Ad.*—Oblique subovata, livida, flammis undulatis ornata, callo columellari lato rotundo castaneo-purpureo, umbilicum latum tegenti.—A more globose form would have been more characteristic of this species, which is remarkable for the round, broad, chestnut-coloured pad covering a broad umbilicus.

97. PISIFORMIS, f. 163, *Recluz*.—Parva alba oblique subglobosa; umbilico parvo, columella ad umbilicum lobata.—A little white shell without distinctive characters.

98. VENUSTULA, f. 146, *Recluz*.—Gracilis ovata pallida, lineis castaneis maculisque picta, spira elevata, anfractibus convexis; apertura brevi, labio columellari lato, expanso, umbilicum tegenti.—A pale buff little shell, with the last whorl swollen and raised above the aperture, and the columella broadly swollen so as to cover the umbilicus.

99. NUCULA, f. 145, *Reeve*.—Parva sordida, subquadratum globosa, columella callosa, medio lobata, umbilicum tegenti.—The umbilicus is covered by the columellar rounded pad in this little dull brown shell.

100. ABBREVIATA, f. 157, 158, *Sowerby*.—Parva, livida, obscure bifasciatim maculata; spira brevi, anfractibus apicalibus parvis rotundis; ultimo subcylindraceo, ad suturam leviter plicato, albo fasciato, apertura castanea, superne canaliculata, labio externo superne depresso, tenui, labio interno superne calloso, lobato, umbilicum tegenti.—This species has a resemblance to several species of livid colour, but is short and rather cylindrical, and has a closed operculum.

101. ANTONII, f. 128, *Philippi*.—Ovato-pyramidata livida, triseriatim maculata, apertura semicirculari castanea; labio

columellari umbilicum tegenti.—Rather narrow and pyramidal; livid, with brown markings, with a narrow umbilicus, partly covered by the white columellar callus, as it narrows obliquely towards the lower part.

102. GRACILIS, f. 156, *Sowerby*.—Pallida, quam *N. jamaicensis* magis oblique pyramidata, ad suturam leviter plicata lobo castaneo columellari umbilicum dimidiatim tegenti; spira elevata, anfractibus convexo-declivibus, apertura breviuscula.—Oblique, with a chestnut-coloured pad half covering the epidermis.

103. PALLIDA, f. 137, *Broderip*.—Alba, ovato-subpyramidata; spira elevata, ultimo anfractu supra aperturam convexo; apertura subpyriformi, callo columellari ad umbilicum tumide lobato; umbilico angusto, partim obtecto.—The last whorl is elevated and swollen above the aperture, and the callus more than half covers the narrow umbilicus.

104. SUFFUSA, f. 129, 130, *Reeve*.—Oblique cylindracea, purpureo suffusa, tenuis, angusta; spira subproducta, apertura pyriformi, columella alba, tumida.—Obliquely cylindrical, rather thin, suffused with a purple tint, no umbilicus.

105. PUERILIS, f. 132, *Gould*.—Parva pyramidata alba; umbilico parvo, per callum fere obtecto.—There is very little appreciable character about this dull white pyramidal shell; it has a little half-round pad on the columella nearly covering the narrow umbilicus.

106. IMMACULATA, f. 147, *Totten*.—Parva sordida subcylindracea; spira acuminata, umbilico angusto; apertura superne callosa.—Rather cylindrical, with no particular colour, no markings, and a narrow umbilicus.

107. MOZAIKA, f. 133, 134, *Sowerby*.—Ovata, alba maculis magnis castaneis quadratis quadrifariam tessellata, prope suturam maculis paucis, elongatis; spira brevissima; anfractu ultimo ad suturam tumido, infra medium subventricoso; apertura semicirculari, labio columellari superne calloso, lobo rotundo umbilicum tegenti.

108. PAVIMENTUM, f. 97, *Reeve*.—Parva globoso-subcylindracea alba nitens, cæruleo fasciata, maculis castaneis tessellata, umbilico tecto.—On the main whorl there are a central and a lower blue band with small tessellated spots in

the middle. On the broad white bands above and below are larger and more distant spots.

109. FULMINEA, f. 85, 86, 87, *Gmelin*.—Globosa, pallide fulva, angulatum fulgurata, nonnunquam punctata; spira brevi, anfractibus superne subdepressis, umbilico magno, submarginato, aperto, callo columellari superne incrassato.—This lightning-marked shell is susceptible of much variation.

110. FLORIDA, f. 90, *Reeve*.—Globosa, pallide fulva, purpureo suffusa et fasciata, castaneo punctata; spira depressa umbilico lato, castaneo, callo spirali angusto, mediano; columella tenui, labio interno superne calloso.—Not remote from *N. maculata*, but more delicate in structure and colouring. The spiral callus is very thin, and the umbilicus coloured with chestnut.

111. TINCTURATA, f. 89, *Reeve*.—Globosa solida pallide fulva punctata, maculis obliquis pallide aurantiis et fasciis fuscis picta, spira brevi, anfractibus prope suturam depressis, umbilico aperto.—A globose species, prettily painted with dots, orange blotches, and bands.

112. RUBRO-MACULATA, f. 124, *Smith, B. M.*—Globoso-subdepressa; supra infraque seriatim maculata, maculis magnis rubris per lineas flexuosas junctis; spira brevi conica, anfractibus ad suturam paulo elevatis, tum depressis, medio subquadratis; apertura superne depressa, lata, ad marginem maculata, margine tenui; umbilico angusto, labio columellari angusto, ad umbilicum lobato.

113. BIFASCIATA, f. 45, *Gray*.—Ovata fulva medio anfractuum distanter albo fasciata; spira pyramidata, acuminata, anfractibus declivibus; apertura semilunata, labio externo fulvo inmarginata, umbilico angustissimo, columella late callosa castaneo-nigrescenti, ad umbilicum lobata.—Interrupting the delicate dove colour of the body-whorl are two narrow white bands in the centre, one at the suture and one at the lower margin.

114. VITELLUS, f. 41, *Lamarck*.—Oblique subovato-globosa crassa aurantia, maculis magnis albis biseriatim dispositis cincta; spira brevissima, anfractibus prope suturam depressis, plicatis; apertura alba, labio interno late expanso, calloso umbilicum partim tegenti.—The well-known globular shell

with two spiral bands of white spots cut out, as it were, in the orange ground colour.

115. *GLOBOSA*, f. 47, *Chemnitz*.—Globoso-subovata albida castaneo-grisescenti trifasciata, intervallis pallide castaneis, anfractibus superne declivibus, infra albis; apertura semi-circulari, intus obscure fasciatis; umbilico lato, margine tumido; columella subarcuata, labio interno ad anfractum ultimum late reflexo.—Almost ovate in form, delicately coloured, in purplish-grey bands fused into unity by a pervading chestnut. Umbilicus wide open, columellar lip thick, reflected, and callous at the upper part.

116. *FORSKALII*, f. 39, *Chemnitz*.—Globosa albida tenuis, fasciis tribus purpureo-castaneis interruptis cincta; spira brevi, acuminata, anfractibus versus suturam depressis, leviter plicatis; apertura magna, umbilico subplanato superne calloso, medio vix lobato.—The purplish broad bands are prettily interrupted and divided.

117. *SEPTENTRIONALIS*, f. 67, *Beck*.—Globosa, tenuiuscula, superne obscure castanea; spira breviuscula, anfractibus superne depressis, ultimo subtus albido, spiraliter bilirato; umbilico per callum columellarem partim celato; labio interno prope suturam calloso.—Rather more globose than *N. monilifera*, of a dull chestnut colour down to the lower part, where the colour is intercepted with a white band.

118. *GENUANA*, f. 139, *Reeve*.—Globosa fulva, fasciis pallidioribus quaternis castaneo maculatis, interstitiis latoribus rubro punctatis picta; spira brevi anfractibus convexis ad suturam crenatis; apertura ovata, subdepressa, labio interno superne calloso, medio latissime lobato, umbilicum tegenti.—Coloured by light narrow bands with large spots, and broad darker bands with minute dots. Umbilicus covered with a callous pad extending widely from the columella.

119. *GAMBLE*, f. 49, *Recluz*.—Alba, oblique globosa; spira brevissima, anfractibus ad suturam plicatis, ultimo infra spiraliter bimarginato; umbilico angusto; columella ad ultimum anfractum late callosa, ad umbilicum unilobata.—Rounded, white, with wrinkles at the suture and a kind of double edge at the bottom of the last whorl. The narrow umbilicus is partly covered by a lobe on the columellar callus.

120. IMPERFORATA, f. 93, *Sowerby*.—Globosa crassa punctata et maculata; spira brevi, anfractibus superne depressis, ad umbilicum spiraliter valide marginatis, callo columellari crasso umbilicum tegenti; labio externo incrassato.—Although resembling *N. fulminea* in colour and markings, this species differs in the umbilical region being much thickened and the umbilicus itself covered.

121. BURIASENSIS, f. 131, *Recluz*.—Parva subcylindrica pallida, lineis rubescentibus strigata; umbilico angusto, labio columellari medio et supra medium tumido.—Owing to the moving of the zoological collections, the editor was unable to get more than an imperfect sketch of this species, which is shorter and more cylindrical than represented.

122. TRAILLII, f. 164, *Reeve*.—Globoso-subpyramidata, pallide fulva, tenuiter lineis rubescentibus, infra medium maculis castaneis fasciatim picta; spira breviuscula, anfractibus declivibus, apertura semicirculari, labio columellari tumido, rectiusculo, ad umbilicum rotunde lobato, lobo purpureo; umbilico clauso.—With several bands of reddish lines, and below them a row of conspicuous spots.

123. VARIABILIS, f. 135, *Recluz*.—Globosa, superne usque ad medium grisea, rubro minute undulatum lineata, infra albida, maculis rubris unifasciata; labio columellari anguste tumido, fusco rubescenti, ad umbilicum lobato; umbilico angusto.—The writer cannot well identify this species or its varieties, but believes it to be a smaller shell than the figure copied.

124. PROXIMA, f. 111, *C. B. Ad.*—Globosa, grisea fulvo fasciata fasciis albis castaneo maculatis tribus et punctis intermediis minutis picta; spira brevi, obtusa, umbilico per lobum columellarem partim obtecto.—A pretty little shell, ornamented with chestnut-spotted white bands and minute dots below.

124*. ASELLUS, f. 161, *Reeve*.—Parva globosa albida, fasciis castaneis duabus spiraliter ornata, inter fascias sagittatim notata; labio columellari lato calloso, infra semitondo, umbilicum tegenti.—*N. notata*, similar in form, and somewhat so in markings, belongs to a different set, having an open umbilicus, and showing a little of the spiral

callus. The two purplish-chestnut bands are remarkably characteristic of this species.

125. CLAUSA, f. 48, *Broderip* and *Sowerby*.—Alba globosa, spira paulo exserta, anfractibus ad suturam depressis tum rectiusculis; umbilico brevi, rotundo, columella infra anfractum ultimum in lobum rotundum expansa.—A rounded white shell with short spire and shouldered whorls, and short round umbilicus, over the upper part of which the columella is expanded into a rounded pad.

126. TEXTILIS (no figure), *Reeve*.—Globosa, tenuis, superne cærulea, medio et infra subviride fulva, maculis magnis fuscis triseriatim picta; umbilico magno, callo spirali mediano, angusto, columella lobata, ultimo anfractu subdepresso, operculo testaceo.—A characteristic shell unfortunately omitted in the plates. It is thin, globose, and of a dull greenish-bay colour, with three bands formed of angular broad brown patches. Although thin, it has a shelly operculum and a spiral umbilical callus.

127. CATENA, f. 50, *Philippi*.—Globoso-subacuminata tenuiuscula fulva, ad suturam fusco maculata; spira producta, anfractibus subrotundis; umbilico latiusculo; columella callosa, ad umbilicum paulo expansa, simplici.—This globose, fawn-coloured shell is familiar to British collectors, and is distinguished by its shouldered whorls and the row of reddish spots near the suture; the columella is simple, widening upwards over part of the rather wide umbilicus.

128. SORDIDA, f. 98, *Philippi*.—*N. catena* similis, sed sordide fusca immaculata, angustior, magis acuminata, anfractibus magis declivibus, apertura angustiori, labio interno magis calloso.—The colour has a dull uniformity, and the whorls of the spire a gradual slope, which are not found in *N. catena*.

129. GREENLANDICA, f. 140, *Beck*.—Albida, globosa, crassa; spira parviuscula; umbilico angustissimo; columella crassa, rotunda.—Solid, whitish, rounded; spire short, obtuse, with scarcely shouldered whorls; umbilicus very small, sometimes covered by columellar callus.

130. MONTACUTI, f. 141, *Forbes*.—Globosa parva fulva, spira subproducta; umbilico lato; columella crassiuscula ad

umbilicum tumida; tenuiter unilobata.—Fawn-coloured, with a more produced spire than *N. monilifera*; a rather large umbilicus. The columella is rounded and thick, formed into a slight lobe over the upper part of the umbilicus.

131. MELANOSTOMA, f. 72, *Lamarck*.—Ovata pallida, maculis castaneis trifasciata; spira brevi, anfractibus superne declivibus tum expansis; apertura magna, subpyramidata, umbilico angusto partim obtecto; castaneo-nigrescenti, columella late reflexa callosa nigra.—One of the sigaretus-like species, with wide and high aperture and short spire. It has a black callous columella, broad over the narrow umbilicus.

132. ZANZEBARICA, f. 73, *Recluz*.—Quam *N. melanostoma* latior, spira brevissima, apertura maxima, ultimo anfractu angusto, sparsim castaneo maculato.—Broader and more open-mouthed than *N. melanostoma*, with narrow body-whorl.

133. MELANOSTOMOIDES, f. 78, *Quoy*.—Parva, quam *N. zanzebarica* tenuior, magis acuta, et obliqua, umbilico et columella augustissimis.—More thin and succinea-like than the other species of the group, with a very narrow umbilicus and thin oblique columella.

134. SIMLE, f. 71, *Chemnitz*.—*N. zanzebaricae* similis, sed magis regulariter ovata, fasciis griseis undulatim castaneo eleganter strigatis et maculatis, columella nigrescenti-castanea ad ultimum anfractum magis expansa.—Like *N. zanzebarica* in form, but more regularly oval, very smooth, with bands of grey purple, on which chestnut spots and zigzag markings are ornamentally arranged.

135. SEBÆ, f. 79, *Souleyet*.—Subpyramidata, pallida, tenuis, infra inflata, spira producta, anfractibus subinflatis, ultimo late inflato; apertura magna, infra subquadrata; columella rectiuscula, purpurea, umbilico angusto.—More inflated than others of the same group; pale, with bands obscured by a dull grey epidermis.

136. MACROTREMIS, f. 148, *Adams and Reeve*.—Alba lævis oblique ovata, umbilico maximo, apertura angusta, alta, columella rectiuscula vix lobata.—A white shell approximating to the above group, but very oblique, with narrow elevated aperture and very wide umbilicus.

137. *FILOSA*, f. 74, *Sowerby*, MS. Mus. Cum.—Fulva, late fusco fasciata, spiraliter tenuiter filoso-striata; spira producta, apertura lata, infra subquadrata; columella rectiuscula nigrescenti, subtortuosa, umbilico angustissimo.—Of all the wide-mouthed species of this group *N. filosa* most nearly resembles *N. succineoides*, being narrow, with produced pointed spire, with an outer lip rather square at the bottom; but the threaded sculpture distinguishes it.

138. *SUCCINEOIDES*, f. 76, *Reeve*.—Parva, oblique trigona, quam *N. melanostoma* magis oblique trigona, immaculata, umbilico angustissimo, columella obliqua, angusta, castaneo-nigrescenti.—More oblique than the preceding, without spire, and with the dark chestnut columella and umbilicus both narrower.

139. *UMBILICATA*, f. 77, *D'Orbigny*.—Ampla tenuis oblique ovata; fulva, flammis castaneis undulatis trifasciatim ornata; apertura lata, columella tenui, obliqua, umbilico latissimo; spira brevi.—A small shell presenting an extreme form of the open-mouthed species. It is ornamentally striped in three bands with chestnut marks. The columella is oblique and thin, and the umbilicus very wide.

140. *MACROSTOMA*, f. 75, *Philippi*.—Quam *N. Sebæ* longe magis inflata, tenuis, subrotunda; apertura maxima lata, infra rotunda.—Similar to *N. Sebæ*, but more globose and inflated.

141. *PRIAMUS*, f. 23, *Recluz*.—Quam *N. maura* magis obliqua, medio anfractuum biseriatim punctata, ultimo anfractu supra umbilicum breviusculo, umbilico angusto elevato.—Differing from *N. maura* in being more oblique, spotted in two rows, with the body-whorl much shorter in front and the umbilicus narrower and partly covered with a flattened lobe.

142. *MAURA*, f. 36, *Bruguère*.—Ovata castanea lævis; spira brevi, pyramidata; apertura maxima, subpyriformi labio externo nigricanti, columella recta, nigricanti ad anfractum ultimum expansa.—Shaped like others of the group, but more evenly oval, with chestnut colour and nearly black columella.

143. FLUCTUATA, f. 17, *Sowerby*.—Oblique globosa, griseo-fulva, tenuis, flammis fulvis fluctuatis, albo marginatis ornata; apertura maxima, oblique expansa; labio externo tenui superne depresso; columella nivea callosa, latiuscula, ad marginem dense castanea.

144. HELICOIDES, f. 12, *Johnson*.—Tenuis alba ovata, vix umbilicata, epidermide tenui induta; spira plus minusve producta anfractibus ad suturam plano-excavatis, apertura subpyriformi, columella angusta.—Rather oval, with elevated spire, the whorls of which are slightly excavated near the suture; columella simple, turned back so as to hide, or nearly hide, the linear umbilicus. *Cornea* of Möller is said to be wider and more inflated than the typical form, but the species is extremely variable.



ALPHABETICAL INDEX TO NATICA.

- abbreviata*, *Sowb.* sp. 100, f. 157, 158.
Adansoni, *Rve.* sp. 33, f. 94.
adusta, — ? = *zanzibarica*.
affinis = *zelandica*.
alabaster, *Rve.* = *intemerata*.
ala-papilionis, *Chemn.* sp. 24, f. 46.
alba, *Lovén* = *grœnlandica*.
albula, *Recl.* = *mamilla*.
albumen, *Recl.* sp. 15, f. 57.
Alderi, *Forbes*, sp. 94, f. 113.
Alexandriæ, *Recl.*; not found.
americana, *Recl.* = *nitida* ?
ampullaria, *Lam.* = *catena* ?
Antonii, *Phil.* sp. 101, f. 128.
aperta, *Sowb.* sp. 54, no fig.
arachnoides, *Recl.* = *fulminea*.
areolata, — ? *zebra* var. ?
asellus, *Rve.* sp. 124*, f. 161.
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Baconi, *Rve.* sp. 4, f. 2.
Beverlii, *Leach* = *grœnlandica*.
bifasciata, *Gray*, sp. 113, f. 45.
bifasciata, *Recl.* = *fulminea*.
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Bourguignati, *Recl.* = *fulminea*.
Broderipiana, *Recl.* sp. 25, f. 91.
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buriasensis, *Recl.* sp. 121, f. 131.
Caillaudii, *Recl.* = *pavimentum*.
campechensis, *Recl.* sp. 2, f. 7.
canaliculata, *Gld.* = *helicoides*.
cancellata, *Gmel.* = *sulcata*.
candidissima, *Le Guil.* sp. 59, f. 26.
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Chemnitzii, *Recl.* = *didyma*.
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clavata, *Sowb.* sp. 11, f. 167.
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Collei, *Recl.* sp. 30, f. 142, 143, 144.
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conica, *Lamk.* sp. 78, f. 25.
consolidata, *Couth.* = *collaria*.
cora, *D'Orb.* sp. 88, f. 136.
cornea, *Möller* = *helicoides*.
crenata, *Recl.* = *ala-papilionis*.
cruentata, *Lamk.* = *fulminea*.
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- decora*, Phil. ? = zebra.
deidosa, Rve. sp. 61, f. 43.
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didyma, Bolten, sp. 7, f. 4, 14.
Dilwyniana, Recl. sp. 45, f. 166.
Draparnaudi, Recl. sp. 12, f. 84.
dubia, Recl. sp. 62, f. 56.
duplicata, Say = heros.
eburnea, — ? = orientalis.
effusa, Swains. sp. 72, f. 82.
elegans, Recl. = picta ?
Elenæ, Recl. sp. 22, f. 150.
euzona, Recl. = zebra.
fibula, Rve. = young Incei, f. 63, 64.
filosa, Sowb. sp. 137, f. 74.
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Francisca, Recl. sp. 90, f. 162.
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Gambiæ, Recl. sp. 119, f. 49.
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glauca, Scacchi = sordida.
glauca, Linn. = Alderi ? (Hanley).
glauca, Penn. not Linn. = catena.
glauca, Lam. not Linn. = olla.
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Guillimeria, Payr. = Alderi ?
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hebrœa, Martyn = maculata.
helicoides, Johnson, sp. 144, f. 12.
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Herculea, Jonas, sp. 9, f. 3.
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intermedia, Recl. = mamilla.
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jamaicensis, C. B. Ad. sp. 96, f. 110.
javanica, Del. = maculosa.
Jukesii, Rve. sp. 80, f. 55.
labrella, Lamk.; not identified.
lactea, Lovén = grœnlandica.
levida, Laskey ? = sordida.
Lamarckiana, Recluz = didyma.
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lineata, Lamk. sp. 21, f. 38.
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macrotremsis, Ad. & Rve. sp. 136, f. 148.
maculata, Lamk. sp. 31, f. 21, 22.
maculosa, Lamk. sp. 34, f. 13.
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mamillaris, Lamk. sp. 67, f. 68.
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maroccana, Chemn. = marochiensis.
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melastoma, Swains. sp. 70, f. 100.
microstoma, Quoy = plumbea.
millepunctata, Lamk. = maculata.
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Nicolii, Fbes. = catena.
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nitida, Donov. = Alderi ?
notata, Sowb. sp. 44, f. 168.
nucula, Rve. sp. 99, f. 145.
olla, Mar. de Serr. sp. 1, f. 1.
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orientalis, Gmel. sp. 14, f. 65, 66.
otis, C. B. Ad.; not found.
pallida, Brod. sp. 103, f. 137.
- pallium*, Recl. = Cumingiana.
panamensis, Recl. sp. 63, f. 18.
papyracea, Sowb. sp. 18, f. 149.
patula, Sowerby = glauca.
pavimentum, Recl. sp. 108, f. 97.
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pomum, Philippi, sp. 17, f. 19.
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Prichardi, Forbes = marochiensis.
problematica, Rve. sp. 8, f. 54.
proxima, C. B. Ad. sp. 124, f. 111.
puerilis, Gld. sp. 105, f. 132.
punctata, Swains. = fulminea.
pusilla, Forbes & Han. = grœnlandica.
pygmœa, Philippi; not identified.
pyramis, Rve. sp. 65, f. 35.
pyriformis, Recl. = mamilla.
rapulum, Rve. sp. 42, f. 61.
ravida, Soul. sp. 81, f. 53.
Raynaudiana, Recl. sp. 91, f. 88.
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rhodostoma, Phil. = violacea.
rubro-maculata, Smith, sp. 112, f. 124.

- rufa*, *Born*, sp. 27, f. 42.
rufilabris, *Rve.* sp. 51, f. 127.
rugosa, *Chemn.* = *sulcata*.
rutila, *Macgill.* = *Montacuti*.
sagraiana, *D'Orb.* sp. 92, f. 117.
salangoensis, *Recl.* *mamillaris*
 var.
samarensis, — ? resembling
simiæ.
sanguinolenta, *Desh.* = *mela-*
stoma.
Sebæ, *Souleyet*, sp. 135, f. 79.
semisulcata, *Gray*, sp. 87, f. 59.
senegalensis, *Recl.* = *fulminea*.
septentrionalis, *Beck.* sp. 117,
 f. 67.
seræ, *Souleyet*; not known.
simiæ, *Chemn.* sp. 134, f. 71.
simioides, *Recl.* = *simiæ*.
solida, *Blainv.* sp. 77, f. 81.
sordida, *Phil.* sp. 128, f. 98.
sordida, *Swains.* = *plumbea*.
Souleyetiana, — ? = *marochi-*
ensis.
spadicea, *Gmel.* sp. 32, f. 20.
squalida, *Macgill.* = *Montacuti*.
stercus-muscarum = *maculata*.
Strangei, *Rve.* sp. 75, f. 80.
succineoides, *Rve.* sp. 138, f. 76.
suffusa, *Rve.* sp. 104, f. 129, 130.
sulcata, *Born*, sp. 26, f. 33, 34.
textilis, *Rve.* sp. 126, no fig.
tincturella, *Rve.* sp. 111, f. 97.
Traillii, *Rve.* sp. 122, f. 164.
trifasciata, *Recl.* = *maculata*
 var.
triseriata, *Say*, sp. 52, f. 138.
uber, *Valenc.* sp. 68, f. 51.
umbilicata, *Quoy*, sp. 139, f. 77.
unifasciata, *Lamk.* = *marochi-*
ensis.
unimaculata, *Rve.* sp. 46, f.
 105.
ustulata, *Sowb.* sp. 79, f. 112.
Valenciennesi, *Payr.* = *intri-*
cata.
variabilis, *Recl.* sp. 123, f. 135.
variolaria, *Recl.* = *pellis-tigri-*
na.
Vavaosi, *Le Guil.* sp. 64, f. 122.
venustula, *Phil.* sp. 98, f. 146.
vestalis, — ? *mamilla* var. ?
violacea, *Sowb.* sp. 86, f. 11.
virginea, *C. B. Ad.* = *uber*.
vitellus, *Linn.* sp. 114, f. 41.
vittata, *Gmel.* sp. 43, f. 115,
 116.
zanzebarica, *Recl.* sp. 132, f. 73.
zebra, *Lamk.* sp. 23, f. 92.
zelandica, *Quoy*, sp. 57, f. 119.
zonaria, *Lamk.* = *ala-papilio-*
nis.

MONOGRAPH OF THE GENUS

NERITA.

Testa marina, plerumque solida, plus minusve rotunda; spira plerumque subdepressa, raro exserta, nonnunquam planulata; apertura semitota, area columellari plerumque oblique rectiuscula callosa, frequenter rugata, vel verrucosa, margine plerumque dentato; labio externo expanso, intus calloso, tum plus minusve crenato, supra infraque nonnunquam uni- vel bi-dentato. Operculo testaceo, semicirculari vix unispirali per appendicem dentiformem ad columellam articulado. —The Neritæ, which are marine, may fairly be distinguished from the Neritinæ, which are mostly inhabitants of fresh water. The former are generally more solid, more sculptured, and more strongly toothed in the mouth. The latter are always smooth, or nearly so, and the shelving columellar area is very nearly if not entirely without teeth on the margin. The operculum in both genera is articulated to the edge of the columella by a small square projecting appendix.

Species.

1. POLITA, f. 2, 3, *Linnaeus*.—Solida polita fasciata et varie picta, oblique ovata, area columellari crassa callosa, labio externo crasso, expanso, columella rude dentata.—This solid, polished, and variously painted shell is well known.

2. ANTIQUATA, f. 4, 92, *Recluz*.—*N. polita* similis, magis rotunda concentricè rugata, labio interno verrucoso, labio externo intus crenato, marginibus internis aurantiis.—Differing from *N. polita*, being more or less concentrically wrinkled,

the columellar area warted as well as toothed, an inner circle of the mouth generally orange.

3. SEMIRUGOSA, f. 1, *Recluz.*—*N. politæ* similis, sed spiraliter striata.—Resembling *N. polita* in form, but more or less distinctly spirally striated.

4. MAXIMA, f. 36, *Chemnitz.*—*N. politæ* similis, sed spira magis elevata, anfractibus superne depressis, apertura superne subconstricta.—Resembling *N. polita*, but with more elevated spire, and the whorls hollowed and depressed obliquely.

5. RUMPHII, f. 8–11, *Recluz.*—*N. politæ* similis, magis anguste ovata, area columellari subverrucosa, columella minute dentata, coloribus variis fasciata et maculata.—Smaller and narrower than *N. polita*, with the columella only slightly toothed and shelving. *N. argus* seems only to be a dark variety slightly speckled with white.

6. ORBIGNYANA, f. 48, 49, *Recluz.*—Ovato-oblonga, angusta, lævigata, tenuis; punctis nigris albo-marginatis angulatim dispositis picta; area columellari ad marginem externum verrucosa, margine interno dentato, medio emarginato.—Not far differing from *N. Rumphii*, but thinner and more elongated. The zigzag markings are formed by white-edged black dots.

7. UMLASSIANA, f. 125, *Krauss.*—*N. Rumphii* similis oblique magis elongata, labio externo ad spiram magis extenso, colore subviridi, nigro marmorata.—Narrower than *N. Rumphii*, with the outer lip extended over part of the spire.

8. HISTRIO, f. 6, *Linnaeus.*—Magna, solida, oblique elongata, spiraliter subdistanter striata, pallida griseo seriatim maculata, et partim tessellata; spira brevissima anfractibus superne subplanatis apertura expansa; area columellari subverrucosa, margine valide dentato.—More oblong than *N. polita*, rather flat, with rather flat spire, strongly spirally striated, and tessellated with black and grey.

9. MAURA, f. 37, 55, *Recluz.*—Quam *N. histrio* spira magis elevata, apertura multo magis expansa, colore griseo-nigricanti, nigro obscure tessellato.—The spire is much more elevated and rounded, the whorls less depressed, the aperture more expanded, and the columellar area more coarsely ver-

rucose. The darker shell, f. 55, is a little differently shaped, and more generally black.

10. LINEATA, f. 38, *Chemnitz*.—Oblique oblonga, costellis nigris dense spiraliter cincta; spira compressiuscula, anfractibus versus suturam tumidiusculis, tum declivi-depressis; apertura ampla aureo suffusa, labio interno subrugoso, ad marginem valide dentato.—Having the same obliquely-oval form as all the preceding species, and spirally girt with outstanding black ridges. The columellar area is more or less tintured with yellow.

11. BALTEATA, f. 83, *Reeve*.—Quam *N. lineata* magis angustata, liris spiralibus magis distantibus, hinc illinc albo-punctatis, labio externo intus crenato, area columellari verrucosa, margine valide dentato.—More narrow than *N. lineata*, with the spiral lines more distant and articulated.

12. ATRAMENTOSA, f. 44, *Reeve*.—Anguste oblonga, lineis nigris albo punctatis spiraliter dense cincta; area columellari subrugata, margine valide dentato; labio externo nigro marginato, intus crenato, supra infraque valide unidentato.—Of a blackish-grey colour, with finely speckled close linear ridges. A strong lateral tooth above and one below on the inner surface of the outer lip.

13. BIRMANICA, f. 82, *Philippi*.—Quam *N. atramentosa* magis regulariter ovata, liris punctatis spiralibus vix elevatis; spira minutissima, dentibus lateralibus in apertura obsolete.—The spiral ribs are very little raised, the form is an oblique regular oval, and the upper and lower lateral teeth in the aperture, conspicuous in the preceding, are obsolete in this species.

14. STRICTA, f. 118, *Baird*.—May be identical with the preceding, but I have only a rough sketch and notes.

15. ANTILLARUM, f. 53, 54, *Gmelin*.—Nigrescens, subquadratum ovata, costis complanatis, concentricis striatis, approximatis sculpta; apertura ovata, area columellari granulosa margine valide dentato, labio externo intus crenato.—There can be little doubt that this is the species referred to in the figure of *Chemnitz*, pl. 192, f. 1987, named *sculpta* in *Reeve's* work and *insculpta* in the British Museum. It is characterised by broad flat ribs, set rather closely together.

16. BISECTA, f. 56, 57, *Reeve*.—Quam *N. Antillarum* magis expansa, area columellari lævigata, frequenter flavida, costis medio longitudinaliter divisis.—Of a broader and flatter make than the preceding; smoother in the columellar area, which is sometimes yellow, and the ribs are split, as it were, in the middle by an incised line.

17. DOMBEYI, f. 109, *Recluz*.—Parva, subrotunda, dense spiraliter costata fulvo-grisea vel nigrescens; apertura expansa, labio superne extenso columella concavo-excavata; area columellari planulatim excavata subgranulosa, macula cærulea vel nigra picta.—A rather rounded shell, with fine ribs and expanded mouth, with a bluish-black spot on the columellar area. Fig. 85 represents a darker shell, which can hardly be distinguished from the type.

18. GEORGINA, f. 110, 111, *Recluz*.—Oblique ovata suboblonga, costellis acutis, subdistantibus nigro articulatis, frequenter duplicatis; area columellari polita vix medio dentata; labio externo tenui, crenulato.—The ribs are a little distant, sharp-edged, and articulated with black; the mouth is smooth, and the edge of the outer lip not nearly so much notched as in the figure which was copied before seeing specimen.

19. GRANULATA, f. 66, *Reeve*.—Quam *N. Dombeyi* brevior, liris magis distantibus; area columellari valide granulata, labio externo intus valide plicato.—Remarkable for the strong granulation of the columellar area and the strong plaits inside the outer lip.

20. NOVÆ-GUINÆ, f. 116, 117, *Lesson*.—Subglobosa grisea nigricans, spiraliter confertim filoso-lirata; columella ad marginem valide dentata; spira parva exserta aurantia acuminata.—This species has not the flattened spire of the several preceding; it has strong teeth on the columella, and is somewhat fluted on the edge of the outer lip.

21. BERNHARDI, f. 104, 105, *Recluz*.—Parva, rude spiraliter costata, flavida, nigro late variegata, et albizonata; area columellari angusta, granulata, labio externo intus valide crenato.—This is a small shell, rather coarsely ribbed, covered, except in one or more bands, with mottled black. The columellar area is narrow and strongly granulated.

22. GENUANA, f. 117, 118, *Reeve*.—Quam *N. Bernhardi* magis globosa, spira subplanata, apertura haud tantum ex-

pansa, area columellari læviuscula, nigra, zonis aurantiis binis cincta.—More globose and less expanded than the preceding, strongly ribbed, black, with an orange band at the suture and another below the last whorl.

23. HAUSTRUM, f. 77, *Reeve*.—Ovato-globosa, nigro profuse marmorata sulcata; spira paulo elevata; apertura profunda angustiuscula, area columellari minute granulata, margine vix dentato.—Rather more obliquely oval than globose; rather sulcated than ribbed, with the mouth a little contracted, the columella minutely granular and rather hollow, with very inconspicuous teeth.

24. COMMA-NOTATA, f. 59, *Reeve*.—Quam *N. haustum* magis rotunde ovata, dentibus columellæ majoribus, costis latis, distinctis, nigro quadratim articulatis, interstitiis angustis profundis.—Distinctly broad-ribbed, with deep narrow grooves. The ribs are flattened, and marked by long comma-like spots.

25. EXCAVATA, f. 84, *Sowerby*.—Oblique ovato-globosa, nigra, albo variegata, costis validis, subcomplanatis, approximatis lirata, spira subproducta obtusa; apertura flavida, nigro marginata, angusta, profunda; area columellari granulata, declivi, excavata, dentibus marginalibus tumidis, acutis; labio externo intus sublirato, supra infraque acute bidentato; margine externo nigro, crenulato.

26. FRAGUM, f. 7, *Reeve*.—Subovato-globosa, dense lirata, nigra, maculis lutescentibus sparsim variegata; apertura fulva, angustiuscula; area columellari lævi, fere edentula, sanguineo unimaculata.—More globose than the two or three preceding, with a smooth columella marked by a broad reddish-brown spot.

27. TESSELLATA, f. 86, 87, 88, 89, *Gmelin*.—Globoso-subquadrata, rotunde lirata, alba, nigro concinne tessellata, vel rude maculata; apertura lævi, dentibus columellæ minutis, labii externi superne conspicuis.

28. ALBIPUNCTATA, f. 119, 120, *Reeve*.—*N. tessellatæ* similis, liris subdistantibus nigris, interstitiis albipunctatis.—I have not examined *Reeve's* shell, but if it really differs from *N. tessellata*, it will be in the interstices rather than the ribs being spotted with white, and broader in proportion.

29. PICEA, f. 15, *Recluz*.—*N. tessellata* similis sed omnino nigra, labio interno edentulo.—A specimen of *N. reticulata* blacked all over would pass very well for this species, except in having two rather prominent lateral teeth inside the outer lip.

30. NERITINOIDES, f. 43, *Reeve*.—*N. tessellata* similis sed polita, omnino nigra, vix sulcata, apertura flavida, lævi.—Like *reticulata* in form, but polished and black all over, with very slight traces of grooves or ribs, and no teeth or wrinkles in the yellowish mouth.

31. ATRATA, f. 41, *Chemnitz*.—Ponderosa, quadratim subglobosa, nigra, lævis; spira brevi subplanulata; apertura alba, nigro marginata, labio interno valide dentato; labio externo intus incrassato, superne bidentato, infra unidentato.—A thick, black, smooth shell, of similar form to the preceding, but the white aperture is strongly toothed, and the outer lip black-edged.

32. EXUVIA, f. 34, *Linnaeus*.—Subovata, solida, grisea, liris nigro articulatis, elevatim planatis, ad latera excavatis spiraliter cincta; spira parva, planata; apertura subrotunda, area columellari subexcavata granulata, labio externo laqueato, intus crenato superne dentibus duobus magnis armato.—The articulated ribs are flat at the top, hollow at the sides, and prominent; the columellar area is hollow and granulated, outer lip crenulated, with two prominent lateral teeth above.

33. ATRO-PURPUREA, f. 29, *Recluz*.—Subtrigona, purpureo-nigrescenti undulatim variegata, costis validis lirata; spira minuta subplanata; anfractibus rapide crescentibus superne planulatis; apertura expansa, labio externo latissimo superne supra spiram longe extenso; area columellari rude granulata et dentata.—Almost three-cornered, with the outer lip broadly expanded and extended over the spire. The blackish purple wavy mottling shows very prettily in some specimens.

34. PLEXA, f. 33, *Chemnitz*.—Ovata crassa alba, maculis nigris magnis ad costas distanter tessellata, costis magnis et interstitiis minoribus rude crenulatis sculpta; apertura subexpansa; labio externo maculato et laqueato, intus crasso, denticulato dentibus majoribus superne armato, area columellari granulata, ad marginem mediocriter dentata.—A well-

known coarsely sculptured species tessellated with bluish-black on the ribs.

35. CHLOROSTOMA, f. 32, *Lamarck*.—Quam *N. plexa* magis distanter costata, costis et interstitiis lævigatis; apertura rudissime plicata verrucosa et dentata; area columellari colore flavido tincta.—With nearly the same shape as *N. plexa*, but broader ribs and wider interstices. The aperture is coarsely wrinkled, toothed, and granulated; general colour tending to yellow, with very broad tessellating black spots.

36. SQUAMULATA, f. 24, 25, 101, 102, 122, *Le Guillou*.—Subtrigona, varie flammulis fascisque picta, costellis squamosis inæqualibus lirata; spira parva, planata; apertura expansa labio externo lato, intus crenulato, area columellari verrucosa et acute dentata.—Variously banded and spotted, with flat spire and expanded outer lip, the two latter characters, with the scaly ribs, distinguishing it from *N. chameleon*. *N. textilis*, *Lamarck*, is identical. *N. electrina*, *Reeve*, is only a variety of this.

37. SIGNATA, f. 18, *Macleay*.—Only differs from *N. squamulata* in having a blood-red mark among the wrinkles of the columellar area. A very young shell among our specimens labelled *N. vittulata* resembles it with the exception of the mark.

38. CHAMÆLEON, f. 22, 94–99, *Linnaeus*.—Globoso-subovata coloribus variis flammulatum et fasciatum picta, costis lævibus plerumque distantibus, frequenter approximatis; spira parva exsertiuscula, anfractibus superne subplanulatis; apertura mediocri, labio externo intus tenuiter plicato, supra infraque unidentato; area columellari valide pauci-verrucoso medio ad marginem acute dentato.—The lively flames gathering in rays at the suture, intensifying as they cross the ribs, and interrupted by cross bands of light, are the same in all varieties of colour. The ribs are normally distant; but sometimes intermediate ribs arise, which become nearly equal with the others. The species is named *N. stella* as of *Chemnitz* in *Reeve*; but *Hanley* has identified it as the Linnæan shell in '*Ipsa Conchylia*.' Our figures 22, 96, 97, are typically characteristic; f. 78, 79 ditto, but named *oryza*, *Recluz*, f. 93, 94, 95. The closely ribbed variety named *præcognita*, *Adams* in *Reeve* (*Hindsii*, *Recluz*), is scarcely distinguishable.

39. ANNULATA, f. 75, *Reeve*.—Scarcely distinct from *N. chamaeleon*. A little more flattened in the ribs, with the white bands more distinct than the flames.

40. FULGURANS, f. 32, *Gmelin*.—Quam *N. chamaeleon* magis regulariter costata, costis concinne crenatis, elevatis, interstitiis angustis, colore pallido, nigro angulatim flammulato et tessellato.—The ribs are neatly crenulated, rounded, and distinct, with very narrow interstices, mottled in zigzag flames of black; mouth smoother than in *N. chamaeleon*.

41. ALBICILLA, f. 26, 27, 28, 113, *Linnaeus*.—Ovato-subtrigona, solida, versus spiram angustissima (ultimo anfractu magno), alba, grisea, vel aurantia, leviter transversim sulcata, nigro dense fasciatim variegata, aut rosea aurantio maculata. Apertura magna, labio externo superne extenso et elevato; area columellari omnino verrucosa, margine acute dentato.—*N. marmorata*, *Reeve*, cannot be rightly distinguished from the well-known black-mottled shell. The warts on the columellar area vary with the thickness of the enamel. I take *N. sanguinolenta*, *Menke* (B. M.), to be a variety of pink colour mottled in two bands with orange.

42. PATULA, f. 23, *Recluz*.—Quam *N. albicilla* tenuior; apertura laeviori, fere edentula.—In general form resembling the preceding, but differing in its lighter and smoother structure.

43. YOLDII, f. 70, *Recluz*.—Quam *N. patula* brevior, apertura haud tantum expansa, costis subobsoletis.—Another dark-mottled species of similar form, but rounder.

44. BEANIANA, f. 50, *Recluz*.—Subovata, depressa, angusta, roseo et griseo fasciata, fasciis griseis nigro-maculatis; spira parva subplanata, apertura expansa, area columellari granulata, nigro unimaculata.—Two different shells are given under this name in *Reeve*. The one we have not figured is certainly too near to be distinguished from *N. Yoldii*.

45. ACHATINA, f. 61, *Reeve*.—Ovato-globosa nigra, inter liras planatas sulcata; spira obtuse exserta, anfractibus rotundis; apertura ovata, area columellari declivi, obsolete granulata, margine interno nigro reticulato et valide dentato, labio externo intus crenulato, superne dentato.—This species is sculptured by narrow grooves between broad and

unequal ribs; aperture grey, rather smooth, with (in this specimen) a coloured articulation on the edge of the columellar plate.

46. *LISTERI*, f. 51, 54, *Reeve*.—Nigra, spiraliter obscure sulcata; spira gracile elevata, anfractibus superne declivibus; apertura obliqua, angusta cæruleo-flavida lævi, area columellari rubescenti fere edentula.—A sloped, pointed, black species, with very smooth, rather narrow, yellowish mouth and extremely obscure teeth on the edge of the columella. It is probably the *N. nivosa* of *Reeve*.

47. *JAPONICA*, f. 112, *Dunker*.—This little shell resembles *N. Yoldii* in appearance; but as my sketch was taken in haste before the removal of the B. M. collection, I cannot describe or compare it.

48. *ARABICA*, f. 65, *Reeve*.—Globosa, tenuiter striis incisissimis distantibus incisa, spira parva, anfractibus superne depressis, colore fulvo griseo fuscoque tessellata, apertura subrotunda, area columellari rude rugata, margine inequaliter dentato, labio externo intus superne unidentato.—Rather squarely globose, tessellated with brown and black between incised spiral striæ, columellar area coarsely wrinkled; one lateral tooth appears inside the outer lip above.

49. *SENEGALENSIS*, f. 76, *Gmelin*.—Quam *N. arabica* magis obliqua, colore magis variegata et fasciata, area columellari læviuscula, aurantio tinctorum.—More oblique than the preceding, and, in the specimen figured by *Reeve*, more variegated in colour. The columellar plate is not so strongly wrinkled.

50. *LONGII*, f. 90, *Recluz*.—Subglobosa, lævis, solida spiraliter inciso-striata, fulva, griseo tessellata; spira subexserta; apertura subexpansa alba granulata et rugata; anfractibus ad suturam elevatis tum concavo-depressis.—But for the difference in locality one might suppose this and *Reeve's arabica* to be the same; but the spire is much more exserted, and the last whorl falls obliquely.

51. *DESHAYESII*, f. 19, *Recluz*.—Globosa, spiraliter costis prominentibus numerosis interstitia æquantibus nigro articulatis lirata, lutea, griseo marmorata; spira elevata, anfractibus subrotundis; apertura subrotunda; area columellari rugis et dentibus maximis incrassata; labio externo intus crenulato superne bidentato.—This solid, rounded species, with deep

regular ridges equalling the interstices, is remarkable for the deeply cut wrinkles and large marginal teeth of the columellar area.

52. ORNATA, f. 13, *Sowerby*.—Globosa spiraliter costis nigro tessellatis lirata, spira parum elevata, anfractibus declivibus; apertura alba, labio externo crasso superne unidentato, area columellari transverse rugata ad marginem dentibus magnis armata.—The ribs are closer and less deeply cut than in *N. Deshayesii*, the spire shorter and its whorls more sloped, the wrinkles on the inner lip thin and less prominent, the teeth much less prominent.

53. GROSSA, f. 12, *Linnaeus*.—Crassa, oblique ovato-globosa; costis maximis, fere æqualibus distantibus, et versus aperturam minoribus interstitialibus, griseo tessellatis lirata, spira subelevata anfractibus paucis, declivibus, apertura subovata, area columellari valide rugata, dentibus marginalibus magnis, labio externo crasso, ad suturam elevato, tum depresso, dentibus lateralibus superne conspicuis.—Very coarsely ribbed, and tessellated with grey on the ribs. Our specimen has an orange semicircle on the columellar plate, and an orange tip.

54. COSTATA, f. 46, *Chemnitz*.—Globoso-subovata, solida, ad spiram depressa; costis latis elevatis scabriusculis nigris, interstitiis excavatis lirata; spira brevissima, depressa, apertura subrotunda; area columellari partim subaurantia, dentibus marginalibus prominentibus, labio externo intus rudissime dentato.—This broad black-ribbed species is quite ringent with coarse, prominent teeth in the aperture.

55. PLICATA, f. 79, 80, *Linnaeus*.—Globosa crassa albido-fulva vel rubro nigroque super costas tessellata, costis rotundis regularibus lirata, spira subelevata, acuta, apertura subangusta, area columellari tumida rudissime rugata, margine validissime dentato arcuatim producto, labio externo intus dentibus quinque magnis productis armato.—In this species the spire is more produced and the spiral ribs smaller than in the preceding, while the prominent teeth on the arched columella, and the strong teeth or plaits inside the outer lip, contract the inner aperture.

56. RINGENS, f. 68, *Reeve*.—Parva globosa tenui-lirata purpureo nigrescenti obscure marmorata; apertura angusta

alba, intus dentibus plicisque magnis contracta.—This might be taken for a miniature of *N. plicata*, but is much smoother, in well-developed specimens it is equally contracted in the inner part of the aperture by salient teeth. Hence its name 'grinning.'

57. VERSICOLOR, f. 20, 21, 114, *Lamarck*.—Subglobosa, subplanulatim costata, griseo nigro vel purpureo tessellata aut aliter variegata; spira frequenter subelevata, acuminata, anfractibus ad suturam elevatis, tum excavato-depressis; apertura angusta, columella arcuatim producta, rudissime dentata; labio externo intus fortiter dentato et plicato.—The ribs are much more depressed and undefined than in *N. plicata*, but the teeth and plaits of the mouth are nearly as prominent and strong. The varieties are tessellated or otherwise variegated with black, grey, and purple.

58. QUADRICOLOR, f. 14, *Gmelin*.—Ovato-subglobosa, tenuiter et concinne lirata pallidissime purpurea, liris nigro tessellatis, spira flavida, acuminata, anfractibus ad suturam elevatis, tum depressis; area columellari tumida, rugata, aurantio tincta, margine valide dentato; labio externo intus tenuiter crenato superne bidentato.—The ribs are small and neatly tessellated, the spire is more gradually shelving than in *N. peloronta*. The columella is wrinkled and is not hollowed and blood-spotted as in that species.

59. PELORONTA, f. 30, 31, *Linnaeus*.—Ovata leviter et nonnunquam obsolete costata, lutea, purpureo nigroque flammulata; anfractibus superne subdepressis, columella excavata, medio sanguinea, dentibus marginalibus conspicuis, labio externo subquadratum expanso, intus supra infraque conspicue dentato.

60. GEMMULATA, f. 62, *Reeve*.—Oblique globosa, grisea, liris tenuissimis, acute granulatis, distantibus, nigro et cæruleo fasciatis et tessellatis; spira exsertiuscula, apertura oblique producta, lævi, subcærulea, edentula.—The 'gems' consist of the little sharp granules on the thread-like ridges; the aperture is of a bluish tint, smooth, and without teeth.

61. UNDATA, f. 5, *Gmelin*.—Solida, globoso-acuminata tenuiter lirata, fulvo-nigrescens, fusco nigro alboque undatim variegata; spira acuminata; apertura alba, area columellari tumida rugata et granulata, margine rude dentato,

labio externo intus crenato, superne conspicue bidentato.—This species, the *Le Guillouana* of Recluz, fid. Reeve, I believe to be well shown in Chemnitz's f. 1950, 1951, and referred to by Gmelin and Lamarck.

62. SAVIEANA, f. 47, *Recluz*.—Quam *N. undata* magis globosa, spira magis depressa, liris magis conspicue sculptis; grisea, nigro fasciatim tessellata.—Shorter, thicker, and more strongly ribbed than *N. undata*; grey, linearly tessellated with black in bands.

63. CHRYSOSTOMA, f. 35, *Recluz*.—Quam *N. undata* magis elevata et acuminata, costis magis conspicuis et distantibus; anfractibus superne concavo-depressis; apertura aurantio frequenter tineta, area columellari rude plicata et dentata.—*N. oleagina*, Reeve, should be referred to this species, although smaller and whiter in the mouth.

64. ASCENSIONIS, f. 72, *Reeve*.—Globoso-acuminata, lutea, costis prominentibus, nigro articulatis tenuiserratis lirata; spira elevata, anfractibus subrotundis; apertura lævi, fulva, columella fortiter dentata.—With very prominent, minutely serrated ribs, which are conspicuously tessellated with black; the mouth is smooth, with several large marginal teeth.

65. GRISEA, f. 16, *Reeve*.—Globoso-acuminata, leviter spiraliter costata, trifasciatim nigro variegata; spira elevata anfractibus obliquis; columella corrugata et dentata, labio externo intus moderate plicato et superne unidentato.—Like *N. Ascensionis* in form, but without prominent ribs, variegated with mottled black in three bands.

66. FILOSA, f. 17, *Reeve*.—Oblique globoso-acuminata, lutea, tenuiter filis elevatis rubris distantibus subserratis lirata; spira elevata, anfractibus declivibus; apertura angusta, lævi, moderate dentata.—With a raised spire and sloping whorls, threaded with very thin, divided, red, serrated ridges. The aperture is rather small, white, moderately toothed, with smooth columellar plaits.

67. ESSINGTONI, f. 42, *Reeve*.—Globoso-acuminata, grisea nigro purpurascente late fasciata et marmorata; spira elevata, acuminata, anfractibus subter suturam excavatis; apertura subcærulea, lævi, moderate dentata.—Of a dark grey colour mottled with black, in bands; spire raised, acuminated;

whorls, after rising at the suture, excavately depressed below; aperture smooth, very light bluish-grey.

68. *FUNICULATA*, f. 45, *Reeve*.—Oblique globoso-acuminata, purpurea, nigro late fasciata, aut nigra, costis depressis spiralibus sculpta; apertura oblique producta, alba, area columellari aurantio tineta, granulata, valide dentata, labio externo intus crenulato, superne unidentato.—The specimen figured in *Reeve* is dark-coloured throughout, while the one now presented has two open bands of purplish mottling.

69. *NIGERRIMA*, f. 39, *Chemnitz*.—*N. funiculatæ* similis, sed anfractibus superne magis depressis, apertura alba lævi, area columellari angusta obsolete granulata.—The chief difference between this and the preceding species is that its columellar plait is not tumid. It is narrow, not wrinkled, and much less granulated.

70. *NIVOSA*, f. 106, *Reeve*.—Oblique acuminata, nigra, lævis, vix spiraliter sulcata; apertura angusta, oblique producta, lævi, angusta.—Smooth, black, and acuminated.

71. *FULIGINATA*, f. 100, *Reeve*.—*N. funiculatæ* similis, sed parva, apertura lævi, alba.—Like a miniature of *N. funiculata*, but with a smooth aperture.

72. *GRAYANA*, f. 91, *Recluz*.—Oblique oblonga, nigrescens, costellis elevatis, albo articulatis lirata; apertura subcærulea, expansa, area columellari subaurantia, rudissima.—From description I judge that this species must somewhat resemble *N. lineata*, but the liræ are more distant and articulated with white, and the columellar plait strongly wrinkled.

73. *AURANTIA*, f. 81, *Recluz*.—Globosa acuminata, dense spiraliter lirata, aurantia, griseo vel fusco undata; spira breviter acuminata; apertura alba, area columellari rugata, dentibus magnis tribus ad marginem armata.—A rounded shell of an orange tint, variegated in bands with grey patches.

74. *ERUBESCENS*, f. 62, *Reeve*.—*N. aurantiæ* similis rubra punctata, subrude lirata, fulvo-subrosea; spira elevata; apertura parva, columella ad marginem breviter rugata.—I cannot be quite sure whether this ruby-coloured species is distinct from *N. aurantia*, but the spire is more elevated and the aperture more contracted.

75. NERITOPSOIDES, f. 60, *Reeve*.—Globoso-acuminata valide et dense lirata, pallide fulva; apertura superne depressa et coarctata, externe subexpansa; area columellari excavata margine externo arcuatim rugato, margine interno valide dentato; labio externo crenato.—The mouth is contracted near the body-whorl, but expanded outwards, and the spire is elevated and rather pointed. The species otherwise very nearly resembles *N. erubescens*.

76. VEXILLUM, f. 52, *Reeve*.—Aurantia, globoso-acuminata, *N. erubescens* similis, sed nigro bifasciata, columella lævigata.—Were it not for the smooth columella, this species might be taken for a black-banded *N. erubescens*.

77. SPENGLERIANA, f. 121, *Recluz*.—Globosa fulva lævis, breviter acuminata, apertura subrotunda, lævi.—Globose, smooth, fawn-coloured with irregular dashes of black.

78. HELICINOIDES, f. 73, 74, 67, *Reeve*.—Parva globoso-acuminata, dense costata, subaurantia, maculis minutis rubris et fasciis tribus nigro tessellatis ornata; apertura lævi, labio externo intus lirato, superne unidentato.—A pretty little species of the globose-acuminated form, neatly ribbed and touched with red specks, except in three dark bands which are tessellated with black. There can be no utility in separating *N. pellis-serpentis* (f. 67) from this species.

79. AFFINIS, f. 69, *Reeve*.—Quam *N. helicinoides* magis elevata et contracta; apertura multo angustiori.—More elevated and less bulbous than the preceding.

80. BULLULA, f. 71, *Reeve*.—Parva, transverse ovata, nigra, anfractibus angustis; apertura elongata labio externo subexpanso, area columellari lævi, margine obscure dentato.—A dark little smooth shell with very little character, but seeming rather to resemble in form some of the smaller *Neritinae*, such as *N. fluviatilis*, &c.

81. SAMOENSIS, f. 123, 124, *Dunker*.—Parva, transverse oblonga, tenuis, spiraliter costata, costis lineis nigris variegatis; apertura obliqua, lutea profunde excavata.—Shaped like *Neritina fluviatilis* and other small species, ribbed and linearly speckled with grey; of a yellowish colour with deeply excavated aperture.

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MONOGRAPH OF THE GENERA

TEREDO AND KUPHUS.

Genus TEREDO, *Lamarck*.

PLATE 469.

Molluscum acephalum, vermiforme, perforans, tubam testaceam formans. Valvæ æquales, arcuatæ, utrinque hiantes, per canalem in areis duabus medio divisæ; area antica angulatim emarginata; area postica plus minusve alata; processu subumbonali arcuatim producta.

The well-known bivalved mollusc which bores tubular holes in wood and lines them with shell, has its body protected by a globular bivalve shell. The valves gape on both sides, the hiatus in front being angular. A curved projection starts from under the umboes in each valve. A horny stylet or shelly pallet is fixed in the upper part of the fleshy tube on each side.

Species with shelly pallets.

1. NAVALIS, f. 1, *Linncæus*.—Valvæ oblique rotundæ, hiatu antico obtuse angulato, ala dorsali rotunda. Tuba solida, ad terminum divisæ, haud concamerata. Palmulæ ligoniformes, ad terminum concavæ.—The globose valves are more oblique than most of the species, the angle of the front hiatus wide, and the dorsal wing expanded and rounded. Tube solid, divided at the end, not chambered. Pallets spade-shaped, concave at the end.

2. NORVEGICA, f. 2, *Spengler*.—Valvæ recte globosæ, hiatu rectangulari, ala dorsali angusta, arcuata. Tuba ad terminum concamerata. Palmulæ ligoniformes, ad terminum convexæ.

—Like *T. navalis*, but not oblique, having a straight angle at the hiatus, tube chambered; spade-shaped pallets convex at the end.

3. MEGOTHORAX, f. 10, *Gould, MS.*—Valvæ præcedenti similes, sed rectæ, altæ. Tuba . . . ? Palmulæ . . . ?—Differs from the preceding by the height and straightness of the valves.

4. MEGOTARA, f. 5, *Hanley.*—Valvæ breves, area antica parva, ala postica expansa, supra umbones elevata, acute uncinata. Palmulæ breviter ligoniformes, ad terminum concavæ.—Valves short, with small anterior area, and posterior wing expanded, elevated and curved above the umbo. Pallets shorter than those of *T. navalis*, and convex at the end.

5. MALLEOLUS, f. 6, *Turton.*—Valvæ angustæ, valde arcuatæ, ala postica parva, elevata, uncinata. Palmulæ brevissimæ, processu prominenti, brevi.—Like *T. megotara*, but narrow, and much curved, and the elevated posterior wing much smaller.

6. SENEGALENSIS, f. 12, *Blainville.*—Valvæ . . . ? Tuba annulatim rugata. Palmulæ parvæ, digitatæ.—No valves are found with the specimens in the British Museum, but the tubes (in holes bored across the wood) are curiously wrinkled. The pallets are small and fingered.

7. DENTICULATA, f. 19, *Gray, Mus. Brit.*—Valvæ breves, umbonibus callosis, unidenticulatis, area antica brevissima, ala postica expansa, superne elevata, uncinata. Palmulæ oblongo-ligoniformes ad latera utrinque unispinosæ.—Short, with very small anterior area and expanded posterior wing, like that of *T. megotara*. Umbonal callus forming a denticle. Pallets oblong spade-shaped, with a spine on each lateral edge.

8. AFFINIS, f. 13, *Deshayes.*—Valvæ rotundæ, area antica parva, ala postica lata, rotunda. Palmulæ ligoniformes superne corneo-digitatæ.—Valves resembling *T. navalis*, but less oblique; pallets with the stem long, the spade-like part short, with horny finger-like projections at the top.

9. BATAVUS, f. 17, *Spengler.*—Valvæ breves, ala postica angustissima, semilunari, elongata. Palmulæ ligoniformes, stipula elongata, spatula divisa, infra cornea.—Resembling

T. norvegica, but with smaller angular hiatus. Pallets spade-shaped, the lower part of the disc being horny.

10. PEDICILLATA, f. 14, *Quatrefages*.—Valvæ parvæ rotundæ, ala depressa subexpansa. Tuba ad terminum concaerata. Palmulæ biarticulatæ.—The pallets are very peculiar, being divided by a horny joint.

11. GREGATA, f. 16, *Lamarck*.—Valvæ angustissimæ vix alatae. Tuba contorta bulbiformis, ad terminum clausa, rotunda. Palmulæ ligoniformes, ad terminum concavæ, stipula brevissima.—This very curious Mollusc is found living with the tubes coiled up together in the shells of floating cocoa-nuts. The tubes are irregularly bulb-shaped and closed at the end. The valves are extremely narrow.

Species with horny, jointed stylets.

12. BIPENNATA, f. 11, *Turton*.—Valvæ angustæ prominente alatae, hiatus postico ad alam acute angulato, intus carinato, area antica angustissima. Styli cornei inæquales angulatim articulati.—The valves have much the aspect of *N. megotara*, but the stylets are horny and angularly jointed. They are of unequal length, one being a short palmet on a long stem, the other a longer palmet on a shorter stem.

13. CARINATA, f. 15, *Gray*.—Valvæ ut in *N. bipennata* sed latiores. Styli elongati; stipula elongatissima.—The stylets are longer than in any other species, and the valves are like those of *N. bipennata*, but a little broader. The name refers to an overlapping inner edge of the posterior wing, which is the same in several other species.

14. PALMULATA, f. 4, *Lamarck*.—Valvæ parvæ breviter alatae. Styli breves, angulatim pauciariculati.—A small species with narrow valves, the alæ of which are roundly projecting. Stylets short, six jointed at the broader end.

15. SAULII, f. 18, *Wright*.—Valvæ parvæ rotundæ anguste et rotunde alatae. Styli valde inæquales, stipulis brevissimis. Tuba solidiuscula, haud camerata.—A little rounded species with scarcely prominent wings. The stylets are both short, with very short stems; one with the jointed part shorter and more compressed than the other.

16. CAMPANULATA, f. 9, *Deshayes*.—Valvæ angustæ, area antica brevissima, ala prominenti ad hiatus acute angulata. Styli elongatis, articulatis; articulis ornatis, crispatis.—The valves are narrow and the anterior area very short, posterior area with a deeply cut angle separating the prominent wing. The articulations of the stylets are projected and curled outwards ornamentally.

17. BREVIS, f. 7, *Deshayes*.—Valvæ angustæ elongatæ parvæ; ala postica angusta, rotunda; processu subumbonali brevi. Styli discis septenis triangularibus articulati.—Valves narrow from front to back, long from apex downwards. Stylets with about seven triangular joints.

18. STUTCHBURYI, f. 8, *Leach* MSS.—Valvæ parvæ, rotundæ, area antica et ala postica parvis. Styli brevibus, superne angulatim articulatis, ad latera spinosis.—A very plain little species with small rounded posterior wing and small angular anterior angle.

19. DUNLOPI, f. 3, *Wright*.—Valvæ globosæ crassæ epidermide serrato striato indutæ; area postica angustissime, area antica angulatim, divisis; umbonibus curvis, callosis, lamella accessoria munitis. Styli elongati, extus convexi, intus concavi.—The valves are singularly thick and rounded in form, with a thick brown epidermis sculptured in serrated striæ. Unlike all the other Teredines, this species has a little accessory pellet on the hinge; and, more surprising still, it is found boring wood in a purely fresh-water river proceeding from a part of the Ganges where the water is absolutely fresh. It is curious that the only fresh-water *Pholas* (*rivicola*) has also a fringed epidermis.

Genus KUPHUS, *Guettard*.

SYN. *Furcella*, Oken. *Serpula gigantea*, Linn. *Septaria*, Lamarek.

Molluscum arenicolum, tubam testaceam formans. Tuba ad terminum posticum dimidiatim divisa. Palmulæ testaceæ deltoides.—The tube of this sand-burrowing Mollusc attains the length of some feet, and has been known as the gigantic *Septaria* of Lamarek. The small end, which protrudes from the surface of the sand, is divided by a central septum, and sometimes forms a double separated tube. The pallets of the larger species only are known; they are spatulate and deltoid. No valves have been found of either species.

1. GIGANTEUS, f. 20, *Linnaeus*.—As described generically above.

2. CLAUSUS, f. 21, *Sowerby*.—Tuba brevior, ad terminum anticum clausa. Valvæ ignotæ.—The smaller tube in the British Museum may possibly be, as there designated, a young specimen of the *gigantea*. But it seems hardly likely, the tube when young should be closed with overlapping extensions of the edges, and then be reopened on further development.

MONOGRAPH OF THE GENUS

GASTROCHÆNA, *Lamk.*

Molluscum perforans, tubam formans. Valvæ modioli-formes antice ad marginem ventralem late hiantes, ligamentum externum; umbonibus antice fere terminalibus. Tuba subtetacea bulbiformis agglutinans, interdum libera.—The valves of this burrowing and boring Mollusc are wedge-shaped, being short and narrow anteriorly, with the umboes almost terminal. The tube generally forms a testaceous lining to the hole bored by the animal; when free it is shaped like a flask or bottle, closed at the large end, and divided at the small open end in correspondence with the double siphon.

Species.

1. DUBIA, f. 2, *Pennant.*—Elongata, tenuis, perobliqua, tenuissime striata; hiatu mediocri; cardine fere edentato. Tuba bulbiformis, agglutinans.

2. DIFFICILIS, f. 4, *Deshayes.*—*G. dubia* similis, sed postice subcarinata, ventricosa, lata, ad terminum acuminata.—Differing from sp. 1 in being obliquely keeled, rather pointed posteriorly, and broad and swollen on the postero-ventral margin.

3. APERTISSIMA, f. 5, *Deshayes.*—Elongata, angusta; margine dorsali subelevato, ventrali post medium depresso; hiatu ventrali fere ad terminum extenso.—Remarkable for the hiatus, which reaches nearly to the end of the shell.

4. GIGANTEA, f. 12, *Deshayes*.—Ovato-elontaga, utrinque acuminata, dense striata; hiatu maximo.—A large fish-shaped species rather pointed at the ends, with large ventral hiatus and angular dorsal elevation.

5. CUNEIFORMIS, f. 1, *Spengler*.—Antice attenuata, acuminata, postice lata, ad terminum obtuse medio angulata; area dorsali elevata; hiatu antico breviusculo.—Broadly wedge-shaped, pointed sharply at the anterior and obtusely at the posterior end.

6. PHILIPPINENSIS, f. 17, *Deshayes*.—*G. cuneiformi* similis, sed magis attenuata, umbonibus terminalibus depressis, area antica oblique depressa.—Differing from *G. cuneiformis* in having the umboes quite terminal and bent downwards. There is an oblique depression behind the front hiatus.

7. BREVIS, f. 20, *Sowerby*.—*G. cuneiformi* similis, sed brevior, hiatu magno arcuato.—A shorter species than *G. cuneiformis*, with a shorter and more deeply arched hiatus.

8. INTERSECTA, f. 21, *Deshayes*.—Quam *G. brevis* brevior, postice laminis concentricis conspicuis et minoribus interstitialibus sculpta.—Like the preceding in form, but shorter, and neatly sculptured with concentric laminæ and fine striæ between.

9. RUGULOSA, f. 25, *Sowerby*.—Angusta, elongata, postice concentrice distanter lirata.—Nearly of the same form as *G. difficilis*, with the posterior area concentrically ridged.

10. IMPRESSA, f. 19, *Deshayes*.—Præcedenti similis, sed tenuiter postice striata, hiatu magno extenso, margine dorsali elevato.—The characters of this shell are a little uncertain, but it is shaped like the preceding, with the dorsal margin more elevated, the hiatus larger, and the posterior concentric striæ less conspicuous.

11. LAMELLOSA, f. 23, *Deshayes*.—Elongato-cuneiformis, compressa, area postica concentrice laminis concentricis crebre lirata.—Of a lengthened cuneiform depressed shape, with the flattened posterior area finely concentrically laminated.

12. OVATA, f. 9, *Sowerby*.—Ventricosissima, crassa, subovata, antice truncata, postice subacuminata, hiatu antico

breviusculo; umbonibus decurvis terminalibus.—Very thick and ventricose, rather oval, obtusely pointed at the back and truncated in front by the depression of the umboes, which are terminal.

13. DENTICULATA, f. 7, *Deshayes*.—Breviter cuneiformis, ventricosa, antice striis elevatis minute denticulatis sculpta.—Remarkable for the denticulated ridges with which the anterior area is sculptured.

14. LÆVIGATA, f. 26, *Deshayes*.—Brevis, subcompressa, lævis oblique cuneiformis.—Resembling sp. 1 in form, but small and quite smooth.

15. HUMILIS, f. 27, *Deshayes*.—*G. lævigatæ* similis, sed tenuiter concentrice striata.—Similar to *G. lævigata* in shape, but differing in being concentrically striated.

16. MACROCHISMA, f. 29, *Deshayes*.—Brevis, ventricosa, concentrice striata, antice producta, acuminata; hiatus brevi, lato.—Short, ventricose, concentrically striated, anteriorly produced, acuminated; hiatus broad and rather short.

17. HYALINA, f. 24, *Deshayes*.—Tenuis, semipellucida, angusta, elongata; margine dorsali parum elevato.—Elongated and very narrow, particularly in front, acuminated at the back, small and very transparent.

18. SPATHULATA, f. 6, *Deshayes*.—Tenuissima, compressa, cuneiformis, angusta, postice rugata, subtruncata, antice acuminata.—Very thin, flat, wrinkled and truncated posteriorly; rather pointed in front.

19. INTERRUPTA, f. 22, *Deshayes*.—Gracilis, tenuis, compressa, postice sulcis concentricis divisa, ad terminum subtruncata.—The figure is unfortunately a little more truncated than it should be. The posterior part of the shell is rather distantly and flatly grooved.

20. TENERA, f. 28, *Deshayes*.—Gracilis, tenuis, modioliformis, tenuiter striata; margine dorsali elevato; area dorsali ad terminum subtruncato.—Very thin and narrow, with a rather roundly truncated end.

21. RUPELLII, f. 15, *Deshayes*.—Solida, oblonga, postice obtuse acuminata, antice late truncato; hiatus maximo; umbonibus terminalibus tumidis.—In form this species has

more the appearance of a *Saxicava* than of a specimen of this genus; but the large hiatus characterises it as a *Gastrochæna*.

22. CUCULLATA, p. 14, *Deshayes*.—Crassa, cuneiformis, postice maximo inflata, ad terminum vix acuminata, antice angusta, acuminata; hiatu maximo; margine ventrali intus crasso, complanato; cardine dentibus tumidis.—Very thick and wedge-shaped, with a broad thickened margin.

23. TRUNCATA, f. 13, *Sowerby*.—Subrugosa, epidermide fusca induta; latere antico attenuato; latere postico late truncato. This large species is broadly square at the posterior end, and narrow and pointed in front.

24. LAGENULA, f. 18, *Lamarck*.—Parva arcuata tenuis, postice truncata, sulcata, antice subacuminata, tuba bulbiformi, quasi articulata.—Small thin arched valves truncated at the end. The tube has the appearance of being partly coiled or jointed.

25. PUPINA, f. 16, *Deshayes*.—Valvis ignotis. Tuba in sectiones divisa, per latus adhærens.—The valves are unknown, the tube is flask-shaped and divided into five sections. It adheres to flat surfaces of shells.

Species truncated, with a keel on the dorsal area.

26. ROSTRATA, f. 11.—Ovato-oblonga, subtortua, epidermide fusco induta, latere antico ante umbones producto, rotundo, hiatu maximo; latere postico undulatum truncato, oblique carinato; margine dorsali in aream planulatam elevato; margine ventrali convexo ventricosa.—This and the three following species are characterised by a keel dividing the posterior part of the shell. *G. rostrata* is strongly wrinkled, and its outlines are tortuous. The dorsal area is distinct, flattened, and raised at the margin.

27. RETZII, f. 10, *Deshayes*.—*G. rostratæ* similis, haud tantum tortua, sulcis haud tantum conspicuis; margine dorsali vix elevato, margine ventrali magis convexa.—Not so deeply grooved nor so tortuous as *G. rostrata*, with straighter dorsal and more prominent ventral lines.

28. *PLICATILIS*, f. 3, *Deshayes*.—Parviuscula tenuis recta, area postica conspicue sulcata, margine dorsali recto, margine ventrali paulo convexo.—Smaller than *G. rostrata* and much less tortuous in the outlines, but strongly plaited on the posterior area.

29. *MYTILOIDES*, f. 8, *Lamarck*.—*G. rostrata* similis sed lævigata, latere antico ante umbones producto, subacuminato; latere postico ante carinam profunde depresso; margine ventrali magis conspicue convexo.

Genus FISTULANA.

PLATE 471, f. 15, 16, 17.

Molluscum vermiforme arenicolum, tubam rectam clavatam ad terminum anticum clausam, ad terminum posticum divisam formanti. Valvæ rectæ, postice elongatæ, antice brevissimæ, utrinque truncatæ.—The valves are long and somewhat straight, with very short anterior sides, and the tubes are long, club-shaped, divided like those of *Teredo* at the narrow posterior end, and closed at the broader anterior end, where the valves are found. The *Fistulanæ* burrow in sand.

Species.

1. *CLAVA*, f. 15, *Lamarck*.—Valvæ quadratim elongatæ utrinque truncatæ, rectæ; hiatu arcuato; area antica brevissima pectinatâ. Tuba lævigata. — Valves elongated, straight, truncated at each end; hiatus arched, anterior side very short, pectinated. Tube smooth.

2. *AGGLUTINANS*, f. 17, *Deshayes*.—Valvæ *G. clavæ* similes sed magis angustæ; hiatu angulato. Tuba agglutinans, lapillis avenæque granis ornata.—The valves are like those

of sp. 1, but much narrower. The tubes in course of growth agglutinate the sand particles and minute pebbles surrounding them in their burrows.

3. GRANDIS, f. 16, *Deshayes*.—Valvæ latæ postice rotunde ventricosæ. Tuba concentricè annulata.—At the posterior end the valves are broad and curiously swollen outside, with a corresponding hollow inside.

Genus SAXICAVA.

PLATE 471, f. 1-14.

Molluscum perforans. Testa oblonga, æquivalvis, inæquilateralis, ad marginem ventralem hians; epidermide tenui induta; cardine ætate juniore acute bidentato, ætate majori edentulo; ligamento externo, super fulcrum affixo, impressione pallii postice late sinuato.—The rock-boring Mollusca of this genus have oblong, equivalve inequilateral shells, which when young have minute cardinal teeth. These disappear afterwards. There is an hiatus in the ventral margin for the passage of a byssus.

Species.

1. ARCTICA, f. 1, *Linnaeus*.—Recta, rugosa, elongato-subquadrata, postice biangulata; (ætate juniore ad angulum spinosa) ad terminum late truncato.—Not constant in shape, but inclined to be straight, angular, and broadly truncated. The young shells are narrow and rounded in front, ventricose at the posterior ventral margin, and spinose on the posterior angle.

2. AUSTRALIS, f. 2, *Lamarck*.—Tortua, rugosa; umbonibus magnis, elevatis, fere terminalibus; margine dorsali arcuato,

ad terminum elevato; margine ventrali inflato ad terminum elevato.—Having a tortuous appearance, the umboes and posterior end being raised, so that the dorsal margin forms a depressed arch; the ventral margin is swollen behind the hiatus.

3. RUGOSA, f. 3, *Linnaeus* (*Mytilus*).—Tenuiuscula, elongato-rhomboida, sub-lævigata, ad terminos utrinque depressa, antice rotunda, postice subtruncata, umbonibus inæqualibus, fere terminalibus.—Although named ‘rugosa,’ it seems to be generally a rather smooth shell. The ends are slightly depressed, so that the back curves slightly upwards in the middle. The umboes are nearly terminal.

4. GUERINII, f. 6, *Payraudeau*.—*S. arctica* similis, sed brevior, antice ventricosa, margine terminali declivi; umbonibus fere terminalibus.—The figure of this shell is not sufficiently attenuated posteriorly, and therefore does not represent that point of difference between it and *S. arctica*.

5. PURPURASCENS, f. 7, *Sowerby*.—Rectiuscula, attenuata, postice purpurea, oblique biangulata; angulo inferiori rugoso, subcarinato; umbonibus ante marginem anteriorem productis.—Strongly angular and keeled posteriorly, with a strong purple color. Umboes in front quite terminal.

6. SOLIDA, f. 12, *Sowerby*.—Crassa, dactyloidea, inæquivalvis, angulis posticis submoniliferis; area postica truncata, antica rotundata, umbonibus terminalibus; valva dextra quam sinistra magis profunda et extensa; margine dorsali complanato.—A very peculiar date-shaped species, in which the right valve is deeper than the left and overlaps it. The shell is thick, with the lower keel almost beaded. It is truncated at the back and rounded in front, with the umboes terminal.

7. TENUIS, f. 11, *Sowerby*.—Lævis, tenuis, postice attenuata, breviter truncata; antice subrotunda.—Thin, smooth, narrow towards the back, and truncated at the end.

8. SPINIFERA, f. 4, *Sowerby*.—Parva, subquadrata, conspicue biangulata, ad angulos spinosa; margine ventrali antice coarctata; umbonibus terminalibus.—A small shell, with two rows of spines placed on the posterior angles. The ventral margin is curiously divided by a deep sinus.

9. *SIMILIS*, f. 13, *Deshayes*.—Rhomboida, subcompressa, radiatim striata, ad angulum subserrata; postice lata, truncata, antice angustiuscula, umbonibus fere terminalibus.—A little like *S. arctica* in form, but depressed, externally rayed, partly serrated at the ridge, narrower in front, with the umboes nearly terminal.

10. *PHOLADIS*, f. 5, *Lamarck*.—Elongata, concentrice rugata, postice rotunde angulata, ventricosa, medio depressa, antice rotunde producta; margine dorsali rectiusculo, margine postico oblique truncato.—Longer and more ventricose than *S. arctica*, and much less angular; wrinkled concentrically.

11. *PETITII*, f. 8, *Deshayes*.—Subtortua, postice oblique inflata, ad angulum concentrice rugata, margine dorsali ad terminum elevato, margine ventrali sursum acclivi; medio depresso; antice inflato angustato ad terminum producto, rotundo.—Rather tortuous in form, narrow and depressed in front, inflated, wrinkled, and turned upwards at the back.

12. *SULCATA*, f. 9, *Deshayes*.—Lata, subcuneiformis, recta, rugis magnis concentricis undata; latere antico producto, rotundo, latere postico lato, ad angulum inflatum, ad terminum oblique truncato; margine dorsali recto.—A rather large species with rather large wrinkles, inflated at the angular part of the posterior side. It is deeper from apex to ventral margin than any excepting the two following.

13. *ANGASII*, f. 14, *A. Adams*.—Magna, irregulariter rhomboida, alta, crassa, inæquivalvis, flavido-rubescens, lævi, subtabulata; latere antico truncato declivi, umbonibus magnis, terminalibus; latere postico obtuse angulato, margine ventrali acclivi.—Large, irregularly rhomboidal, deep, thick.

14. *FLACCIDA*, f. 10, *Gould*.—Parva, tenuis, pallida, subquadrata, depressa, alba; antice brevi, medio depressa, postice quadratim rotundata.—This rather flat square species is of a pale colour, and in outline more nearly square than any of the others.

ROTELLA, *Lamarck*.

PLATE 472.

Testa depresso-conica solida; infra angulum callo umbilicali incrassata; intus naerea; apertura subtrigona; operculo corneo.—Trochiform, but depressed; pearly within, and having the region of the umbilicus thickened by a lens-shaped callus.

Species.

1. VESTIARIA, f. 1—5, 19, 20, *Linnaeus* (Trochus).—Supra infraque fere æqualiter convexa, fasciis strigis et maculis varie picta; angulo anfractuum obtuso; callo umbilicali lenticulari; anfractibus superne convexiusculis.—Excluding the next species, the average *R. vestiaria* may be described as nearly equal in convexity above and below the angle, the upper being slightly more conical, the lower more lens-shaped. *R. depressa* of A. Adams (f. 19, 20), although a little more depressed than most of the varieties, can scarcely claim distinction.

2. ELEGANS, f. 6, 7, 8, *Beck*.—Quam *R. vestiaria* magis conica, anfractibus magis planatis.—More straight-sided and conical than sp. 1. Generally larger, and bolder in pattern. A trayful of both species mixed can be sorted without much difficulty.

3. CALLOSA, f. 26, *Sowerby*.—Grisea minute nigro fuscoque variegata; ultimo anfractu lato, superne convexo, infra callo ventricosissimo incrassato.—The last whorl is wide and convex above, rounded at the outer margin, and thickened on the under side by a swollen callus.

4. GIGANTEA, f. 15, 16, *Lesson.*—Magna crassa conica, griseo late fasciata, angulatim nigro-maculata callo crasso rubro-purpureo; columella crassissima, apertura breviuscula; anfractibus superne lateraliter planatis.—This large species comes nearer in shape to *R. elegans* than any other. Besides its size, it is remarkable for its very thick columella and its broad purple red-tinted callus.

5. CONICA, f. 10, *Adams.*—Parva fusco-purpurea nigrescens nitens; superne conica alta; infra subplanata callo umbilicali parvo.—Small, darkly-coloured, and conical, with a small callus. The apex is light purplish brown, with a fire-like iridescence seen through the outer surface.

6. INFRAPLANATA, f. 11, 12, 13, *Sowerby.*—Subviride fusca, concentrice fusco nigrescenti irregulariter lineata, elevatim conica anfractibus planatis, subtus planata callo parvo, inter callum et marginem griseo fasciata; angulo subacuto.—The upper part is a straight-sided cone; the lower is a flat, almost concave disc, with the angle rather sharp.

7. ZELANDICA, f. 24, *A. Adams.*—Pallide fulva, rubro-purpurascenti, lineatim strigata; anfractibus infra suturam depressis, ad angulum biliratis; subtus tenuissime striatis columella crassa; callo umbilicali parvo, griseo-purpurascenti.—There is a depression under the suture towards the middle of the upper surface of the whorls, and a sort of flattened keel formed of two conspicuous ridges on the angle. The under surface is very finely spirally striated.

8. COSTATA, f. 21, 22, 25, *Valenciennes.*—Depresso-conica grisea vel fusca, rubro vel nigro tessellata; radiatim sulcis senis sculpta, costis inter sulcis vix elevatis planatis; callo umbilicali subplanato plerumque purpureo-rubescenti; columella crassa. Var. f. 21, *monilifera*, Lamk., costa suturali monilifera. Var. f. 22, *suturalis*, Lamarck, costa suturali supra suturam elevata; sutura profunda.—The sculpture of this species consists of flattened spiral ribs separated by narrow grooves. In the variety named *monilifera* the rib next to the suture is beaded. In that named *suturalis*, it is merely swollen, and makes the suture appear deep. In a number of specimens the varieties will be found to pass into each other.

9. JAVANICA, f. 23, *Lamarck.*—Alta conica tenuiuscula; supra angulum cærulea, spiraliter subdistanter sulcata, ad

suturam monilifera; ad angulum alba, infra interruptim fasciata; callo tenui; columella mediocri.—A lighter shell than *R. costata*, with slighter grooves and thinner callus and columella. The upper part of the last whorl and a band on the lower are grey, prettily marked; the sutural margin is beaded, and the apex whorls fawn-coloured.

10. TRILOBATA, f. 14, *Sowerby*.—Solida, lenticularis, griseo-fulva, maculis strigisque varie picta; callo umbilicali parvo, ad columellam juncto; columella trilobata.—The umbilical callus seems to form a part of the columella, making it, with the upper and lower parts, a three-lobed column.

11. STRIOLATA, f. 18, *A. Adams*.—Spiraliter striata, *R. trilobata* similis sed superne magis conica, angulo anfractu ultimi carinato; callo umbilicali parvo, ad medium columellæ juncto; columella superne infraque tenui.—More angular than the preceding, and although the callus is confluent with the columella in the same way, there are not lobes above and below.

12. GUAMENSIS, f. 28, 29, *Quoy*.—Ventricosa tenuiuscula depresso-rotundata pallida, fulvo rubroque varie maculata et flammata; anfractu ultimo magno, rotundo; spira parva; callo umbilicali roseo, moderate expanso.—The most rounded and ventricose of the species, with a moderately broad umbilical callus.

13. SAGITTATA, f. 9, *Hinds*.—Subdepressa, superne conica, fulva, maculis nigrescentibus sagittatis seriatim ornata; ultimo anfractu rotundato; callo parvo, circumscripto.—Resembling *R. guamensis* in form, with arrow-headed markings, rounded last whorl, and small circumscribed callus.

14. PERSPICUA, f. 17, *A. Adams*.—Minuta alba compressa lenticulari, apertura transverse ovata, callo ventrali semilunari.—The writer has not had a recent opportunity of examining this shell, and regrets that the figure has not come out well in the lithographic plate. It is not certain that it really belongs to the genus.

Class PTEROPODA.

PLATES 473, 474.

The Mollusca of this class are of simple structure, and are characterised externally by a pair of wing-like flappers, which are used as organs of locomotion in the sea. Although the animal parts are alike in the various genera and species, the shells are as different in form as any shells can be from each other. They range from an imitation of bivalve shells with the valves soldered together, and a simple tubular form to ordinary spiral and symmetrical Nautilus-like forms.

Genus HYALÆA, *Lamarck*.

Testa quasi bivalvis, tenuis, lateraliter appendiculata, symmetrica; apice nonspirali, apertura angusta, labio marginato, plerumque in rostrum producto.—The shell of an *Hyalæa* resembles that of a symmetrical bivalve with upper and lower valves soldered together, and the lower one produced beyond the upper, mostly in form of a beak. The apex (the lower part of the figures) is produced, sometimes curved, but never spiral. Near the apex are lateral appendages or produced points on each side.

Species.

1. TRIDENTATA, f. 5, *Forsk.*—Globosa succinea; rostro subquadratum producto; apice acuto; appendicibus binis distantibus.—The form is rounded, without the apex and rostrum, about as long as broad. The two lateral three-cornered appendages near the apex are broad and distant, and the apex sharply produced.

2. CUMINGII, f. 4, *Deshayes*.—Quam *H. tridentata* magis oblonga, rostro subtrigono magis producto, appendicibus paulo magis approximatis.—Rather narrower in proportion to length, rostrum more produced and trigonal, and appendages more approximate than in *H. tridentata*.

3. FLAVA, f. 3, *Orbigny*.—Flava, quam *H. tridentata* magis angusta, appendicibus acutis, approximatis, lateribus supra appendices contractis.—A yellow shell, thinner and more contracted at the sides than sp. 1.

4. AFFINIS, f. 10, *Orbigny*.—Quam *H. tridentata* angustior et magis tumida; rostro, apice et appendicibus magis productis.—The body part of the shell is much smaller in proportion to the rostrum, apex and appendages, which are much more produced than in sp. 1.

5. UNCINATA, f. 7, 8, *Orbigny*.—Dense fusca, ventricosissima, versus aperturam paulo angustata; apertura angusta, rostro elevato appendicibus lateralibus magnis, apice uncinato.—A dark brown shell, with the aperture narrow and the rostrum turned upwards. Most remarkable for backward curve of the apex.

6. GIBBOSA, f. 1, 2, *Rang*.—Elongato-subovata, alba altissime gibbosa; disco superiori oblique conico, medio angulato, ante angulum rugato; rostro producto, acelivi, bilobato; appendicibus acutis, approximatis apice deflexo.—The central gibbosity is raised into an angle, with wrinkles on the front slope, and the apical spine is bent downwards.

7. GLOBULOSA, f. 8, 9, *Rang*.—*H. gibbosæ* similis sed magis elevatim et rotunde inflata; apice breviori, uncinato, appendicibus lateralibus parvis.—The swollen part of the upper division is more raised and rounded than in sp. 6; the appendages closer and the apex short and hooked.

8. LÆVIGATA, f. 12, *Orbigny*.—Minuta alba, subrotunde complanata; rostro haud producto; apice acute uncinato.—A minute white shell with rounded and flattened discs. The mouth is semilunar, without any produced rostrum. Apex small and hooked.

9. QUADRIDENTATA, f. 17, 18, *Lesueur*.—Succinea, ovata, disco ventrali tumido, dorsali trilobato; apice producto rotundo bispinoso; appendicibus lateralibus approximatis,

labro subquadrato.—Dorsal disc longitudinally trilobate; two spines on the rounded apex, similar to the usual lateral appendages, making, as it were, a four-toothed termination.

10. *OBTUSA*, f. 13, *Sowerby*.—Pallide succinea, tenuissime hyalina tumida; apice subtruncato, vix bidentato; appendicibus bidentatis; labro subanguste producto.—The side appendages and obtuse apex have each two very small spines.

11. *LIMBATA*, f. 14, 15, *Orbigny*.—Pallide lilacina vel succinea, trigona; disco ventrali tumido; rostro elongato, infra medium leviter contracto, ad terminum acute biangulato, appendicibus alatis acuto bispinosis; apice obtuse bidentato.—The rostrum is lengthened, slightly contracted below the middle and separated into two sharp points at the end; the appendages are wing-like and double pointed, and the apex has two very fine points.

12. *LONGIROSTRIS*, f. 16, *Lesueur*.—*H. limbatae* similis, sed rostro infra medium acute contracto.—Differing from sp. 11 in the sharp contraction of the rostrum, at the end of the lower disc.

13. *MINUTA*, f. 19, *Sowerby*.—Minuta, cæruleo-alba subquadrata oblonga; appendicibus minutis; apice minutissime bidentato; apertura semilunari angusta; rostro nullo.

14. *INTERMEDIA*, f. 11, *Sowerby*.—Quam *H. intermedia* brevior, appendicibus magis distantibus et productis; apice magis producto et dentato.—Similar to sp. 13, but with the spines on the apex and the lateral appendages more developed.

Sub-genus *DIACRIA*.

15. *LABIATA*, f. 23, 24, *Orbigny*.—Alba elongata subtrigona; apertura labiata; rostro producto; appendicibus lateralibus elatis, distantibus, acute productis; apice longe producto, retrorsim uncinato.—Having all the parts of the typical *Hyalææ*, but in form and proportions leading to the sub-generic form *Diacria*.

16. *TRISPINOSA*, f. 20, *Lesueur*.—Alba, partim fusco irregulariter suffusa, quadrilateralis, compressa; disco ventrali planiusculo; disco dorsali trilobato, concentrice rugato; appendicibus magnis spiniformibus rectis, apertura angusto; labro

paulo producto; apice elongato recto spiniformi.—The dorsal disc (which is not shown) is trilobate and concentrically wrinkled, as partly shown in f. 27.

17. MUCRONATA, f. 27, *Lesueur*.—Quam *H. trispinosa* brevior et magis expansa; spinis lateralibus infra medium subdepressis; apice breviori.—Shorter and broader than sp. 16, with the lateral appendages placed lower, and the apex shorter.

Genus CLEODORA.

Testa hyalina, trigona, vaginiformis; apertura trigona vel semilunari utrinque acute angulata, plerumque in spinam producta; dorso plerumque angulato; apice acuminato.—The lower lateral appendages of *Hyalæa* are wanting in this genus, but in most cases the angles of the mouth are produced into spines.

18. CUSPIDATA, f. 30.—Vagina trigona, disco ventrali rotunde tumido, dorso angulato carinato, concentrice rugato; apertura subtrigona, labro in spinam elongatam acuminatim producto, angulis lateralibus utrinque longispinosi, apice producto.—The side angles of the aperture are low down in the shell, and then produced into two long upturned spines. The labrum is trigonal, and elongated into another spine, the apex being also produced and sharp. The back disc is beautifully wrinkled on each side of the angle.

19. PYRAMIDATA, f. 32, *Quoy*.—Vagina trigona lævi; disco ventrali subangulatim tumida; disco dorsali medio angulato, carinato; apertura trigona, acute producta, ad latera utrinque subspinosa; apice acuminato.—Resembling sp. 18, but the lateral incisions of the aperture are not prolonged, and the angles are not developed into spines, although very acute.

20. *LOBATA*, f. 31, *Sowerby*.—Vagina elongato-trigona, lævi; disco dorsali lobato; apertura subtrigona, labro producto, quinque-lobato, angulis lateralibus utrinque in spinam productis, spinis acutissimis; apice elongato acutissimo.—The spines at the angles of the apertures are very sharply produced; the dorsal disc is lobed, and the margin of the labrum is five-lobed; apex very long and produced.

21. *AUSTRALIS*, f. 29, *Orbigny*.—Vagina longitudinaliter trigona, lateraliter quadrigona; disco ventrali et disco dorsali medio angulatis, angulis lateralibus et apice acute productis, spinis nullis.—Both discs of the vagina are angular in the middle, so as to make it a four-sided figure; the apex, side angles, and point of lower disc are sharp, but not produced into spines.

22. *INFLEXA*, f. 21, 22.—Parva tenuissima alba trigona; apertura trigona, utrinque ad latera in spinam trigonam producta; vagina gradatim angustata, apice elongato, retrorsim uncinato.—Very small, transparent, and triangular, with produced triangular spines at the angles of the three-cornered aperture.

23. *DEPRESSA*, f. 25, 26, *Orbigny*.—Minuta alba hyalina, arcuatim depressa, apertura utrinque ad angulos profunde incisa, in spinam utrinque producta, marginibus productis, fere æqualibus tortuosim acclivibus; apice acuminato, deflexo.—Resembling *Cl. inflexa*, but with the upper disc flattened in the middle, and the two lips of the aperture nearly equal and curved upwards.

Genus BALANTIUM.

24. *RECURVUM*, f. 35, *Children*.—Subcompressa, late subtrigona, concentrice tenuiter rugata; dorso lobato; apertura semilunari; labro paulo producto, lobato; lateribus angulatis, subconvexis, ad aperturam acutis; apice in spinam

recurvam producto.—In shape like a flattened bell with angular sides, wrinkled concentrically; having a rather narrow aperture, the outer lip of which is narrowly produced beyond the inner.

25. INFLATUM, f. 33, 34, *Eyd. et Soul.*—Trigona, utrinque convexa, ad latera acute angulata, disco dorsali leviter quinque-lobata, transverse tenuiter lirata; apertura late hianti; labiis subæqualibus apice leviter recurvo, acuminato.—A three-cornered sheath with the labial margins nearly equal and wide apart; the dorsal disc is five-lobed, and the sharp apex gently turned back.

26. CHAPTALII, f. 37, *Eyd. et Soul.*—*Cl. inflata* similis sed disco dorsali haud lobato, labro paulo producto.—Of a rather more simple form than sp. 25, having both discs smooth and simple, and the edge of the dorsal disc is a little produced beyond that of the ventral.

27. ORBIGNYI, f. 36, *Sowerby.*—Vagina angusta subrotunda, elongata, versus apicem attenuata, deinde aciculata; apice minutissime globoso; apertura oblique subrotunda; margine dorsali producta rostrata; margine ventrali subarcuato.—In consequence of the union of the species of *Balantium* with those of *Cleodora*, it has become necessary to change the specific name of the species from *Balantium australe* to *Cleodora Orbignyi*.

Genus CRESEIS, *Rang.*

Testa angustissime pyramidata, tubularis hyalina acuminata. The shells of this genus may be described as hollow glass thornlike tubes.

28. ACICULATA, f. 45, 46, *Orbigny.*—Angustissima acuminata subtortua dorso oblique carinato; apertura subtrigona labro producto acuminato; apice aciculato vix curvo.—The

dorsal ridge is a little tortuous, and the apex is very slightly curved.

29. SPINIFERA, f. 43, 44, *Rang.*—Quam *C. aciculata* latior brevior, carina dorsali magis tortua.—Much broader and shorter than sp. 28, with the dorsal ridge more tortuous.

30. ROTUNDA, f. 47, 48, *Sowerby.*—Quam præcedentes magis obtusa; carina dorsali et apice obtusis.—More blunt than the preceding at all points; shorter and wider than sp. 29.

31. STRIATA, f. 38, *Rang.*—Latiuscula, recta tenuiter undulatim annulata, apice acuminato.—Shorter and more widely pyramidal than *C. spinifera*, very finely ringed.

32. VIRGULA, f. 39, 40, *Rang.*—Rotunda cylindrica; apertura simplici; apice obtuso, leviter arcuato.—A very simple tubular form, with the apex blunt and slightly bent.

33. CORNIFORMIS, f. 41, 42, *Orbigny.*—Quam *C. virgula* ad apicem magis recurva, acuta.—The apex is pointed and finely recurved.

TRIPTERA.

33*. COLUMNELLA, f. 49, *Rang.*—Bulbiformis, versus terminum ventricosa, ad terminum obtusa, lamina parva annulata; apertura contracta ovata compressa.—A little bottle-shaped shell, with obtuse termination.

Genus SPIRALIS, *Souleyet.*

Testa spiralis, fusiformis vel heliciformis, sinistralis, hyalina; columella plerumque acuta, labio externo tenui. Operculum ovatum, paucispirale.—The change from tubular

and discoid, to completely spiral forms in the same class, seems sudden and anomalous when the animal parts are so much alike.

34. FLEMINGII, f. 51, *Forbes and Hanley*.—Ovato-ventricosa; anfractibus quinis rapide crescentibus, ultimo magno breviuseulo; columella tortua; apertura infra obtusa.—The last whorl is ventricose, but rather shortened.

35. ARCTICA, f. 54, *Fabricius*.—Ovata, leviter punctata, anfractibus tribus, ultimo maximo; columella tortua, acuminata.—Of a more oval form than the preceding, with a more produced acuminate columella and aperture.

36. VENTRICOSA, f. 52, *Souleyet*.—Depresso-globosa, minutissima; anfractibus brevibus, ultimo depresso-ventricosa; apertura brevi, columella brevi tortuosa.

37. CLATHRATUS, f. 55, *Souleyet*.—Subgloboso-depressa striato-punctata; spira minuta; columella rectiuscula brevi; apertura semicirculari.—Depressed, subglobose, with punctured striæ; spire very minute; columella short and rather straight.

38. ROTUNDA, f. 56, *Orbigny*.—Depressa discoidea subumbilicata; spira brevi, anfractibus tribus depressis; apertura oblique rotunda, columella cum margine confluenti.—A depressed orbicular species, with short depressed spire of few whorls.

39. JEFFREYSII, f. 57, *Forbes and Hanley*.—*S. rotundæ* similis, sed ultimo anfractu magis ventricosa, spira magis conica, anfractibus quinis.

40. MACANDRÆI, f. 50, *Forbes and Hanley*.—Gracile fusiformis, lævigata; alba; spira producta; anfractibus septenis convexis obliquis; apertura pyriformi, columella et labio externo oblique tortuis.—A slender fusiform white shell, with a raised spire, formed of seven oblique whorls.

41. AUSTRALIS, f. 53, *Souleyet*.—*S. Macandræi* similis sed magis ventricosa, spira breviori, anfractibus quinis; labio externo ad medium sinuatim producto.—Shorter and broader than the preceding, with a sinuous bend at the middle of the outer lip.

Genus SINUSIGERA, *Orbigny*.

Testa minutā ovato-subglobosa, medio anfractus ultimi spiraliter sulcata, apertura subovata, labro sinuato, marginato bilobato, spira breviuscula.—In both the species known the outer lip is curiously sinuous, bordered, and bilobed.

42. CANCELLATA, f. 59, *Orbigny*.—Fusca cancellata, medio anfractuum sulcata ovata; spira producta, anfractibus tribus tumidiusculis; apertura subovata; columella tortua, labio externo marginato sinuato bilobatim acute producto.—Dark brown, cancellated, with a groove in the middle of the last whorl. The two sinuous lobes of the outer lip are produced and sharply square.

43. MICROSCOPICA, f. 58, *Gray* (*Struthiolaria*).—Fulva breviuscula, medio ad sulcum rubro-lineata, labio externo obtuse bilobato.—Shorter, and of a lighter colour than *S. cancellata*, with a pointed columella, and the two sinuous lobes of the outer lip more obtuse and less produced.

Genus CYMBULIA.

A boat-shaped, prickly integument takes the place of a shell in this genus.

44. C. PERONII.

Genus ATLANTA.

Testa nautiliformis carinata semicartilaginosa, spira planorbula.—Partly cartilaginous and formed like a little Nautilus.

45. PERONII, f. 63, 64, *Lesueur*.—Compressa, tenuissime hyalina; anfractibus tribus medio apparentibus, ad dorsum anguste et tenuiter carinatis; apertura subtrigona.—The broad and rather flat whorls, to the number of three, are visible in the centre, and have on the dorsal side a thin and narrow horny keel.

46. KERAUDRENI, f. 61, 62, *Rang*.—Subventricosa, tenuis hyalina; anfractibus duobus medio apparentibus; carina dorsale latissima; apertura subquadrata.—The whorls, only two of which are visible in the small umbilicus, are narrower and more tumid than in sp. 47, and the keel is much broader. The aperture is more squarely oblong.

47. INFLATA, f. 65, *Rang*.—Subcompressa, alba lævis; anfractibus apicalibus celatis, ultimo umbilicato, carina dorsali angusta; apertura arcuata, labio acute et longe producto.—The apical whorls are invisible, the central umbilicus being small, and the outer edge of the aperture is arched into a tongue-shaped process.

PHASIANELLA, *Lamarck*.

(Plates I, II. Thes. 475, 476.)

Testa ovato-pyriformis spiralis lævis, coloribus variegatis picta; spira conica acuminata; ultimo anfractu magno; apertura subovata, labio columellari arcuato, ad suturam calloso, labio externo simplici acuto. Operculum paucispirale semiovatum vel rotundum, extus callosum.—Rather oval in the body, with a spire rising into a modified pyramid; smooth and beautifully variegated with bands, spots, and flashes. Operculum calcareous and rounded or oval.

Species.

1. AUSTRALIS, f. 2-6, *Gmelin*.—Oblongo-pyramidata polita fasciis lineis maculis strigisque pictis; operculo semiovato.—The cross-bands and fluctuating stripes of the typical variety, f. 3, are very rich and beautiful, as are the lines and stripes and arrow-headed spots of other varieties. With such variations, it is impossible to admit the distinctiveness of Reeve's *P. venusta* (f. 6), the only differences being that the downward streaks of colour are cut through by white lines, and that the shell is thinner and more pyramidal. These characters are, however, interchangeable.

2. ZEBRA, f. 9, *Gray*, *MS.*—Ovata, crassiuscula, obtusa, strigis latissimis fuscis usque ad apicem oblique picta; anfractibus sex convexis.—The broad longitudinal bands are remarkable. The shell is thicker than *P. australis*, and more obtuse.

3. LENTIGINOSA, f. 20A, *Reeve*.—Elevata acuminata cinerea, fusco nigrescenti alboque seriatim punctata; anfractibus

convexis.—A pyramidal shell of dark colour, freckled with dark brown and white spots in lines.

4. *JASPIDEA*, f. 23, *Reeve*.—*Tenuiuscula* alta acuminata fulva, fusco alboque variegata et nebulata; anfractibus concaviusculis.—More acuminated and pyramidal than *P. lentiginosa*, with a partly suffused reddish-brown variegated painting. Few specimens are so elevated or so distinctly marked as the one figured by the author above quoted.

5. *ÆTHIOPICA*, f. 21, 25, 28, *Philippi*.—*Solida* breviuscula subroseo-fulva fusco variegata plerumque ad apicem et aperturæ marginem roseo tincta; apice obtuso, apertura subrotunda, brevi, labio crassiusculo.—More solid and blunt at the apex than *P. jaspidea*, variously coloured, but generally tinted with rose at the rounded apex and at the margin of the short aperture. Var. f. 25 is so curiously tessellated as almost to deserve specific distinction.

6. *ANGASII*, f. 27, *Philippi*.—*Pyramidata* acuminata, vivide cerisea, ad suturam et infra medium albo fasciata, fasciis fusco angulatum lineatis.—In form resembling *P. jaspidea*, but in colouring like *P. aethiopica*. It has not the rounded apex of the latter.

7. *FULGURATA*, f. 22, *Reeve*.—*Anguste* pyramidata fusca, luteo longitudinaliter fulgurata; anfractibus rectiusculis.—A narrow pyramidal shell with light angular flashes on a dark brown ground.

8. *NIVOSA*, f. 7, 8, *Reeve*.—*Parva* pyramidata cinerea vel rosea, fasciis lineisque minute variegata; anfractibus convexis breviusculis; labio externo subexpanso.—This might be described as a miniature imitation in colours, markings, and form, of the more typical variety of *P. australis*; but the whorls are a little shorter and more convex. Operculum rounded and thick.

9. *RECTICULATA*, f. 1, *Reeve*.—*Subglobosa* grisea, fluctuatum et fasciatum variegata, lineis minutis intermediis reticulata; anfractibus rotundis, ultimo magno; apertura ovata; operculo tumido.—Very ventricose; the last whorl almost globose. The markings are prettily fluctuated on and between spiral bands, with intermediate short lines.

10. VENTRICOSA, f. 18, *Quoy*.—Robusta breviuscula carneofulva, spiraliter minute sagittata, versus suturam fluctuatim maculata; anfractibus convexis.—Shorter and with more rounded whorls than *P. australis*, with spiral rows of minute arrow-headed markings.

11. VENOSA, f. 24, *Reeve*.—Ovata brevis solida pallide carnea, concentrice fusco fluctuatim lineata; anfractibus valide convexis, apice obtuso.—One of the thickest species, with nearly globose whorls streaked downwards with undulating lines.

12. SANGUINEA, f. 33, *Reeve*.—Subglobosa solida vivide rubra, fulvo fuscoque flammata et lineata; anfractibus rotundis, apice obtuso.

13. NERITINA, f. 10, *Dunker*.—Parva globosa tenuis rosea, lineis rubris angulatum oblique notata.—A little rosy globose shell, which might possibly be a very young *P. pulla* or *capensis*.

14. KOCHII, f. 15, 16, *Philippi*.—Brevis, ovata, quam *P. sanguinea* magis pyramidata.—Resembling sp. 12, but more pyramidal.

15. STRIGATA, f. 17, *Reeve*.—Parva ovata lutea, strigis paucis oblique notata.—A little buff shell, which may possibly be one of the varieties of *P. pulla*.

16. HISTRIO, f. 26, *Reeve*.—Parva elongata rosea, minute fluctuatim lineata, prope suturam rubro-maculata, anfractibus productis rotundis, ultimo breviusculo.—The whorls are more produced than in *P. Kochii*.

17. ELONGATA, f. 11, *Krauss*.—Solida ovata, ultimo anfractu elongata, apertura ovata.—Quite possibly a variety of *P. pulla*, but with the last whorl and aperture more lengthened.

18. VIEUXII, f. 12, 13, 14, *Payraudeau*.—Tenuis gracilis, lineatim variegatis; anfractibus elongatis, leviter convexis, apertura elongato-subpyriformi; operculo parvo.—The most slender of all the species.

19. PULLA, f. 30, 31, 32, *Linnaeus*.—Parva subovata varie picta; spira pyramidata, apertura breviuscula obliqua,

anfraetibus rotundis.—The variations in colouring of this pretty little shell are almost endless.

20. CAPENSIS, f. 34, 35, 36, *Dunker*.—Quam *P. pulla* brevior, apice obtusiusculo.—Much shorter and more obtuse than *P. pulla*.

21. RUBRA, f. 19, 20, *Pease*.—Parva, ovato-pyramidata, subrosea, minute puncticulata; columella alba callosa, infra conspicue dentata.—The columella ends in a tooth like that of the genera *Quoya*, *Clanculus*, &c.

22. PERFORATA, f. 29, *Philippi*.—Minuta, globosa, minute umbilicata, albida, varie tincta et maculata.—The only species with an umbilicus.

DELPHINULA, *Lamarck.*

(PLATES I., II. Thes. 477, 478.)

Testa turbinata, subdiscoidea, varie sculpta, late perforata, intus nacrea; anfractibus paucis, rapide crescentibus, plerumque angulatis rugosis; apertura rotunda, integra, magna. Operculum corneum multispirale.

The Delphinulæ are a kind of Turbones in form, but belong rather to the Trochi in having a multispiral horny operculum. The group to which such species as *D. Peronii*, *clathratus*, &c., belong is separated below, as the shells are not pearly within.

Species.

1. LACINIATA, f. 1, 6, *Lamarck.*—Crassa, rugosa; ultimo anfractu maximo, liris moniliferis numerosis purpureis et costellis rugosis subdistanter appendicibus nodosis, et rude ramosis armata; spira depressa, supra angulum planata; umbilico intus rugoso maximo, apertura infra subacuminata leviter sulcata.—At the angle is a row of large, thick, rudely-branched projections, which are generally raised, and then bent downwards above the whorl and divided into two, or sometimes three lobes. The second row has smaller and straighter projections; those of the third are larger, and those beneath, when present, are of various sizes. The var. f. 1 is irregular in having the projections at the angle straight, excepting on the penultimate, in which they are slightly bent over.

2. INCISA, f. 9, *Reeve.*—Quam *D. laciniata* magis globosa, liris moniliferis densis nigrescentibus; angulo anfractuum subrotundo.—More globose, smooth and rounded than sp. 1. The beading on the close-set blackish threads between the

branched projections are closer, and the interstices seem like incised lines.

3. EURACANTHA, f. 8, *Adams?*—*D. atrata* similis sed appendicibus ad angulum magnis, elatis, subramosis.—This may prove to be an undeveloped state of *D. atrata* or *D. laciniata*.

4. ATRATA, f. 12, *Chemnitz*.—Liris moniliferis ut in *D. laciniata*, frondibus ad angulos et medio nigris brevibus, leviter ramosis; labio interno superne sinuatim arcuato purpureo marginato.—The fronds are black and short, and at the angle scarcely divided into branches. It may be only a question of development.

5. ACULEATA, f. 7, *Reeve*.—Depressa, superne complanata, albidia, ad angulum rubro fasciata; anfractibus superioribus spinis trigonis planulatis armatis, ultimo frondibus spiniferis arcuatim productis ornato, infra angulum biseriatis frondosa, inter series minute spinosa.—The two varieties given in *Con. Icon.* plate 1 and plate 3, agree in having a line of red on the angle and following up the fronds.

6. TYRIA, f. 10, *Reeve*.—Alba, supra angulum et in umbilico purpurea, omnino granuloso-lirata, ad angulum spinis trigonis parvis ornata; anfractibus supra angulum convexiusculis; apertura carneo-fulva.—The coronal spines are very short, and the shell presents a peculiar contrast in colour, the top of the whorls and umbilicus being purple and the rest white.

7. IMPERIALIS, f. 11, *Reeve*, P. Z. 1842.—Olivacea, spinoso-lirata, ultimo anfractu purpureo-nigrescenti; anfractibus angustiusculis, ad angulum superiorem spinis magnis arcuatim elevatis, superne planatis coronatis, infra angulum tricostatis, costis brevibus crassis contrarie inflexis; apertura rotunda fulvo-iridescente; umbilico maximo.—The coronal spines are remarkably produced and curved upwards; at the ends they are flattened and parted like the antlers of a stag. The lower rows of spines are regular and distinct. The whorls are narrower, and the umbilicus larger, than in sp. 1, f. 8.

8. NODOSA, f. 5, *Chemnitz*.—Depresso-discoidea superne roseo-purpurea, infra alba, solida, seriatim granulosa; anfractibus superne nodulis maximis crassis, plerumque albidis coronata; apertura alba, infra acuminata.—The coronal pro-

jections are thick, rounded, and deflected, reaching inwards to the suture.

9. *DISTORTA*, f. 4, *Linnaeus* (Turbo).—*Rubra purpurascens depressa*; anfractibus infra angulum triseriatim spinosis, supra granoso-liratis, rugis crassiusculis undatis; ad angulum breviter squamoso-nodulosis.—Of an irregular growth, the form of the upper part of the whorls being modified by the undulations of the top mixing with the thickened coronal projections.

10. *FORMOSA*, f. 2, *Reeve*.—*Depressa discoidea, spiraliter granoso-lirata ochracea, rubro tineta*; anfractibus angulatis, superne undulatis, ultimo ad angulum spinis crassis breviusculis coronato, infra medium et ad marginem inferiorem carina angulariter squamosa cincto; umbilico amplissimo.—Red-tinted orange in colour, and depressed in form. Mr. Reeve's f. 2 b, *Con. Icon.* does not belong to the same species.

11. *SPHERULA*, f. 3, *Kiener*.—*Transverse ovata, fulvo-coccinea, superne granoso-lirata, conspicue rugis magnis undata, ad angulum spinis elevatim productis curvis superne planatis et divisis coronata*; infra quinqueseriatim crasse spinosis.—In the curved and antler-like projections forming the crown of this remarkable shell, it resembles *D. imperialis*, to which it is not otherwise allied. On the upper part of the whorls are tumid undulations, radiating like wheel-spokes from the suture; a character in some degree presented by *D. formosa*, *D. distorta*, and *D. nodosa*. The specimen figured by Kiener has the coronal spines short, undivided, and regular. They are no doubt worn, and in the figure appear to be artificially arranged, or perhaps restored.—The specimen which I am now enabled to figure from the collection of the late Mrs. De Burgh, is almost peerless in beauty.

12. *STELLARIS*, f. 14.—*Orbiculari-discoidea alba, sparsim purpureo tineta*; spira depresso-plana, anfractibus superne concavis, ad angulum squamato-carinatis; squamis trigonis; infra squamato-spinosis.—From the figure in the 'Voyage of the Sulphur,' I should rather take this to be the young of some larger species; the tops of several being flattened and starlike in the same way.

13. *RADIATA*, f. 13, *Kiener*.—*Subconica, albida, maculis lineisque rubris radiantibus supra angulum ornata*: angulo

depresso angulatum squamoso, anfractibus infra angulum seriatim spiniferis; umbilico parviusculo.—Not unlike a Trochus of the Calcar division.

14. *MURICATA*, p. 18, *Reeve*.—Subconica, pallide fulva, rubro lineata et maculata; infra angulum carinis tribus prominentibus spiniferis cincta.—Differing from *D. radiata* in being more stout and Turbo-like, with the top row of projections not conspicuously larger than the others.

Genus LIOTIA, *Rang.*

Testa turbinata crassiuscula varie sculpta, albida, non nacreata, umbilicata; apertura rotunda; operculum corneum multispirale.—The shells of this genus might be placed with the Delphinulæ, but are not pearly. Most of them are more closely spiral than the true Delphinulæ, and have a smaller umbilicus.

15. *PERONII*, f. 19, *Kiener*.—Subrotundato-depressa, seriatim foveolata, superne varicosa; anfractibus superne angulatis, undulatum carinatis; apertura extus laqueata, intus subcontracta, umbilico parvo.—Very curiously pitted, particularly near the margin of the umbilicus. The varices vary, and in some specimens commencing at the suture do not reach farther than the upper angle of the whorl.

16. *CIDARIS*, f. 20, *Reeve*.—Depresso-subglobosa multivaricosa, varicibus rotundis distinctis per liras spirales junctis.—The rather frequent and distinct varices are united by several spiral ridges.

17. *SCALAROIDES*, f. 24, *Reeve*.—Globosa, anfractibus varicosis; varicibus magnis paucis.—In this species the large varices are not united by spiral ribs as in the last.

18. *VARICOSA*, f. 25, *Reeve*.—Angulato-globosa, omnino foveolata, varicosa; varicibus prominentibus puncturatis;

interstitiis prope marginem inferiorem profunde foveolatis; umbilico parvo.—A union of the pitted and the varicose sculpture.

19. *DEPRESSA*, f. 27, *Kiener*.—Subquadratum angulatum, superne planatum, seriatim puncturatum; varicibus nodosis superne angulatis, umbilico majusculo; apertura extus lobata.—Strongly angulated at the upper part of the whorls by the depression of the spire.

20. *SIDEREA*, f. 17, *Reeve*.—Depresso-angulatum, costis concentricis ad marginem nodosis et carinis spiralibus cancellatum; apertura rotunda, margine crasso crenato.—A depressed species with broad cancellations.

21. *CANCELLATA*, f. 15, *Kiener*.—Depressa discoidea, anfractibus angustis nodoso cancellatis; umbilico latissimo; apertura polygonali.—More depressed than the preceding and more closely cancellated.

22. *CRENATA*, f. 21, *Kiener*.—Depresso-subconicum, puncturatum; anfractibus angulatis, ad angulum bicarinatis; carinis angulatum crenatis; apertura rotunda, margine incrassato, lobato.—Remarkable for the double keel on the circumference of the whorls, and for the thickened and nodose character of the margin of the aperture.

23. *DISCOIDEA*, f. 26, *Reeve*.—Depressa discoidea, tenuiter spiraliter lirata ad angulum carina duplicata, foveolata cincta; margine aperturæ crassa nodosa.—The double keel is divided into pits by cross septa.

24. *CLATHRATA*, f. 16, *Reeve*.—Compressum, ultimo anfractu rotundo, æqualiter liris concentricis æqualibus cancellatum; apertura rotunda, margine crasso, laciniato; umbilico magno.—The narrow rounded last whorl is cancellated finely.

25. *COBIJENSIS*, f. 22, *Reeve*.—Quam *L. clathrata* magis rotunda; magis rude cancellata, margine apertura haud tantum incrassata.—More globose and more widely latticed than the preceding.

26. *FENESTRATA*, f. 23, *Carpenter?*—Minuta, subglobosa equaliter liris spiralibus et septis concentricis cancellata; foveolis profundis.—More deeply and not so finely latticed as *L. clathrata*; less globose than *L. cobijensis*.

MONOGRAPH OF THE GENUS

STYLIFER, *Broderip*.

PLATE 479.

Testa tenuissima, plerumque pellucida aut semipellucida, polita, multispiralis globosa vel subulata; apice styliformi, plerumque obliquo.—The Mollusca forming these little glassy shells are parasitic, nesting in holes which they bore in Star-fishes and Echini. One species, *S. Turtoni*, is found on a common British Echinus.

Globose species.

1. *ASTERICOLUS*, f. 4, 5, *Broderip*.—Tenuissimus rotundus, pellucidus, spira brevissima acuta; apice styliformi; ultimo anfractu inflato; apertura postice angusta, antice subquadrata; labio externo supra medium flexuosim producto.—No other species has so large a body-whorl and so small a spire.

2. *OVOIDEUS*, f. 7, *A. Adams*.—*S. astericolo* simillimus, utrinque magis acuminatus, labio externo haud tantum inflexo. The aperture is a little pointed, and the apex a little more produced than in sp. 2. Also the outer lip is less inflected.

3. *TURTONI*, f. 9, *Broderip*.—Quam *S. astericolus* minor, apice magis acuminato.—Like sp. 1, but smaller, and with a more produced and pointed spire in proportion to the body whorl.

4. *DUBIUS*, f. 6, *Baird*.—Quam *S. astericolus*, &c., spira magis producta, anfractu penultimo subelevato et inflato;

apertura obliqua, margine superne inflexo.—The last whorl but one of the spire being rather raised and inflated, gives this species a more pyramidal appearance than other globose forms.

5. JAPONICUS, f. 17, *A. Adams*.—*S. dubio* similis, rectiusculus; ultimo anfractu ad suturam tumido; columella solidiuscula.—The form is nearly the same as in the preceding, the last whorl being a little tumid near the suture. The columella is solid.

6. GUENTHERI, f. 1, *Angas*.—Globoso-pyramidatus; spira elata, apice flexuoso, ultimo anfractu inflato, prope suturam subplanato, deinde declivi, infra late rotunda, sinu columellari late sinuato.—This and the following seem to combine the characters of the globose and subulate species. A slight leaning shelf is seen on the upper part of the whorls.

7. CUMINGIANUS, f. 2, *A. Adams?*—Infra globosus, spira elevata pyramidata; anfractibus brevibus gradatim crescentibus, apice reflexo; ultimo maximo.—The spire is more elevated and, consisting of more numerous gradually increased whorls than in the last species, presents a greater contrast between the two parts of the shell.

8. BARRONII, f. 16, *A. Adams*.—Ovatus, anfractibus duobus ultimis subcylindricis, prope suturam valide angulatis, infra angulum subcontractis; apertura subquadrata; apice styli-formi.—The form is peculiar, having a produced angular ledge at the upper part of the two last whorls.

9. EBURNEUS, f. 8, *Deshayes*.—Ovato-pyramidatus, alba polita; apice brevi, acuto, anfractibus paucis gradatim crescentibus, ultimo rotunde subovato.—Of an ovate-globose form, different from the other species, but as found upon Asteroids and Echini in the Mauritius, pronounced by Deshayes to be Stylifers.

10. ATTENUATUS, f. 10, *Sowerby*.—Parvus tenuis angustissimus rectilateralis; apice ad latus sinistrum inclinato, acutissimo; apertura subtrigona.—Extremely small and narrow.

11. CORALLINUS, f. 11, *Chemnitz*.—Quam *S. attenuatus* infra latior, anfractibus parviusculis apice ad latus dextrum inclinato.—The lower whorls are more pyramidal than *S. attenuatus*, and the apex turned slightly in the other direction.

11*. *FASTIGATUS*, f. 12, *A. Adams*.—Solidiusculus, pyramidatus; anfractibus brevibus, rectis; apice acuminato, paulo ad dextram recurvo, ultimo anfractu brevi.—With short straight-sided whorls, and apex slightly curved to the right.

12. *SOLIDUS*, f. 3, *A. Adams*.—Subcylindricus, anfractibus convexusculis, apicalibus sex, tenuibus angustissimis deinde subito crescentibus.—From the narrow apex suddenly enlarging and forming a nearly cylindrical shell.

13. *EXARATUS*, f. 13, *A. Adams*.—Solidus, subroseus, altus, anfractibus declivibus, versus suturam subdepressis.—Solid, elevated, and slightly tinted.

14. *SUBULATUS*, f. 14, *Broderip*.—Tenuissimus tortuosus; apice ad sinistram recurvo; apertura subquadrata; labio externo supra medium sinuatim producto.—Very thin and bubble-like, with the apical whorls turned to the left and the outer lip sinuously produced above the middle.

15. *THOMASII*, f. 15, *Sowerby*.—Tenuis altus rectus versus apicem subito contractus; apertura subquadrata.—A very tall straight figure with a thin straight needle-like apex.

16. *SPECIOSUS*, f. 18, *A. Adams*.—Brevis, pupæformis, apice aculeato, anfractibus subinflatis; apertura parva; labio externo flexuoso.

17. *BULBIFORMIS*, f. 19, *Sowerby*.—Solidiusculus pyramidatus, infra rotundus; apice paulo retrorso; apertura rotunda.—A very plain, straightly pyramidal shell.

18. *SUBANGULATUS*, f. 20 (faulty), *A. Adams*.—Quam *S. corallinus* latior; labio externo flexuosim producto.

PRINCIPAL SPECIES OF THE GENUS

SILICUARIA, *Brug.*

(*Tenagodus*, Schum.)

Testa tubuliformis, inæqualiter spiralis, spiraliter inciso-fissurata; versus aperturam irregulariter contorta. Operculum corneum multilaminatum.

The Silicuariæ are, like Serpulæ, spirally coiled; often more or less closely towards the apex; loosely and irregularly afterwards. They are distinguished from Serpulæ by an incised fissure along the upper part of the tube, either simple or articulated. Our list is necessarily incomplete, because many of the species described by Mörch are unknown to collectors, and appear to be founded on slight and interchangeable characters.

Species.

1. *OBTUSA*, f. 3, 4, *Schumacher*.—Tuba lata, spiraliter striata crassiuscula, pyramidaliter spirata, nonnunquam versus apicem cylindrica, anfractibus approximatis, intra lævigatis, extra concentricè inciso-rugatis, versus aperturam laxatis; fissura integra.—The normal form is represented by f. 4, but f. 3 represents the variation which gave the original name '*obtusa*' to the species, the whorls being coiled closely near the apex and forming a cylinder. The fissure is simple. The name '*anguina*' has been erroneously applied to this species; it belongs to sp. 13.

2. *AUSTRALIS*, f. 7, 8, *Quoy*.—Quam *S. obtusa* striis spiralibus crassiores, concentricis, vix incisis; fissura filis septiformibus interrupta, marginibus elevatis, versus aperturam simplici.—The Mediterranean species has the slit simple and open, but the Australian shells have it articulated by little

cross-bars, which, with the upturned edges of the cutting, form a sort of chain.

3. PONDEROSA, f. 5, *Mörch*.—Quam *S. australis* latior, magis ponderosa; anfractibus versus apicem rotundis, læviusculis, approximatis.—The tube is thicker, and the coils more rounded and heavy than those of *S. australis*.

4. CUMINGII, f. 6, *Mörch*.—Tuba angusta elongata alba, lentissime crescens, laxe spirata, spiraliter et concentrice striata; fissura dense articulata.—A rather closely striated white narrow tube, very slowly increasing and rather loosely coiled.

5. LACTEA, f. 1, 2, *Lamarck*.—Tuba parva candida, vel fusco vel purpureo tincto, frequenter aggregata; leviter striata; anfractibus apicalibus spiraliter pyramidatis; fissura minute articulata.—A small species found in conglomerated masses. The little tubes are nearly smooth, and their first coils pyramidally spiral. The slit is closely articulated.

6. REENTZII, f. 9, *Mörch*.—Tuba breviuscula angusta, pyramidaliter spirata, fusca crassiuscula, concentrice inciso-sulcata; fissura dense articulata, spiraliter distanter subsulcata.—A narrower tube than *S. senegalensis*, of a burnt brown colour and pyramidally spiral towards the apex.

7. SENEGALENSIS, f. 17, *Recluz*.—Tuba rubro-fusca solida, lente crescens, extra concentrice rugata, spiraliter leviter sulcata, intra lævigata, fissura versus apicem articulata, versus aperturam simplici.—As compared with the preceding species, the tube is of more equal diameter throughout.

8. ENCAUSTICA, f. 18, *Mörch*.—Tuba parva crassa, irregulariter pyramidata extus incrassata; fissura versus spiram clausa, deinde articulata, versus aperturam simplici.—The tube is roughened on the outside by an apparent incrustation. The fissure is closed towards the apex, articulated next, and simple towards the aperture.

9. TOSTUS, f. 10, *Mörch*.—*S. senegalensi* similis sed ad apicem turbinata.—This is drawn from a specimen named as above in the British Museum, and being unable at the moment to refer the description, I can state no difference of specific importance between it and sp. 17, except that the tube is a little smoother.

10. TROCHLEARIS, f. 14, *Mörch*.—Tuba pallide fulva elongata, versus apicem usque ad medium dense pyramidaliter spirata, extus concentrice rugata; deinde lævigata, longe laxata; fissura usque ad aperturam articulata.—A pretty pale fawn species, gradually passing from a closely coiled concentrically grooved tube to a smooth loosened one.

11. BERNHARDI, f. 15, *Mörch*.—Tuba pallide fulva, fusco tincta, elongatissima, tenuis, angusta, longitudinaliter striata, ad apicem spiraliter pyramidata, deinde laxata, declivis; fissura articulata usque ad aperturam.

12. TAHIETENSIS, f. 16, *Mörch*.—Tuba angusta fusca laxata cancellata; fissura simplici.—The specimen is only fragmentary; it is cancellated and much relaxed, with a simple and rather wide slit.

13. ANGUINA, f. 11, 12, 13, *Linnæus*.—Tuba fulva, alba vel purpurea, varie contorta, solida, lente crescens, longitudinaliter lirata, liris echinatis, interstitiis subexcavatis; fissura superne articulata, versus aperturam simplici.—There is a great variety in the mode of contortion, the prominence of the ridges and of the spines upon them, and the greater or less length of articulations in the fissure.

Genus VANIKORO, *Quoy et Gaimard*.SYN. *Merria*, Gray; *Narica*, Recluz.

PLATE 482.

Testa globosa, paucispiralis cancellata vel decussata, epidermide tenui induta, perforata, umbilicata; umbilico in canalem desinenti; apertura ampla, margine simplici; operculo corneo.

Subglobose, cancellated, generally white, with a thin epidermis; perforated, with an umbilicus ending in a slight canal. Operculum horny, non-spiral.

Species.

1. CANCELLATA, f. 7, *Recluz*.—Oblique ovata, oblique sinuatim costata, filis tenuibus decussata, umbilico magno; apertura maxima; spira depressa.—This typical species has thick flexuous oblique ribs, crossed with narrow threads. The mouth is very wide.

2. CIDARIS, f. 10, *Recluz*.—Quam sp. 1, haud tantum obliqua, leviter costata, apertura alta, columella rectiuscula, apice producto, parvo.—Less oblique than sp. 1, more lightly ribbed, aperture high as well as wide, columella rather straight, a little swollen in the centre.

3. GUERINIANA, f. 8, *Recluz*.—Obliqua, distanter oblique costata; ultimo anfractu supra aperturam elevato; umbilico latissimo; apertura magna lata depressa; apice depresso.—A very oblique small species, with oblique distant ribs crossed by very light threads, a wide aperture, and very wide umbilicus. The straight columella reaches to the suture.

4. LIGATA, f. 19, *Recluz*.—Alta globosa, distanter oblique costata; umbilico angusto; anfractu ultimo supra aperturam elevato; apice producto.—Much like *V. Gueriniana* in the

distance of the ribs, but less oblique, more globose and high, with only very narrow umbilicus.

5. CLATHRATA, f. 3, *Recluz.*—Parva obliqua, valide costata tenuiter spiraliter lirata; apertura brevi lata; umbilico latissimo.—A little more close in the sculpture than *V. Gueriniana*, and with a still wider umbilicus.

6. RUGATA, f. 22, *A. Adams.*—Subovata alta, undis magnis et liris spiralibus partim rugata, anfractu ultimo dorso magis leviter cancellato; umbilico lato, columella recta, ad suturam extensa, apertura semicirculari.—Oval in the upright direction, broadly cancellated excepting on the back of the last whorl; apex produced, umbilicus large, aperture semilunar.

7. SOLIDA, f. 1, *Sowerby.*—Solida subglobosa; spira producta, late cancellata; costis lirisque in ultimum anfractum evandis.—The cancellation becomes obsolete in the later whorls.

8. PLICATA, f. 9, *Recluz.*—Globoso-subovata, tenuiter oblique lirata, spiraliter tenuissime striata; spira subacuminata, umbilico angusto; apertura infra lata, umbilico angustiusculo.—Finely cancellated and with a rather pointed apex.

9. PETITIANA, f. 18, *Recluz.*—Magna tenuis, tenuiter oblique lirata, spiraliter striata; spira producta anfractibus duobus convexis, umbilico angustato, apertura magna, columella arcuata.—Large, rather thin, finely cancellated, the oblique lines predominating; spire consisting of two dome-shaped whorls; umbilicus narrow, aperture large with arched columella.

10. DESHAYESIANA, f. 17.—Quam *V. Petitiana* altior, magis ovata costis lirisque ad ultimum anfractum evandis; apertura magna, alta; umbilico angustiori; columella rectiuscula.—More upright oval than sp. 9, the ribs and spiral ridges disappearing in the last whorl; columella rather straight.

11. GRANULOSA, f. 4, *Recluz.*—Subobliqua costis lirisque reticulata, ad angulos monilifera; apertura subangustata; apice subacuminato; umbilico subrotundo.—The sculpture gives rather the appearance of network knotted at the angles, than that of cancellation.

12. SEMPLICATA, f. 5, *Recluz*.—This shell cannot be here described, there being some uncertainty as to the specimens.

13. SOULEYETANA, f. 21, *Recluz*.—Globosa, altiuscula, subacuminata, æqualiter cancellata; umbilico parvo; columella recti.—The cancellations are moderately small, regular, and distinct. Umbilicus small, columella rather straight.

14. HELICOIDEA, f. 20, *Le Guillou*.—Lata, oblique et flexuosim costata, inter costas foveolata; ultimo anfractu oblique crescenti; umbilico angustiusculo; apertura alta, subpyriformi; columella rectiuscula.—The ribs are oblique and flexuous, and not interrupted by the spiral lines which cause pits in the interstices.

15. GAIMARDI, f. 13, *A. Adams*.—Latissime cancellata; spira elevata, acuminata; canali umbilicali angusto.—A small shell with few strong crossbars.

16. CUMINGIANA, f. 24, *Recluz*.—Subglobosa, conspicue carinata, inter carinas concentrice subsulcata, umbilico profundo, apertura semicirculari.—The spiral keels are prominent and crossed by concentric sulci.

17. CUVIERIANA, f. 23, *Recluz*.—Subcærulea et fulva, tenuiter spiraliter et concentrice striata; ultimo anfractu infra oblique expanso; umbilico maximo; apertura lata, depressa.—Much more finely sculptured in both directions. The umbilicus and the lower part of the aperture are both wide and oblique.

18. DISTANS, f. 14, *Recluz*.—Tenuis elevata angusta acuminata, distanter oblique concentrice costata, spira elevata, umbilico angustissimo; apertura auriformi.—There are no traces of spiral ridges, but distant oblique concentric ribs.

19. ROSEA, f. 15, *Recluz*.—Obliqua, rosea, tenuiter oblique cancellata; umbilico latissimo; apertura oblique semicirculari; spira acuminata.—Of a rosy tint, finely and evenly cancellated.

20. ACUTA, f. 12, *Recluz*.—Depresso-subpyramidata, obliqua, subæqualiter cancellata; umbilico latissimo; apertura infra lata, columella ad suturam extensa.—An oblique species with wide umbilicus and aperture, rather finely and equally cancellated.

21. IMBRICATA, f. 11, *Pease*.—Parva obliqua angusta, regulariter et tenuiter reticulata; umbilico maximo, apertura valde obliqua; columella elongata.—The aperture is more oblique than in any other species.

22. RECLUZIANA, f. 2.—Elevata angusta, regulariter cancellata; spira acuminata; apertura brevi pyriformi, umbilico mediocri.—One of the most pyramidal species with the shortest proportionate aperture.

23. ELATA, f. 6, *Sowerby*.—Ovato-acuminata, leviter cancellata; spira elevata; umbilico parvo; apertura pyriformi.—More ovate and more lightly cancellated than the preceding; umbilicus small.

24. SEMISOLUTA, f. 16, *Sowerby*.—Parva ovata elevata; spira acuminata; ultimo anfractu laxe adhærenti; apertura angustissima, elongata; umbilico angustissimo.—A very narrow rather coarsely cancellated minute shell with very elevated spire.

Genus NERITOPSIS, *Grateloupe*.

PLATE 482.

Testa subglobosa spiraliter granoso-costata; spira brevi; apertura magna; labio interno crasso planulato medio quadratim emarginato; labio externo intus incrassato. Operculum crassum, testaceum, nonspiral, ad columellam quasi-articulato.—Subglobose, spirally granularly ribbed; spire short, aperture large; inner lip thickened, flattened, and with a square notch in the middle. Outer lip thickened and striated within. Operculum thick shelly, not spiral, with curious articulation on the columellar side.

SYN. *Radula*, Gray, not Klein.

Species.

NERITINA RADULA (Nerita), *Linnaeus*. Hab. Ceylon. Only one species known.

(Shell and operculum, bottom figures in plate 482.)

PLANAXIS, *Lamarck.*

(Plates I., II. Thes. Pl. 483, 484.)

Testa ovato-subpyramidata, solida, plerumque spiraliter sulcata aut striata; apertura intus crenato-dentata, supra infraque subcanaliculata; columella prope suturam callosa, infra ad terminum planata et truncata.

The aperture terminates in a notch or canal at each end, the callosity at the suture forming one in conjunction with the outer lip, and there being a notch at the lower termination where the columella is flattened and truncated.—The genus *Quoyia* is composed of two species (*decollatus* 11, and *Michaudi* 12), which have a notch cut out close to the junction of the outer lip behind the callus, which is thereby sharpened into a tooth.

Species.

1. *SULCATUS*, f. 10, 11, *Born.*—Magnus solidus late pyramidatus, sulcis spiralibus crassis rotundis cinctus; apertura subtrigona, intus valide dentata; columella lata truncata; labio externo superne subflexuosim depresso.—Of a greyish colour, mottled and marked variously with brown.

2. *ENCAUSTICUS*, f. 32, *Smith.*—*P. sulcato* similis sed brevior, sulcis fere evanidis, maculis quadratis tessellatus, anfractibus superioribus rotundis, paucis.—The markings have a tessellated character, the grooves are faint and the upper whorls few, round and short.

3. *BREVICULUS*, f. 3.—*P. sulcato* similis, sulcis fere evanidis, maculis fuscis oblongo-quadratis medio ornata.—Although shorter than sp. 1, it has the same pyramidal form, with

sulci almost obsolete and a row of tile-like markings in the middle of the last whorl.

4. SAVIGNYI, f. 4, *Deshayes*.—Quam *P. sulcatus* brevior, sulcis haud profundis; ultimo anfractu infra medium angulato, subconcavo.—Like No. 1, but shorter, with shallow grooves, and an angle below the middle of the last whorl, which is concave beneath.

5. OBSCURUS, f. 33, *A. Adams*, Proc. Zool. Soc. 1851.—Angustus pyramidatus, fuscus et cinereus, strigis nigrescentibus undatis flammulata, liris rotundis spiralibus cincta; anfractibus altis, ultimo obtuse angulato; apertura curta, intus valide dentata; margine late fusco, labio externo prope suturam depresso; columella alba, planata truncata.—Of the same general character as the four preceding, but narrower, with aperture shorter and whorls elevated.

6. CRASSISPIRA, f. 14, *Smith*.—Subcylindricus, griseus, maculis linearibus catenatis ornata; spira obtusa anfractibus elevatis; apertura brevi infra subtruncata, fusco marginata; columella infra planata, truncata.—The whorls exhibit a slow increase, and thus give a cylindrical appearance to the shell, which is prettily streaked with chain-like markings downwards.

7. PLANICOSTATUS, f. 12, *Sowerby*.—Elevatim pyramidatus solidus fusco-nigricans, inter liras planatas profunde sulcatus; apertura breviuscula margine, intus lirato, extus crenato, columella late planulata truncata.—Sculptured by flattened ribs between deep grooves.

8. SUTURALIS, f. 13, *Smith*.—Parvus albus sulcatus pyramidalis; apertura subtrigona, labio externo denticulato.—A small white pyramidal shell slightly grooved, with teeth on the outer edge of the aperture.

9. CASTANEUS, f. 34, *Smith*.—Pyriformis acuminatus castaneus tenuis; anfractibus rectiusculis, ultimo infra subrotundo, apertura trigona, intus lirata columella angusta.—Chestnut in colour, pyramidal in form, and quite smooth.

10. BRASILIANUS, f. 15, 16, *Lamarck*.—Elevatim pyramidatus albus, lævigatus, epidermide piloso indutus; anfractibus convexiusculis; apertura brevi lutea, labio externo superne

deflexo; margine intus incrassato, liratum dentato.—A smooth, pyramidal, thick white shell, with a velvety epidermis.

11. *DECOLLATUS* (Quoyia), f. 2, *Gray*.—Fulvus et griseus, leviter strigatus, elevatim pyramidatus, spiraliter valide sulcatus ultimo anfractu obtuse angulato; apertura subtrigona; columella crassa, postice excisa et unidentata, antice truncata, labro prope suturam subdepresso, antice rotundatim expanso.—The apex appears to be deciduous, and the columellar lip, which in most shells of the genus *Planaxis* has a little callus near the suture, is so notched out as to leave a sort of tooth. This seems hardly a sufficient difference to justify generic separation.

12. *MICHAUDI* (Quoyia), f. 1.—Pyramidatus lævis acuminatus; apertura trigona, margine crenato, columella tenui; postice exciso et unidentata.—This species is smaller and smoother than sp. 11.—It does not lose its apex, while the notch and tooth on the columella are not so conspicuous.

13. *NUCLEUS*, f. 20, *Lamarck*.—Breviter bulbiformis, acuminatus niger crassus; ultimo anfractu magno infra rotundo, prope suturam infra medium et ad marginem externum apertura profunde sulcato; apertura infra expansa, margine crasso crenato; columella prope suturam canaliculata.—Smooth in the centre of the whorls, but sulcated deeply at the top and bottom.

14. *NIGRITELLUS*, f. 21, *Forbes*.—Quam *P. nucleus* magis pyramidatus, sulcis haud profundis, medio anfractuum evanidis.—More pyramidal than *P. nucleus*, with the grooves slighter, and disappearing in the middle of the whorls.

15. *ATROPURPUREUS*, f. 10, *Krauss*.—Lævis niger; anfractibus ad suturam plumbeo-fasciatis, infra leviter trisulcatis.—Having a little lead-coloured band under the suture, and faint grooves on the lower part of the whorls.

16. *LABIOSUS*, f. 25, *Adams*.—Subpyramidatus lævis nigro-fusca, nigro obscure spiraliter fasciata.—A dark shell, with darker cross-lines.

17. *ACUTUS*, f. 35, *Krauss*.—Acute pyramidatus, niger; anfractibus supra infraque tenuiter sulcatis; apertura ad marginem lirata.—More sharply pyramidal than the pre-

ceding, with lighter sulci, disappearing in the middle of the whorls.

18. *SIMILIS*, f. 36, *Smith*.—*P. acuto similis*, fuscus; anfractibus omnino distanter sulcatis.—The grooves do not disappear in the middle of the whorls.

19. *HANLEYI*, f. 37, *Smith*.—Acute pyramidatus, fuscus, lævis; anfractibus moderate convexis, supra infraque sulcatis; ad suturam unifasciatus; apertura intus tenuiter lirata, rima suturali subrotunda.—The little channel formed at the junction of the life outer with the columella lip is rather more rounded than in most species.

20. *NIGER*, f. 38, *Quoy*.—Niger, lævigatus, tenuiter sulcatus; apertura subpatula, canali postico subrotundo.—*P. Hanleyi* differs from this in several slight particulars, as may be seen by comparing figs. 37, 38.

21. *ATER*, f. 40, *Pease*.—Brevis lævis niger; spira brevi; apertura subtrigona, intus lirata, canali postico nullo.—A small, rather short black shell, rather expanded in the last whorl.

22. *ABBREVIATUS*, f. 41, *Pease*.—Brevis lævis niger, obliqua; apertura subtrigona expansa, intus lirata, canali postico lato.—More oblique than the preceding, with the outer lip more expanded, and a rather wide posterior canal in the mouth.

23. *PILIGER* (*Holcostoma*), f. 19, *Philippi*.—Ovatus fulvus, leviter fusco fasciatus, lævis; spira brevissima; ultimo anfractu magno, medio ventricoso; apertura albida, subovata columella brevi obliqua lata truncata.—Differing from all other species in its oval shape and the size of the last whorl.

24. *TENUIS*, f. 5, *Smith*.—Elevatim pyramidatus tenuis politus, pallide tæniatus; anfractibus convexiusculis tenuissime, sulcatis.—Pale, elevated, and thin, with extremely slight spiral lines.

25. *INEPTUS*, f. 6, *Gould*.—Elevatim pyramidatus, lineis distantibus pallide zonatus, spiraliter sulcatus.—More elevated than most of the small lineated species.

26. *ZONATUS*, f. 7, *A. Adams*.—*P. inepto similis* sed magis pyramidatus; ultimo anfractu medio et infra medium rubro-lineata; apertura subtrigona, labio externo incrassato, denticulato.—A single red line appears above the suture of the

upper whorls, and one in the middle and one below the middle of the last.

27. LONGISPIRA, f. 9, *Smith*.—Elevatus angustus tenuis pallidus; apertura brevi; spira elongata, infra suturam et medio anfractus ultimo tenuiter rubro-lineata.—The spire is very long in proportion to the aperture, which is small; one red line in the middle of the last whorl, and one between it and the suture.

28. VARIABILIS, f. 22, 23, *Smith*.—Parvus elongatus albidus, lineis spiralibus rubescentibus nonnunquam cinctus; spira acuminata.—The two figures represent variations in colour of this small acuminated species.

29. EBOREUS, f. 27, *Smith*.—Parvus pallidus altus; spira elevata, anfractibus convexis, ultimo ad medium bilineato, prope suturam unilineato; apertura subtrigona, labio externo intus denticulato fusco punctato.—Having two lines in the middle, and one near the suture of the last whorl.

30. PUNCTO-STRIATUS, f. 28, 29, *Smith*.—*P. eboreo* similis, lineis minute punctato-striatis cinctus.—Like sp. 27, but marked in double or single series of minute reddish spots.

31. HERMANNSENI, f. 30, *Dunker*.—Breviter subpyramidatus fusco-nigrescens, lineis fulvis cinctus, post columellam umbilicatus; apertura oblique subexpansa, intus lirata.—The aperture of this dark little pyramidal species is oblique and somewhat patulous.

32. LINEATUS, f. 31, *Costa*.—Oblongo-pyramidatus, lineis rubro-fuscis cinctus; spira elongata, anfractibus convexusculis; apertura brevi, labio externo intus dentato-crenato.—The well-known West Indian species with red-brown lines.

33. SUCCINCTUS, f. 42, *A. Adams*.—Quam *P. lineatus* brevior, lineis tenuioribus, anfractibus magis rotundis; spira breviori.—It is not easy to distinguish this from the last species, but it is a shorter shell, has thinner lines and a shorter spire.

34. CINGULATUS, f. 39, *A. Adams*.—*P. succincto* similis; anfractibus versus suturam late fusco fasciatis, spiraliter dense sulcatis.—A species belonging to the Chinese Seas, strongly resembling the above West Indian ones. It has a broad band of colour under the suture, and is closely spirally engraved.

35. STRIATULUS, f. 18, *Philippi*.—Quam *P. cingulatus* magis pyramidata, spira brevior, magis rectilateralis.—This species forms a shorter and straighter pyramid than the last.

36. LINEOLATUS, f. 8, *Gould*.—Breviter pyramidatus, dense striatus, rubro-lineatus, infra suturam late unifasciatus.—Probably the shortest of the lineated pyramidal little species.

37. STRIGATUS, f. 24 (by error), *Hanley*.—Bulbiformis subpyramidatus; spira acuminata, cærulea; ultimo anfractu tenuiter rubro-lineato, infra rotundo; labio externo incrassato. Small, thick, pyramidal above, and rounded below; with lines on the lower, but not on the upper whorls. The above figure has unfortunately been taken from the wrong shell.

38. VIRGATUS, f. 26, *Smith*.—Elevatim pyramidatus, fulvus, lineis spiralibus rubris et concentricis pallidis ornatus; spira acuminata, anfractibus rectilateralibus; apertura subtri-gona.—Of a straight-sided pyramidal form, lightly crossed with reddish lines.

ALPHABETICAL INDEX TO PLANAXIS.

Including QUOYIA, *Recl.*

- abbreviatus*, *Pse.* sp. 22, f. 41.
acutus, *Krauss.* sp. 17, f. 35.
acutus, *Menke*=*nigritellus*.
ater, *Pease.* sp. 21, f. 40.
atropurpureus, *Recl.* sp. 15, f. 17.
brasilianus, *Lamk.* sp. 10, f. 15, 16.
breviculus, *Desh.* sp. 3, f. 3.
Browni, *Dnkr.*=*labiosus*.
buccinoides, *Desh.*=*sulcatus*.
castaneus, *Smith.* sp. 9, f. 34.
cingulatus. *A. Ad.* sp. 34, f. 39.
crassispira, *Smith.* sp. 6, f. 14.
decollatus, *Gray.* sp. 11, f. 2.
eboreus, *Smith.* sp. 29, f. 27.
encausticus, *Smith.* sp. 2, f. 32.
fulvus, *A. Ad.*=*brasilianus*.
Hanleyi, *Smith.* sp. 19, f. 37.
Hermannseni, *Dnkr.* sp. 31, f. 30.
ineptus, *Gld.* sp. 25, f. 6.
labiosus, *A. Ad.* sp. 16, f. 25.
lineatus, *Costa.* sp. 32, f. 31.
lineolatus, *Gld.* sp. 36, f. 8.
longispira, *Smith.* sp. 27, f. 9.
Michaudi, *Cr. and Fisch.* sp. 12, f. 1.
mollis, *Sowb.*=*brasilianus*.
- niger*, *Quoy.* sp. 20, f. 38.
nigritellus, *Forbes.* sp. 14, f. 21.
nucleus, *Lamk.* sp. 13, f. 20.
obscurus, *A. Ad.* sp. 5, f. 33.
obsoletus, *Menke*=*nigritellus*.
pigra, *Forbes*=*brasilianus*.
piliger, *Phil.* sp. 23, f. 19.
planicostatus, *Sowb.* sp. 7, f. 12.
plumbea, *Pse.*=*labiosus*.
puncto-striatus, *Smith.* sp. 30, f. 28, 29.
pyramidatus, *Lamk.*=*sulcatus*.
Savignyii, *Desh.* sp. 4, f. 4.
semisulcatus, *Sowb.*=*nucleus*.
similis, *Smith.* sp. 18, f. 36.
striatulus, sp. 35, f. 18.—
Philippi.
strigatus, *Hanl.* sp. 37, f. 24.
succinctus, *A. Ad.* sp. 33, f. 42.
sulcatus, *Born.* sp. 1, f. 10, 11.
suturalis, *Smith.* sp. 8, f. 13.
tenuis, *Smith.* sp. 24, f. 5.
undulatus. *Lamk.*=*sulcatus*.
variabilis, *Smith.* sp. 28, f. 22, 23.
virgatus, *Smith.* sp. 38, f. 26.
zonatus, *A. Ad.* sp. 26, f. 7.

MONOGRAPH OF THE GENERA
TRIDACNA AND HIPPOPUS.

PLATES I., II., III., IV., V., VI.

(Pl. 485-489*.)

Testa bivalvis, unimusclosa, antice hians, ad marginem hiatûs crenata, plerumque ovata, costis latis plusminusque squamatis radiata; squamis arcuatis, interdum magnis; margine ventrali dentato-undatis. Cardo dente approximato uno in utraque valva magno, remotis uno et duobus. Ligamentum marginale.—The one large adductor muscle is to be found at about two-thirds length from the posterior end, half way between the dorsal and ventral margins. The open lunule is for the passage of a strong byssus, by which the *Tridacna* fixes its shell to the rocks. All the shells are ribbed, and most of them have scales on the ribs, although when the shells attain a large growth these scales are often eroded, and in other cases their production is discontinued.

Species.

1. GIGAS, f. 11, *Linnæus*.—Maxima ponderosa subovata subæquilateralis, costis radiantibus septem elevatis lævibus vel tenuissime laminatis; margine ventrali acute et profunde undatim dentato, margine dorsali crassidentato, antice breviter et rotunde hianti vix crenato.—Neither the shells referred to by Lamarek, nor that figured in Reeve's 'Iconica' for *T. gigas* (probably *mutica*, Lamk.), will be found to agree with the Linnæan description, nor is there any reason to believe that either of them attains to gigantic dimensions. I have no means of knowing whether the gigantic specimens weighing over 500 lb., of the Museum Ulricæ, or those used as *bénitiers* at the Eglise de St. Sulpice in Paris, do or do not show signs of having had scales; but I agree with Mr. Hanley in believing

that Linnæus described his *T. gigas* principally from shells and figures of the *T. squamata*, probably concluding that all *Tridacnæ* were of one species, and that the larger specimens had been denuded of their scales. Be that as it may, our figure 11 represents (in characters) four shells, two in the Royal Botanical Gardens, Regent's Park, and two in the Natural History Museum at Kensington, the latter over three feet long, while weighing only 310 pound, as against the historical '500 pound,' and 'two feet across.' These have very deep ribs, rather angular than round, and showing only on the ridges strong, sharp lines, which might possibly indicate the former existence of thin and close slightly projecting laminæ, but certainly not of large and broad vaulted scales like those of the following species.

2. *SQUAMOSA*, f. 2, 7, 15, 17, *Lamarck*.—Magna subovata ventricosa subæquilateralis; costis rotundis squamatis lævibus; concentricæ leviter rugatis; margine postico crassidentato, margine antiæo breviter hianti; squamis maximis fornicatis extantibus arcuatis, var. (*T. serrifera*) squamis costarum versus apicem subtrigonis, deinde obsoletis. — Although generally known under the above name, the shells described certainly belong to the *Chama gigas* of Linnæus, with the Linnæan description of which they agree. We think, however, it would now create more confusion to transfer the name than to let it stand as it is, so as to retain the name of *T. gigas* for the largest species. I have seen specimens of *T. squamosa* rather more than a foot long.

3. *MUTICA*, f. 1, 12, sp. *Lamk.* (*T. gigas*, Rve., not Linn.). —Ovato-oblonga, flavida, antice oblique producta, breviter hians, margine hianti latissime incrassato, roseo; margine ventrali; costis quatuor ad quinque latis subdepressis, dense et tenuissime arcuatim squamatis.—The shells of gigantic size, figured and quoted for *T. gigas* sp. 1, f. 11, show no signs of scales, and are not oblique. Their anterior side is, if anything, the shorter. The present species, on the contrary, is produced on the anterior side, and has very narrow scales towards the margin. It is described by Lamarck as having a small hiatus; and the specimen in the British Museum, from which our figure is taken, is very small in proportion to the size of the shell. Its margins are thick and broad, with pinky colouring. Lamarck's specimen

is nearly 15 inches long, and that in the Museum nearly as large.

4. SCAPHA, f. 16, *Meusch.* fid. Adams.—Ovato-elongata, flavida, radiatim leviter lirata, postice breviusculo, cuneato, antice oblique producto obtuso, latissime hians; costis 5-6 depressis, squamis tenuibus, angustis approximatis arcuatis ornatis; interstitiis valide sulcatis.—Figures in the Enc. Med. and Chemn. Conch. of this species, are referred to by Lamarck for *T. gigas*, to which it does not belong. It is too ventricose and narrow, and not sufficiently cancellated to be referred to *crocea* or *ferruginea*. The Messrs. Adams have figured it in their 'Genera' as *Chamostrœa scapha* of *Meusch.* It has a very wide and long hiatus, with crenulated margins.

5. CROCEA, f. 5, 6, 8, 9, 10, *Lamk.*—Ovata obliqua, pallide aurantia vel ferruginea, liris radiantibus et rugis concentricis cancellata; costis plus minusve depressis; latere antico producto, hiatu magno; margine postico obtuse cuneato vel rotundatim declivi; costis plus minusve depressis, squamatis; squamis arcuatis angustis tenuibus, frequenter erosis.—Mr. Reeve separated the variety with less sloping posterior side, and more rusty colour, as *T. ferruginea* (f. 9), and also gave the name 'Cumingii' to another very beautiful variety (f. 8, and perhaps f. 5), in which the ribs are a little more raised, while the scales, better preserved and broader, are well set off by the bright colour of the intervals between the ribs.

6. ELONGATA, f. 3, 4, *Lamarck.*—Oblonga, antice producta, utrinque subacuminata, alba aut flavida costis 8-9 semirotundis læviusculis; squamis subdistantibus fornicatis extantibus; interstitiis costarum angustiusculis radiatim liratis.—The distance and projection of the vaulted scales, the smoothness of the ribs, and narrowness of the strongly ridged interstices, distinguish all the specimens we have seen of this species from *T. ferruginea*, in our last plate (f. 16), and it is known from *T. lanceolata*, (f. 18) by other characters.

7. LANCEOLATA, f. 19, *Sowerby.*—Oblonga, acuminata, aurantia; antice attenuatim producta, costis 7-8, medianis magnis, læviusculis; squamis subapproximatis, arcuatis brevibus, interstitiis leviter liratis ad marginem acute productis.—The singular obliquity and attenuation of the anterior side, and the narrowness and comparative closeness of the

arched scales, give a character to this species as distinguished from the preceding.

8. RUDIS, f. 13, 14, *Reeve*.—Ovato-gibbosa alba, antice subproducta, utrinque obtusa; costis magnis rotundis intersquamis valide liratis; squamis maximis arcuatis latis, lateraliter expansis; interstitiis angustiusculis, rude liratis.—The surface is roughly ridged, both upon and between the ribs. The scales are large and saddle-like, extending at the sides so as nearly to touch each other. The shell besides is not so deep as *T. squamosa*, and has a much wider opening.

PLEUROTOMARIA, *DeFrance*.

PLATES I. II.

 Thes. pl. 491.

Testa spiralis trochiformis, intus nacrea; anfractu ultimo a margine aperturæ retro acute inciso; anfractibus superioribus, incisuræ cicatrice spiraliter notatis.— Operculum corneum.

The shells of this remarkable genus have all the characters of *Trochus*, being spiral and conical with pearly interiors. They have at the same time the very important exceptional character of an incision from the edge of the aperture backwards; the cicatrix of the incision or slit appears in the upper whorls, and continues spirally downwards to the backward margin of the slit in the last whorl. In the growth of the shell this slit has been filled up in all the whorls successively to within the required distance from the aperture. The successively filled up holes of the *Haliotis* are believed to be analogous to this. Also some of the *Emarginulæ* exhibit similarly filled-up openings. The microscopic *Scissurella* is a still closer example, but it does not belong to the pearly tribe.

Species.

1. QUOYANA, f. 5, 6, *Fischer*.—Subdepressa conica, pallide fulva, flammulis pallide rubris, oblique concentricis ornata, liris spiralibus et striis concentricis elevatis oblique decussata; anfractibus decem paulo planatis, ad suturam tumidiusculis; apicalibus subattenuatim acuminatis; ultimo versus marginem basalem oblique angulato; disco basali subplanato lævi subumbilicato; fissuræ cicatrice planata; apertura oblique quadrilaterali, fissura inframediana, angusta

breviuscula; columella superne rectiusculo deinde arcuata, oblique elongato: 38 alt. \times 48 lat.; fiss. $20 \times 1\frac{1}{2}$ mil.—The type specimen of this species, shown in Plate II., recently drawn, was found in a basket of lobsters, taken in the waters between Marie Galante and the Island of the Dominique, and was occupied by a hermit-crab. It was obtained for France by M. Bernardi, but passed through several French hands, till Mr. Damon, of Southampton, having acquired it, sold it to the late Mrs. De Burgh, of whose beautiful collection it still forms a part. It is the smallest of the four species now known. Its sculpture is exquisite. The part of the fissure remaining open is nearly a quarter of the circumference of the last whorl. The apex is gracefully acuminate and the suture is deep.

2. BEYRICHI, f. 7, 8, *Hilgendorf*.—Elevatim conica, pallide flavida, rubro flammulata solida; anfractibus subdistanter liris planatim subnodosis spiraliter cinctis, leviter convexis; sutura crenata, fascia cicatricosa inframediana; disco basali sulcato, versus medium lævigato, medio profunde infundibulato; apertura subovata, columella crassa, nacrea rectiuscula infra arcuata cum margine basali aperturæ confluenti: 82 mil. alt. \times 83 lat.—The incomplete state of the aperture prevents the fissure being accurately described, but from the band-mark it seems to have been broad, and from other appearances most likely to have been short. The centre of the basal disc has a funnel-shaped hollow which might be described as an umbilicus. The characters are seen in our figure, copied from Dr. E. von Marten's 'Conchologische Mittheilungen.' The unique specimen is from Japan. It is the next smallest in size to *P. Quoyana*, but much larger.

3. ADANSONIANA, f. 3, 4, *Crosse*, 1861.—Conica acuminata profunde umbilicata, pallide rosaceo-fulva, flammulis maculisque rubescentibus irregulariter picta; anfractibus 11–12 supra medium obtuse angulatis, spiraliter liris granulosus spiralibus, fascie basali magis conspicuis, et striis concentricis decussatis; cicatrice fissuræ supramediana, lata, tenuiter arcuatim striata; fissura lata elongata; apertura fere quadrangulati, vivide nacrea; disco basali subconvexa: 74 alt. \times 82 lat.; fiss. 70×2 mil.—The sculpture consists of numerous granulated spiral threads, crossed by oblique striæ; it is stronger at the basal surface and under the suture of the

whorls. The walls are angulated obtusely above the middle, and the fissure-band upon the under side of it is still above the middle. It is wide, and so is the fissure itself, which occupies half of the last whorl in length.

4. RUMPHII, f. 1, 2, *Schepman*.—Maxima subdepressa, concentric leviter rugata (anfractibus superioribus valide), flavide carnea, flammulis rubris aurantiis et subpurpureis concentric variegata, profunde umbilicata; anfractibus convexiusculis supra medium subangulatis; cicatrice supra-mediana angustissima, elongatissima; apertura oblique subquadrangulari, columella oblique curva, margine basali aperturæ confluenti: 170 alt. \times 190 lat.; fiss. $230 \times 2\frac{1}{2}$ mil.—This fine shell is deeply umbilicated, has the whorls slightly angular above the middle, and has a supra-medial fissure, in these respects resembling *P. Adansoniana*, than which it is more than twice as large. While it is the largest, it is also the smoothest of the four species, the slight concentric wrinkles of the upper whorls becoming less distinct and almost lost in the lower. The fissure is narrow in proportion to the size of the shell, and in length occupies more than half the circumference of the last whorl.

TRIGONIA, *Bruguère.*

 Thes. pl. 492.

Testa æquivalvis subtrigona, intus vivide iridescente margaritacea, rosea argentea vel aurea; extus radiatim nodoso-costata, purpurea, vel rosea vel alba, epidermide tenui fusco induta. Cardo dentibus in valva dextra duobus divaricatis oblique serratis, in valva sinistra duobus duplicatis, divaricatis et serratis. Ligamentum externum.

The two single serrated diverging teeth fitting into two double ones, and the pearly lining of the interior impart a singular beauty to the shells of *Trigoniæ*; the former reminding one a little of the *Unio* tribe generally, and the latter of *Castalia* in particular. They are, however, marine, and have strong radiating nodose ribs.

Species.

1. LAMARCKII, f. 1-4, *Gray*.—Ovato-subtrigona, purpurea, purpureo fasciata, vel aurantia; costis approximatis, dense moniliferis radiata; latere postico declivi, anguste truncato.—The smaller of the two best known species and more closely ribbed than the others.

2. UNIOPHORA, f. 9, 10, *Gray*.—Brevis subquadrata; purpureo fasciata vel alba; costis distantibus, subdistanter nodosis, ad aream posticam magis approximatis; area postica subquadrata, late truncata.—Shorter from anterior to posterior side than *T. Lamarckii*, with the ribs more distant, and the posterior area more broad and square.

3. MARGARITACEA, f. 6, 7, *Lamarck*.—Oblique subovata subcompressa alta roseo-purpurea vel alba; distanter nodoso-

costata; area postica lata, obtuse angulata; margine ventrali convexo.—Obliquely ovate, rather flat, nearly equal in height and depth; posterior area obtusely angular. The name was afterwards changed by Lamarck to *T. pectinata*. The following is probably different.

4. DUBIA, f. 5, *Sowerby*.—Subrhomboidea, subventricosa, extus fusco purpurea, distanter nodoso-costata; area postica subquadratum truncata margine dorsali subdeclivi; margine ventrali rectiusculo.—This and the preceding seem to differ in shape and proportions. The present being the more rhomboidal and the dorsal area more broadly truncated. It is now the commoner species and distinguished as such in the trade. It is a more gibbous shell than the true *T. margaritacea*.

5. STRANGEI, f. 8, *A. Adams*.—Subrotundata ventricosa; area postica abbreviata subangulata; costis magnis confertis, nodis verruciformibus approximatis ornatis; margine ventrali convexissimo.—A rounded species, remarkable for the close, regular, wart-like tubercles on the ribs.

A MONOGRAPH OF THE GENUS

TURBO.

Testa ovata, vel orbicularis, vel conica, interdum, umbilicata, intus margaritacea. Operculum semper testaceum, diversiforme, plerumque crassum.

Shell ovate, orbicular, or conical, sometimes umbilicated, pearly within. Operculum always shelly, varying in form, generally thick.

The genus Turbo comprises all the species included by H. and A. Adams under the sub-families *Turbininae* and *Astraliinae*, embracing *Senectus*, *Sarmaticus*, *Lunella*, *Modelia*, *Prisogaster*, *Callopoma*, *Ninella*, *Collonia*, *Astraliium*, *Stella*, *Guilfordia*, *Uvanilla*, *Pachypoma*, *Lithopoma*, *Pomaulax*, *Cookia* and *Bolma*. It may be useful to retain these names to indicate the different sections of the genus, but the attempt to separate these sections as distinct genera can only be attended with insurmountable difficulties and anomalies. For instance, looking over the list in Adams' 'Genera of Recent Mollusca' of species of the genus Turbo, and of *Senectus*, I find no constant character by which they may be distinguished; in the latter some of the species are umbilicated, but not all; all the species are spirally ribbed or grooved, but *T. cornutus*, which is classed as a Turbo, is also ribbed, and the young of *T. cornutus*, which Reeve has called *T. japonicus*, is classed as *Senectus*. Again, some of the species of *Astraliium*, *Stella*, *Uvanilla*, *Pachypoma*, &c., are interchangeable. For instance, I take *T. rhodostoma* and *T. columellaris* for one and the same species (*T. haematragus*, Menke), but in Adams they are placed in different genera. It might be thought desirable to confine the genus Turbo to the ovate and turbinated species,

separating under another generic name all the species comprised in Adams's sub-family *Astraliinæ*; but here it would be difficult to know in which genus to place such shells as *T. cœlatus*, *T. tuber*, *T. rugosus*, &c.

The shells of *Turbo* may always be distinguished from those of *Trochus* by their shelly opercula, and not as they were formerly distinguished by their forms; so that many of the species (those of conical form) that have been called *Trochæ*, are *Turbos*, and some few of those formerly called *Turbos* take their places in the genus *Trochus* on account of having horny opercula.

Species.

Section 1. *Turbo.*

1. CORNUTUS, pl. i. f. 1, and xiii. f. 78, *Gmelin*, *Syst. Nat.* p. 3593.—Testa turbinata, imperforata, tenuicula, fulvescens, epidermide olivacea induta; anfractus 7, convexi, spiraliter costati, oblique subtilissime laminati; anfractus ultimus squamis tubulosis grandibus erectis biordinatim armatus; apertura subcircularis; fauce argentea; peristoma simplex; columella arcuata, lata, depressa, albida, ad basin expansa, producta. Operculum extus albidum, convexum, funiculo spirali prominente munitum, et tuberculis minutis rugosis undique asperatum.—A well-known species, distinguished by its conspicuous double row of large erect scales or horns. In the Japanese specimens the upper whorls are strongly ribbed, without scales, which do not begin to appear generally until about the middle of the penultimate whorl, from whence they rapidly increase in size from small scales to large prominent horns. The more southern form (Philippines and Indian Ocean), which one would at first sight be tempted to consider a distinct species, is generally smaller, and has smaller and more numerous scales generally commencing nearer the apex. The shell figured in the 'Conchologia Iconica' (Reeve), pl. ix. f. 33 b, as *T. japonicus*, of which I give a figure, pl. viii. f. 78, is a young shell of the Japanese form of *T. cornutus*, having attained to an unusual size without commencing to be horned. Reeve's other *T. japonicus* is a distinct thing, and a Mauritian species, which I have named *T. cernicus*, species 19.

2. MARMORATUS, pl. i. f. 4, and iv. 34, *Gmelin*, Linn. p. 3592, n. 15; Linnæus, Syst. Nat. (12th edit.) p. 1134—olearius, *Gmelin*, Linn. n. 17—cochlus, *Gmelin*.—The largest species of the genus with the exception of *T. Jordani*. The young shell has smooth rounded whorls, as figured on pl. iv.; when fully developed the last whorl is surmounted by an elevated, rounded, generally more or less nodulous keel, and has usually one or two nodulous keels round the lower part. The specimen figured in Reeve's 'Conchologia Iconica' as *T. imperialis* appears to be a variety, or young specimen, of this species, and not the *T. imperialis* of Gmelin, for which see pl. iv. f. 31. *T. marmoratus* is very abundant in the Eastern Seas, and is commonly uncoated and polished, exposing the pearly nacre for ornamental purposes.

3. IMPERIALIS, pl. iv., f. 31, *Gmelin*, Syst. Nat. p. 3594—Regenfussi, *Deshayes*.—Testa ovato-conica, subventricosa, ponderosa, imperforata, viridis, rufo-fusco nebulata, lineis rufescentibus longitudinaliter strigata, interdum zonis angustis nigricante alboque articulatis spiraliter picta; anfractus convexi, rotundati nunc lævi, nunc longitudinaliter rude striati; anfractus ultimus interdum superne leviter nodosus; apertura ampla, subcircularis; peristoma simplex; columella arcuata, ad basin vix effusa. Operculum circulare, crassum, extus valde convexum, ad latera sinistra incrassatum, ubique granulis minutis albidis notatum.—A fine species of very solid growth, generally exhibiting fine longitudinal reddish-brown slightly impressed linear streaks, but some specimens are coarsely and irregularly wrinkled.—HAB. East coast of Madagascar.

4. PETHOLATUS, pl. v. f. 46, 47, *Linnaeus*, Syst. Nat. (12th edit.), p. 1233 (genus Turbo).—Testa ovata, imperforata, polita, rufescente-fulva, vel spadicea, vel viridula, fusco nebulata, fasciis interruptis nigro-fuscis spiraliter picta; spira plus minusve elata; anfractus 7, convexi; anfr. ultimus interdum superne depressus, inferne leviter productus; apertura subcircularis; columella arcuata, lutea; peristoma simplex; labrum luteo limbatum. Operculum extus politum, nitens, convexum, medio viridi, et ad margines castaneo et albo pictum.—A beautifully painted bright shining shell, varying both in form and marking; the two figures represent the most prevailing forms. Specimens occasionally occur

with a spiral keel at the upper part of the body-whorl.—HAB. Philippines, &c.

5. REEVII, pl. v. f. 48, *Philippi*; *variabilis*, *Reeve* non *Grat.*—Quam *petholatus* magis depressa, apertura amplior, columella alba.—I have considerable hesitation in admitting this as a species. Some of the varieties of *petholatus* come so near that it is not always easy to distinguish them. Grateloup having given the name *Turbo variabilis* to a fossil species in 1828, Philippi has changed the name of Reeve's *variabilis* to *Reevii*.—HAB. Philippines, &c.

6. SMARAGDUS, pl. vi. f. 58, *Martyn*, Univ. Conch.; *Gmelin*, Syst. Nat. p. 3595.—Testa subglobosa, imperforata, cæruleo-viridis, epidermide olivacea induta; anfractus rotundati; apertura circularis, peristoma simplex; columella latiuscula, concava. Operculum extus convexum, minutissime granulatum, viridi.—A species of very simple form and character, in external appearance much like a *Helix*.—HAB. New Zealand.

7. MAGNIFICUS, pl. vi. f. 59, *Jonas*, Zeitsch. Mal. 1844, p. 167.—Testa ventricoso-ovata, imperforata, viridula, fusco nigroque variegata et maculata; anfr. convexi, obscure subtilissime striati; spira acuta; anfr. ultimus superne leviter depressus deinde inflatus; apertura subcirculari; columella mediocriter lata leviter depressa.—A fine characteristic species, quite unlike any other. It is rare in collections.—HAB. Bay of Sechura, Peru.

8. JOURDANI, pl. vi. f. 62, and vii. 71, *Kiener*, Revue Zool. Soc. Cuv., 1839, p. 324.—Testa maxima, ovato-conica, imperforata, rubescente-fusca; spira acutiuscula, mediocriter elevata; anfractus convexi, priores spiraliter costati; anfr. ultimus ventricosus, interdum obscure spiraliter sulcatus, plerumque longitudinaliter leviter corrugatus; apertura ampla, subcircularis; labrum tenue; columella convexa, tenuiter effusa, superne callosa, inferne angulata.—The largest species of the genus, yet one of considerable rarity. One specimen in the British Museum, about six inches long, has the upper whorls prominently ribbed, and the last whorl encircled with about a dozen broad scarcely raised ribs; but a much larger specimen, about twelve inches long, recently in my possession, presented scarcely any trace of ribs on the last whorl.—HAB. New Holland.

9. MILITARIS, pl. vii. f. 64, *Reeve*, *Conch. Icon.* sp. 40.—Testa conico-ovata, imperforata, tenuicula, subventricosa, rufescente-albida, maculis lineisque rufis nitide picta; anfractus superne declives, deinde rotundati; apertura subcircularis; columella latiuscula, ad basin vix angulata.—Allied to and possibly a variety of *T. imperialis*. I have seen specimens with two or three tubular scales, like those of *T. cornutus*.—HAB. Island of Annaa, on the reefs (Cuming).

10. CEPOIDES, pl. vii. f. 65, *E. A. Smith*, *Annals and Mag. of Nat. Hist.*, November 1880.—Testa anguste sed profunde perforata, ovato-conica, pallide fusca, viridi strigata alboque variegata. Anfractus 7, valde convexi, superne leviter depressi vel subexcavati, incrementi lineis conspicuis, irregularibus, sublamellosis ornati, striis spiralibus inconspicuis et sulcis paucis superne sculpti. Apertura fere circularis, spira paulo brevior, intus dilute salmonea, margaritacea. Long. 80 millim., diam. max. 70; apertura 38 millim. longa.—(*Smith*). A very good and distinct species, somewhat allied to *T. imperialis*, but distinguished among other characters by a deep and narrow umbilicus. The specimen at present unique is in the British Museum.—Locality unknown.

Section 2. *Senectus*.

11. SETOSUS, pl. i. f. 2, *Gmelin*, *Syst. Nat.* p. 3549.—Testa ovato-conica, inferne attenuata, imperforata, crassa, albida, viridi et brunneo radiata, aut tessellata; spira acuta, sutura impressa; anfractus 6, convexi, oblique striati, spiraliter lirati; liris convexis, superantibus lira minore intermedia separatis; apertura subovata, fauce sulcata argentea; labrum plicatum; columella crassa, parum arcuata, ad basin effusa. Operculum extus valde convexum, obscure granulosum, partim oblique striatum, album, interdum castaneo-tinctum.—A well-marked species which there is little danger of confounding with any other. The body whorl is large in proportion to the spire; the ribs are numerous and prominent, crossed by oblique striæ, which in some specimens are almost obsolete.—HAB. Lord Hood's Island, &c., South Pacific.

12. INTERCOSTALIS, f. 9, 11, 14, 16, *Menke*—elegant, *Philippi*—radiatus, *Reeve*, non *Gmelin*—disjunctus, *Anton*

—articulatus, *Reeve*—concinnus, *Philippi* — *Ticaonicus*, *Reeve*.—Testa ovato-conica, solidiuscula, profunde anguste umbilicata, lutea aut viridula, castaneo-fusco superne radiata, et basin versus spiraliter articulata; anfractus 6, convexi, parum angulati, liris valde inæqualibus numerosis rotundatis, plus minusve elevatis, læviusculis aut lamelloso-striatis cingulati; anfr. ultimus plus minusve descendens, subsolutus; apertura subcircularis, fauce argentea; peristoma plicatum; columella attenuata, ad basin vix effusa, subplicata. Operculum circulare, crassum, extus albidum viridi tinctum, leviter granulose.—Another species in which there is considerable variation both in form and style of painting.—*HAB.* Indian Ocean.

13. *RADIATUS*, pl. ii. f. 13, *Gmelin*, p. 3594, f. 19—*Chernitzius*, *Reeve*—*spinosus*, *Kiener*, non *Gmelin*—*speciosus*, *Kiener*, non *Reeve*.—Testa ovato-conica, imperforata, albida, strigis parvis fuscis oblique undatis picta; anfractus 6, subangulati, priores 2, lævigati, sequentes medio carinati, et spiraliter lirati; ultimus longitudinaliter lamelloso striatus, spiraliter liratus; liris 2 medianis majoribus, squamis erectis spinosis asperatis; apertura subcircularis, fauce argentea; labrum tenue, parum plicatum; columella arcuata, subdepressa, ad basin vix effusa. Operculum crassum, extus granulatum, pallide olivaceum.—A comparatively light species with the ribs closely scaled, and fine laminar ridges crossing the interstices. Two or three of the principal ribs are generally spinose.—*HAB.* Gulf of Suez, Red Sea.

14. *FOLIACEUS*, pl. iii. f. 15, *Philippi*, Mon. pl. ii. f. 2, 3—*laminiferus*, *Reeve*, *Conch. Icon. sp. 17*; *Homb. et Jacq. Voy. au Pôle Sud, Zool. t. v. p. 60, pl. xiv.*—Testa ovato-conica, profunde umbilicata, viridula, nigro-fusco radiata; spira conica, acuta, sutura canaliculata; anfractus 6, rotundati, spiraliter costati; costis interdum lira intermedia minuta separatis; interstitiis radiatim striatis; striis elevatis lamellosis supra liras erectis; apertura rotunde ovata, fauce argentea; labrum plicatum; columella attenuata, arcuata, ad basin parum effusa. Operculum extus convexum, profunde umbilicatum, pallide fuscum, ferrugineo-bifasciatum, squamis minutis confertis erectis pulcherrime asperatum, ad latera sinistra callosum, deinde carina complanata marginatum.—An excellent species which there is no danger of

confounding with any other. It is distinguished by the close succession of concentric laminæ crossing the somewhat distant ribs. Mr. Crouch has kindly lent me a specimen with an authentic operculum, unfortunately too late for figuring. The operculum is no less remarkable and beautiful than the shell—convex with a deep umbilicus near the centre, light brown with dark brown concentric bands, exquisitely ornamented with small erect close-set scales; left side thick, otherwise bordered by a flattened keel.—HAB. Australian coasts. The operculated specimen, Port Walcot, North Australia (Capt. Beckett).

15. SPINOSUS, pl. iii. f. 17, 18; also f. 32, 63, 77, *Chemnitz*, *Conch. Cab.* vol. v. p. 204—*tuberculatus*, *Kiener*—*tuberculosus*, *Quoy*—*tumidulus*, *Reeve*—*nivosus*, *Reeve*.—Testa ovato-elongata, aut ovata, imperforata, solidiuscula, viridula aut lutescens, castaneo plus minusve tincta et punctata; anfractus subangulati, liris numerosis seriatim plus minusve squamatis vel spinosis cingulati; apertura ovata aut subcircularis, fauce argentea. Operculum subcirculare, crassum, extus elevatum, granulose, ad peripheriam albo-cærulescens, medio pallide rufescens.—A very variable species. F. 17 represents the typical form; f. 18, *Quoy's tuberculosus (tuberculatus, Kiener)*; f. 77, *Reeve's tumidulus*; f. 32, *Reeve's nivosus*; f. 63 represents a comparatively smooth variety with an acute spire, and two brown and white articulated ribs at the base next the columella, which I had almost described as a distinct species; but after carefully comparing it with other and intermediate forms I have decided to include it.—HAB. Nicobar Islands, Mauritius, Ceylon, South Sea, New Caledonia, &c.

16. ARGYROSTOMUS, pl. ii. f. 10 and 12, *Linnaeus*, *Syst. Nat.* (12th edit.), p. 1236, 624—var. *margaritaceus*, *Linnaeus*, f. 12—*argenteus*, *Chemnitz*—*princeps*, *Philippi*—*Lamarekii*, *Philippi*—*carduus*, *Fischer*.—Testa ovato-turbinata, lutescente-alba, aut viridis, fusco plus minusve maculata et radiata; anfractus convexi, concentricè striati, costis numerosis validis, interdum conspicue squamatis cingulati; apertura ovata, inferne producta, fauce sulcata argentea; labrum plicatum; columella leviter arcuata, ad basin interdum effusa. Operculum extus valde convexum, virescens aut pallide castaneum, granulose.—An extremely variable species ranging from the frondose shell described by

Linnæus, to the almost smooth form which represents the *T. margaritaceus* of the same author. After examining a large number of specimens, I can find no consistent characters by which to distinguish *T. margaritaceus* from *T. argyrostomus*. *T. argenteus*, Ch., and *princeps* and *Lamarcki* of Philippi, seem to me to belong to the same species, the latter being a young shell. I cannot speak positively as to these last, not having seen the types; but from the figures and descriptions they do not appear to present any specific distinguishing characters.—HAB. Eastern seas generally.

17. ARTENSIS, pl. i. f. 6, *Montrouzier*, Journal de Conchyliologie, vol. viii. 370; Soubervie, J. de C., series 3, vol. i. p. 274.—Testa ovato-ventricosa, imperforata, crassa, viridis, brunneo-viridique plus minusve læto variegata; anfractus 6, rapide accrescentes, spiralliter costati (11 in ultimo anfractu, 5 in cæteris), costula minima interjacente, oblique et sublamellatim imbricato-striati; apertura rotundata, intus in fundo argentea, postea alba, distanter subsulcata; labro viridi marginato, acuto, subcrenulato; columella plano-concava, inferne dilatata, cum margine dextro angulum subrectum formante. Alt. et lat. 55 mill. (Soubervie). Operculum extus convexum, album, medio obsolete granulatum.—A remarkable species, which there is no danger of confounding with any other. The body-whorl is very large in proportion to the spire, and the mouth large; the spiral ribs are very regular, narrow, and rounded, with an intermediate ridge between each.—HAB. Art Island, Caledonian Archipelago.

18. LAJONKAIRI, pl. ii. f. 7, *Deshayes* (Delphinula), Mag. de Zool., 1839—ducalis, *Philippi*.—Testa ovata, umbilicata, crassa, albida viriditincta, strigis ferrugineis raris ornata; anfr. 6 convexi, undulatim irregulariter costati, et lirati; anfr. ultimus medio biangulatus, ad utrumque angulum squamis crassis albis tubulosis armatus; apertura ovata, fauce argentea; peristoma simplex, margine subplicato; columella arcuata, argentea, cum peristomate juncta, ad basin effusa; umbilicus costa valida elevata interdum squamigera vel tuberculosa marginatus.—An easily recognised species; in some specimens the scales are so large and prominent as to remind one of *T. cornutus*, from which species it is, however, notably different in general character.—HAB. New Zealand (*Deshayes*), Keeling Island (*Darwin*). At present not common.

19. CHRYSOSTOMUS, pl. ii. f. 8, *Linnaeus*, Syst. Nat. (10th edit.), p. 762—*echinatus*, *Gmelin*.—Testa ovata, subperforata, solidiuscula, lutescente-alba, castaneo plus minusve tincta et marmorata, flammulis brunneis vel rufis interdum radiata; anfractus 6, superne angulati, undique spiraliter costati; costis interdum creberrime squamatis; anfractus ultimus 2- vel 3-carinatus; squamis supra carinas erectis, fornicatis; liris spiralibus circa umbilicum majoribus; apertura rotundata, subcircularis, fauce aurea; labrum crenulatum; columella inferne parum producta. Operculum extus convexum, nitens, partim oblique striatum, viridi, luteo et fusco nebulosum.—The common 'Gold-mouth,' distinguished apart from its general external characters by the gold colour of the interior.—HAB. Amboina, Samoa, Tongatabu, New Caledonia, Philippines, and Indian Ocean generally.

20. CANALICULATUS, pl. iv. f. 30, *Gmelin*, Syst. Nat. p. 3594.—Testa ovato-conica, imperforata, viridi variegata, et nebulata, nigricante alboque hic illic marmorata; anfractus 6, liris numerosis approximatis planulatis spiraliter cingulati, lira media majore; anfractus ultimus obtuse angulatus, superne concavus, medio inflatus, inferne attenuatus; apertura subovata, fauce argentea, sulcata; labrum superne angulatum; columella vix arcuata, ad basin valde effusa. Operculum crassum, extus convexum, granosum, albidum carneo tinctum.—This species approaches very near to *crassus*, of which, notwithstanding the differences pointed out by Reeve, it may be a variety; but, as at present I am only acquainted with one specimen, it may provisionally rank as a species.—HAB. Unknown.

21. CERNICUS, pl. iv. f. 29, *Sowerby*, Thes. Conch.—*japonicus* (part) *Reeve*, Conch. Icon. pl. viii. f. 23.—Testa ovato-conica, solida, subventricosa, imperforata, luteola, rufo-fusco longitudinaliter flammulata; spira acuta, elata; anfractus superne declives, deinde convexi, undique minute oblique striati, costis planiusculis latis approximatis alternatim minoribus spiraliter cingulati; anfr. ultimus superne obtuse angulatus, supra angulum leviter depressus, vix canaliculatus; apertura circularis; labrum acutum, plicatum; columella crassa, convexa, leviter arcuata, ad basin parum producta, longitudinaliter plicata. Operculum extus valde convexum, viridulum, rufo-fusco vivide suffusum, conspicue granulosum.—Reeve has given the name of *Turbo japonicus* to two

very different species. One I have identified with the young of *T. cornutus*, which is a Japanese shell; the other is the species above described, which is not a Japanese but a Mauritian shell. The two species have little in common, and it is somewhat surprising that they should have been confounded.—HAB. Mauritius (Robillard).

22. BICOLOR, pl. iv. f. 33, *Sowerby*, Thes. Conch.—Testa ovato-conica, solidiuscula, imperforata, lutescente-alba, luteo-fusco late oblique radiata; spira acuta, mediocriter elata; sutura anguste impressa; anfractus 6, superne declives, deinde leviter angulati, undique concentricè minutissime striato-laminati, costis numerosis irregularibus fere parviusculis, ad basin majoribus spiraliter cingulati; apertura subcircularis; peristoma simplex; columella arcuata, convexiuscula, ad basin vix effusa, longitudinaliter plicata. Operculum crassum, extus convexum, viridulum fusco-tinctum, granulosum.—In the only specimen I have met with of this species, the broad brown oblique rays are very clearly defined upon a whitish ground; the longitudinal striæ form minute laminar ridges, the suture is narrowly impressed, not broadly channeled as in *T. foliaceus*.—HAB. —?

23. PULCHER, pl. iv. f. 38, *Reeve*, Proc. Zool. Soc. 1842, p. 185.—Testa conico-ovata, subperforata, luteo-spadicea et viridula, lineis nigricantibus undulatis longitudinaliter picta; spira elata, acuta; anfractus superne concaviusculi, deinde convexi, spiraliter irregulariter lirati; liris numerosis, alternatim minoribus, interstitiisque subtilissime crispato-laminatis; apertura subcircularis; labrum crenulatum; columella vix arcuata, attenuata, ad basin latiuscula. Operculum extus mediocriter convexum, peculiariter cristatum.—An easily recognised species, principally characterised by a crisply laminated surface, and dark longitudinal waved lines. The operculum is very like that of *T. sarmaticus*.—HAB. North Australia.—This species presents one of the difficulties of subdivision. Judged by the shell it is a *Senectus*, and by the operculum a *Sarmaticus*.

24. SPENGLERIANUS, pl. iv. f. 39, *Gmelin*, Syst. Nat. p. 3595.—Testa ovata, imperforata, rosaceo-spadicea, maculis punctisque fusciscentibus nebulata, nitens; spira elata; sutura late et profunde canaliculata; anfractus rotundati, plerumque spiraliter sulcati; apertura subcircularis.—A

remarkable species with a shining surface, generally encircled with narrow grooves, but sometimes plain. It is chiefly distinguished by the excavated sutural channel. HAB. — ?

25. SPARVERIUS, pl. i. f. 3, and viii. 81, *Gmelin*, *Syst. Nat.* p. 3594.—Testa ovato-conica, imperforata, solidiuscula, pallide fusca, nigricante-fusco tessellata; anfractus 6, convexi, rotundati, spiraliter costati; costis numerosis latiusculis plano-convexis; apertura subovata, inferne parum angulata, fauce sulcata, argentea; labrum crenulatum; columella arcuata, alba, ad basin incrassata et producta. Operculum extus valde convexum, læviusculum, virescens.—Distinguished from *T. setosus* by the comparative closeness and flatness of the ribs, together with the peculiar tessellated style of painting.—HAB. Philippines, &c.

26. CRASSUS, pl. i. f. 5, *Wood*, *Index Test. Supp.* pl. vi. 43—canaliculatus *Kiener*, non *Gmelin*.—Testa ovata, imperforata, solidiuscula, viridi et fusco variegata et tessellata; anfr. superne concavo-angulati, ad angulum obtuse carinati, spiraliter sulcati; apertura ovata, fauce argentea; labrum plicatum; columella arcuata alba, ad basin valde incrassata et producta. Operculum extus convexum, granosum, albidum carneo-tinctum.—A well-marked species, easily identified by the accompanying figure.—HAB. Port Essington, &c.

27. CASTANEUS, figs. 19, 20, 21, 27, 55, 66, and 76, *Gmelin*, p. 3595, No. 28—crenulatus, *Chemnitz*—hippocastanum, *Lamarck*—virens, *Anton*—squamiger, *Reeve*—pustulatus, *Reeve*.—Testa ovato-conica, imperforata, castanea aut virescente-alba, viridi vel aurantio vel castaneo radiata et marmorata; spira acuta, sutura anguste canaliculata; anfractus 6, convexi, spiraliter lirati, liris inæqualibus nodosis, interdum squamosis; apertura subcircularis. Operculum circulare, extus elevatum, carneolum, ad marginem leviter granosum.—Another very variable species, the different forms of which seem so distinct that the connection between them is only apparent upon the examination of a considerable number of specimens. F. 21, a shell of uniform chestnut colour, answers best to the name; f. 20 represents *Anton's virens*; f. 27, *Reeve's pustulosus*; and 19, 55, and 56, *Reeve's squamiger*.—HAB. West Indies, Gulf of Mexico, &c.

28. *GEMMATUS*, pl. vi. f. 56, *Reeve*, *Conch. Icon.*, sp. 62.—Testa ovata, rufescens; spira acutiuscula, sutura subprofunde canaliculata; anfractus superne subangulati, deinde leviter convexi, nodulis parvis undique gemmati; apertura ampliusecula, rotundata.

29. *EXQUISITUS*, pl. vi. f. 61, *Angas*, *Proc. Zool. Soc.* 1878, p. 175.—Testa parva, turbinata, imperforata, pallide viridula vel carnea, rufo maculata et flammulata; spira elata, gradata; anfractus circ. 5, biangulati, spiraliter scabroso lirati, superne complanati; apertura subquadrata; columella incrassata.—A charming little species, distinguished by the squareness of the whorls, and the delicate regularity of the finely scabrous ribs.—HAB. Cape Solander, Botany Bay, Australia (Brazier).

30. *TROCHOIDES*, pl. vii. f. 67, *Reeve*, *Conch. Icon.*, sp. 58.—Testa subpyramidali-ovata, perforata, luteo-albicante, olivaceo radiatim maculata, lineolis minutissimis aurantio fuscis oblique reticulatis picta; anfractus biangulati, superne concavo-planati, ad angulum obsolete nodosi, ubique spiraliter sulcati.—A somewhat remarkable species described from a specimen acquired by the British Museum from the collection of the late Mr. Taylor. In external appearance it is somewhat like a *Littorina*, and it approaches somewhat to the *Gibbula* section of *Trochus*. There is a strong probability of its being a *Turbo*, but the operculum being unknown, it is impossible to say with certainty.—HAB. —?

31. *SPECIOSUS*, pl. viii. f. 74, *Reeve*, *Conch. Icon.*, sp. 35.—Testa ovato-conica, vix umbilicata; luteola hic illic viridi tincta; spira subelata; anfractus rotundati, liris pulcherrime creberrime squamatis undique cingulati.—The ribs are more closely and finely scaled than in *T. radiatus*, &c.—HAB. New Holland.

32. *TURCICUS*, pl. viii. f. 75, *Reeve*, *Conch. Icon.*, sp. 60.—Testa subpyramidali-ovata, imperforata; spira elata, gradata; sutura excavata; anfractus spiraliter squamato-lirati, superne declives acute angulati, ad angulum erecto-squamati; apertura parva; labrum crenulatum. Operculum extus convexum, minute granulatum.—A species of remarkable form, rarely met with.—HAB. Philippines (Cuming).

33. *PISTRIO*, pl. viii. f. 79, *Reeve*, *Conch. Icon.*, sp. 32.—Testa subglobosa, tumida, solidiuscula, imperforata, albida, castaneo lati-radiata; spira abbreviata, sutura canaliculata; anfractus convexi, spiraliter squamato-costati; anfr. ultimus tumidus, costis (circ. 8), erecto-squamosis, interstitiisque minute squamoso liratis cingulatus; apertura subcircularis; columella arcuata subdepressa; labrum crenulatum.—A species of rather solid growth, of which the body-whorl is about twice the length of the spire, armed with strongly scaled ribs.

34. *LÆTUS*, pl. xiii. f. 165, *Philippi*, *Mon.* p. 71, pl. xvii. f. 1.—Testa conoidea, imperforata, transversim cingulata, lævi, carnea seu pallide fusca, ferrugineo et fusco maculata; cingulis in anfractu penultimo circa novem, alternis minoribus, tertio magis elevato, angulum prominentibus formante, basalibus parum elevatis, albo et nigro articulatis; area aurantia extus columellam cingente; apertura subcirculari, argentea. (*Philippi*.)—An excellent species, only known to me by the figure and diagnosis which I have copied from *Philippi's* Monograph.—*HAB.* East coast of Africa.

35. *FERRUGINEUS*, pl. xiii. f. 164, *Anton*; *Philippi*, p. 75, pl. xvii. f. 5.—Testa ovato-conoidea, perforata, transversim cingulata, lutea, flammis latis ferrugineis picta; anfractibus parum convexis; cingulis transversis 6 in anfractu penultimo, quarto subnodoso, angulum distinctum formante, circa 14 in anfractu ultimo, octavo pariter angulum formante, valde elevatis, interstitia superantibus; striis incrementi regularibus validis; apertura circulari, basi aliquantulum producta, subsulcata. (*Philippi*.)—Another species, only known to me by the figure.

36. *FILOSUS*, pl. xiii. f. 167, *Fischer in Kiener*, *Species General. Turbo*, pl. xiii. f. 2.—Testa umbilicata, ovato-conica; spira acuta, sutura profunda; anfractibus 6, ad suturas subcanaliculati; priores transversim lirati, liris tenuiter granulosis; ultimo liris spiralibus, numerosis, approximatis, granulosis cinctus, superne plano canaliculatus; apertura ovata, intus argentea; columella umbilicem partim tegens, inferne parum reflexa.—Color aurantiacus, inferne pallidior. Operculum extus album, convexum, minutissime granulose. (*Fischer*.)—*HAB.* — ? Allied to *T. Cuilleti* (*Fischer and Bernardi*), but probably distinct.

37. AURANTIUS, pl. xiii. f. 175, *Fischer in Kiener*, Species Gen. Turbo, pl. xxvii. f. 3.—Testa ovato-conoidea, solida, imperforata; anfractus 6, convexi, subcarinati, longitudinaliter striati, spiraliter lirati, liris inæqualibus, media majore, 7 in anfractu penultimo, circa 15 in ultimo; anfractus ultimus descendens, lira media tuberculis remotis in dorso anfractus munita subcarinatis; apertura ovata, fauce argentea; columella alba, arcuata, ad basin expansa et plicata. Color luteo fulvescens. (Fischer.)

38. PARVULUS, pl. xiii. f. 153, *Philippi*, Zeitschr. für Malakoz. 1848, p. 189.—Testa parvula, ovato-conoidea, imperforata, marmorata, varii coloris; anfractus convexiusculi, cingulis parum elevatis, interstitia transversim striata, superantibus læviusculis, lineisque incrementi regulariter distantibus parum conspicuis sculpti; apertura ovata; peristoma simplex; columella haud expansa.—HAB. Liew Kiew Island. (Admiral Cecille.)—An interesting species, only known to me by figure and description.

39. CAILLETI, pl. xii. fig. 149, *Fischer et Bernardi*, Journal de Conchyliologie, 1859, p. 294.—T. testa perforata, conica, solida, rufa, punctis albis minutis notata; transversim costis validis et inter quas minoribus ornata, nitida; sutura impressa; anfractibus 5–6 convexis, rapide accrescentibus, ultimo permagno, reliquum testæ superanti; costis 6, posticis sat elevatis, et sulcis minoribus obsoletis circa umbilicum munito; apertura ovata, transverse dilatata; columella alba, incrassata, peristomate simplici, acuto. Operculum typicum. (F. et B.)—HAB. Guadeloupe (M. Caillet).—The figure is copied from the 'Journal de Conchyliologie,' the species being otherwise unknown to me.

40. QUADRISERIATUS, pl. xii. f. 139, *Anton; Philippi* Mon. p. 75, pl. xvii. f. 18.—T. testa ovato-conoidea, imperforata, fusco-crocea, transversim striata, nodis obtusis circumdata; seriebus nodosum tribus in anfractu penultimo, quatuor vel quinque in ultimo, prima ad suturam sita, quarta angulum in anfractu ultimo formante; apertura circulari; columella lata extus callo circumdata. (Phil.)—HAB. West Indies.—A remarkable little species, known to me only by the figure and description.

Section 3. *Ocana.*

41. *CIDARIS*, pl. iv. f. 35, and viii. 82, *Gmelin*, Syst. Nat. p. 3596—*Delessertii*, *Kiener*.—Testa suborbicularis, subumbilicata, rufo-fusca, maculis albidis radiata et zonata; spira depressiuscula; anfractus rotundati lævi; apertura subcircularis, intus argentea; peristoma simplex; columella concavo-effusa. Operculum extus albidum, late umbilicatum, umbilicum perspectivum, ubique spinis minutissimis aculeatis asperatum, costa lata subcentrali, et lira unica marginali munitum.—A very distinct *Rotella*-like species, allied in general appearance to *T. natalensis*, a ribbed species, of which it might have been considered a smooth variety; its operculum, however, is quite different, so that the two species have been placed in different genera.—HAB. Cape of Good Hope.

42. *CIRCULARIS*, pl. iv. f. 37, *Reeve*, Conch. Icon. f. 46—*Gruneri*, *Philippi*.—Testa suborbicularis, imperforata, alba, rosaceo-fusco alboque marmorata, spira breviuscula; anfractus superne depressi, liris elevatis obtuse nodiferis alternatim majoribus cingulati; apertura subcircularis, columella arcuata, plano-concava.—A strongly ribbed species somewhat allied to *T. natalensis*, but quite distinct.—HAB. Swan River, Australia.

Section 4. *Sarmaticus.*

43. *SARMATICUS*, pl. v. f. 43, *Linnaeus*, Syst. Nat. (12th edit.), p. 1235—*Sarmaticus classarius*, *Gray*.—Testa suborbicularis, ventricosa, imperforata, aurantio-flavidula, nigro et fusco-rubro radiata et fasciata; spira brevissima; anfractus superne depressiusculi, deinde convexi, plus minusve spiraliter lirati; anfractus ultimus plerumque conspicue triangulatus, plus minusve nodulosus; apertura expansa; labrum nigro-limbatum; columella plano-expansa, ad basin effusa. Operculum extus album, tuberculis copiosis elevatis, conglomeratis peculiariter cristatum.—A well-known species, commonly uncoated and polished for ornamental purposes. It has a very peculiarly tufted operculum.—HAB. South Africa.

44. *NATALENSIS*, pl. v. f. 44, *Reeve*, Conch. Icon. sp. 1.—Testa orbicularis, depressiuscula, subumbilicata, nitida,

olivacea vel viridula, rufo radiatim maculata et punctata; anfractus 5 convexi, spiraliter costati; costis numerosis, rotundatis; apertura subobliqua, rotundata. Operculum extus album, peculiariter cristatum.—In appearance somewhat like *T. cidaris*, but differing in being spirally ribbed, and in having an operculum like that of *T. sarmaticus*.—HAB. South Africa.

Section 5. *Lunella*.

45. PORCATUS, pl. vi. f. 49, 50, *Reeve*, Conch. Icon., sp. 52.—Testa orbicularis, profunde umbilicata, viridis, rufo-olivaceo nitide marmorata; spira depressiuscula, sutura excavata; anfractus subangulati; costis elevatis rotundatis minute crenulatis (lira minuta interveniente), spiraliter cingulati; anfractus ultimus ad basin productus; apertura circularis; labrum crenulatum; columella attenuata, ad basin producta, effusa. Operculum circulare, extus valide convexum viridula, minutissime granulatum.—Allied to *Turbo mespilus*, but distinguished by its strongly-ribbed growth.—HAB. North Australia.

46. UNULATUS, pl. v. f. 42, *Martyn*, Univ. Conch.; *Chemnitz*, Conch. Cab.—Testa orbicularis, late et profunde umbilicata, albida, strigis cæruleo-viridis longitudinaliter picta, epidermide olivacea induta; anfractus 5, superne subangulati, deinde rotundati, interdum spiraliter sulcati; apertura subcircularis; columella leviter depressa. Operculum extus convexum, albidum, medio obsolete granulatum, ad peripheriam costa marginali munitum. This species, like the last, varies from smooth to grooved or ribbed.—HAB. New Zealand.

47. MESPILUS, pl. v. f. 40, 41, 45, *Gmelin*, Syst. Nat. (13th edit.), p. 3601 — porphyrites, *Gmelin* — versicolor, *Gmelin* — lugubris, *Kiener*.—Testa suborbicularis, lævigata vel spiraliter costata, vel sulcata, profunde umbilicata, viridula, olivaceo nebulosa et minute articulata, interdum fascia angusta lutea medio cingulata, interdum zonis angustis spiralibus viridi-articulatis picta; spira depressa; anfractus convexi, vix angulati; anfr. ultimus inferne leviter productus; apertura circularis; peristoma simplex; columella planulata, ad basin effusa et producta. Operculum circulare, extus valde convexum, nitens, partim albidum, partim

viride, minutissime granulatum.—A very variable species. The smooth marbled form (fig. 45) represents *T. porphyrites*; the ribbed form, with green articulated spots (fig. 40), *T. versicolor*; fig. 42 represents a ribbed shell of a plain reddish-brown colour. Another specimen I have before me is scarcely ribbed, but spirally striated, of a reddish-brown colour, with a conspicuous yellowish central zone.—HAB. Philippines, Australia, &c.

48. CORONATUS, pl. v. figs. 51–54, *Gmelin*, *Syst. Nat.*, p. 3594—vars. *creniferus*, *Kiener*—*Hempritchi*, *Troschel*—*granulosus*, *Gmelin*—*lugubris*, *Reeve*—*modestus*, *Phil.*—Testa globosa, interdum perforata, plerumque albida, viridi et fusco tincta, interdum rufo-fusca; spira plus minusve depressa; anfractus circ. 5, superne levissime declives, spiraliter nodulosi, plus minusve corrugati, nodulis vel squamis elevatis ad sutura coronati; anfractus ultimus plerumque biseriatis squamatus, inferne productus; apertura circularis, vel subquadrata; columella lata impressa. Operculum extus valde convexum, granulatum, lividum.—A very variable species, illustrating the futility of depending on any one character for the establishment of a species. Fig. 51 represents the typical form, 52 *Hempritchi*, 53 *lugubris*, 54 *creniferus*. Some specimens are deeply and openly umbilicated, others slightly so, and others again have not the slightest indication thereof. Having examined a large number of specimens of different sizes, forms, and stages of growth, I am compelled to treat them as one species.—HAB. Indian Ocean, Red Sea, China Sea, &c.

Section 6. *Modelia*.

49. RUBICUNDUS, pl. vii. f. 69, *Chemnitz*, 1803, 1804.—Testa orbicularis, imperforata, rubicunda, punctis albidis notata; spira abbreviata; anfractus rotundati, liris granulatis undique spiraliter ornati; apertura subcircularis, fauce argentea, sulcata; columella tenuiter expansa, levissime concava. Operculum extus album, medio subgibbosum et minute granulatum, ad peripheriam subcanaliculatum.—A beautiful species profusely ornamented with beaded ridges.—HAB. New Zealand.

50. GRANOSUS, pl. vii. f. 70, *Martyn*, *Univ. Conch.*—Differing but little from *T. rubicundus*, excepting in its smaller

size. The granules are larger, the upper whorls less rounded, and the body-whorl somewhat more ventricose. It is with some hesitation that I admit it as a species, but from the limited number of specimens I have seen I have not been able to connect it with certainty with *T. rubicundus*.—HAB. New Zealand.

51. GUTTATA, pl. vii. f. 68, *A. Adams*, Proc. Zool. Soc. 1863.—Testa conica, obtecte umbilicata, carnea, aureo-tincta, guttulis rubidis conspersim depicta; spira elata; sutura profunde canaliculata; anfractus circ. 6-7, convexi, cingulis granorum moniliformibus subdistantibus instructi; apertura oblique ovata; columella valde arcuata, latiuscula, tenuiter effusa. Operculum extus album, minute tuberculatum, ad peripheriam subcanaliculatum.—A rare and remarkable species, with much the same sort of granulation as in *T. rubicundus*, but of a conical form, and with a deeply excavated suture.—HAB. Tatiyama (*A. Adams*).

Section 7. *Prisogaster*.

52. NIGER, pl. iv. f. 28, *Gray*, Beechy's Voyage, p. 143.—Testa subglobosa, solida, nigra, spiraliter sulcata, longitudinaliter subtilissime striata; apertura subcircularis, intus argentea, sulcata; labrum nigro limbatum. Operculum crassum, extus convexum albidum, leviter granulosum.—A solid black species, having much the appearance of the common Periwinkle (*Littorina littorea*).—HAB. Coast of Peru.

Section 8. *Callopoma*.

53. SAXOSUS, pl. iii. f. 24, 25, *Wood*, Index Test., Supp. pl. vi. f. 45—venustus, *Philippi*—*Mitzeichii*, *Anton*.—Testa ovato-conica, solida, imperforata, viridis, fusco-variegata; spira acuta; sutura impressa; anfractus 5, superne leviter concavi, priores medio carinati, ubique spiraliter lirati, concentricè striato-lamellosi, prope suturam tuberculosi; anfr. ultimus plus minusve obscure biangulatus, interdum squamis erectis bi- aut tri-seriatim armatus; tuberculis suturalibus plus minusve elevatis; apertura subcircularis. Operculum circulare extus sordide album, elevatum, crassum, undique subtilissime granulatum, medio anguste umbilicatum, ad

peripheriam costis 3-4 confertis serratis funiculatum.—This interesting species, which varies considerably as to its ribs, scales, and tubercles, belongs to Gray's genus *Callopoma* (founded upon its remarkable operculum), of which only one other species is known. Adams quotes three species, but two of these, *fluctuatum* and *tessellatum*, are simply varieties of one.—HAB. Panama.

54. FLUCTUOSUS, f. 26, 36, 57, 80, *Wood*, Ind. Test., Supp. pl. vi. f. 44—*fluctuatus*, *Reeve*—*Fokkesi*, *Jonas*—*assimilis*, *Kiener*—*saxosus* var., *Kiener*—*tessellatus*, *Kiener*—*solidus*, *Hanley*—*funiculatus*, *Philippi*—*Moltkianus*, *Reeve*.—Testa ovato-conica, solidiuscula, subventricosa, imperforata, olivacea, lineis niveis viridi-umbratis longitudinaliter picta, interdum virescente alba, zonis spiralibus viridis brunneo-articulatis picta; anfractus 5 convexi, plerumque superne angulati, liris plano-obtusis hic illic fere evanidis cingulati; apertura circularis; columella lata, alba, longitudinaliter subcanaliculata, inferne producta. Operculum extus medio album et lateraliter virescens, costa lata alba spirali centrali, et liris 5-6 marginalibus virescentibus serratis munitum.—The type of Gray's genus *Callopoma*, in which the operculum is very much like that of the preceding species. Here again several supposed species merge into one. Fig. 26 represents the typical form—f. 36, *Kiener's T. tessellatus*—f. 80, *Philippi's funiculatus*, which is much the same form as *Hanley's solidus*—f. 51 is another variety allied to *tessellatus*, but with the body-whorl regularly rounded, and of an unusual colour.—HAB. West Coast of America.

Section 9. *Ninella*.

55. TORQUATUS, pl. iii. f. 22, 23, *Gmelin*, Syst. Nat. p. 3597—*heteroclitus*, *Kiener*—*lamellosus*, *Broderip*.—Testa orbicularis, plus minusve conica, vel depressiuscula, late et profunde umbilicata, olivacea et viridula, aut sordide alba; anfractus 6, plus minusve angulati vel rotundati, creberrime concentricè lamellati, spiraliter lirati, prope suturam nodulosi; apertura circularis; peristoma simplex; columella alba, lata, ad basin canaliculata. Operculum extus album, minutissime granulosum, valide spiraliter bicostatum, et bicaniculatum.—The variety named by *Broderip lamellosus* (of which a young specimen is figured, f. 22) is almost sufficiently distinct to rank as a species. The differences, however, are only of

degree, and finding various intermediate forms, I am compelled to consider it only a variety.—HAB. West Australia, &c.

Section 10. *Bolma*.

56. *RUGOSUS*, pl. vi. f. 60, *Linnaeus*, Syst. Nat. (12th edit.) p. 1234—*cumanensis*, *Valen.* (genus *Bolma*, *Risso*).—Testa globoso-conoidea, imperforata, sordide viridula; spira gradata, sutura impressa; anfractus plus minusve angulati, spiraliter scabroso lirati, superne plicis prominentibus coronati; apertura subcircularis, plus minusve obliqua; labrum aurantio limbatum; columella late expansa, conspicue rufo-aurantio tincta. Operculum crassum, extus rufo-aurantium, politum, costa lata rotundata spirali munitum.—This species is always easily recognised by the bright orange-red colour of the broadly expanded columella, and of the operculum. Adult specimens vary considerably in size, the smaller being usually very solid, and those attaining a larger size comparatively light. In quite young specimens the crown generally consists of erect spines.—HAB. Mediterranean.

57. *GYRILLUS*, pl. vii. f. 73, *Reeve* (*Trochus*), Conch. Icon. sp. 53.—Testa conico-turbinata, imperforata, rosea; spira elata, acutiuscula; sutura impressa; anfractus undique papillato-granati, superne concavo declives, deinde biangulati, ad angulos squamis peculiariter late expansis armati; basis subconvexa, in regione umbilicali callo tenuiter effuso aurantio induta; apertura suboblique ovata.—Very nearly allied to *T. modestus* of the same author; the whorls are more squarely convex, and the scales larger and curiously expanded. Not having seen many specimens, I can only admit the species provisionally, as the differences distinguishing it from the last named may or may not be constant.—HAB. China.

58. *MODESTUS*, pl. xii. f. 150, *Reeve*, Proc. Zool. Soc. 1842, Conch. Icon. sp. 56.—Allied to *T. gyrillus*, but of a more slopingly conical form, and with the scales more pointed, not squarely expanded as in that species. Possibly *T. gyrillus* may be considered a local variety of this species; but as far as I have seen, it seems sufficiently distinct to be separated. Both species are very rare, and the operculum seems to be unknown.—HAB. Japan.

Section 11. *Collonia*.

59. *TRANSENNA*, pl. xiii. f. 166, *Watson*, Moll. 'Challenger Expedition,' p. 714.—Testa suborbicularis, solida, imperforata, alba, superne breviter conica, inferne oblique expansa; anfractus circ. 6, rapide accrescentes, lineis angustis impressis oblique decussatim reticulati; sutura vix impressa; apertura subcircularis, obliqua, margaritacea; peristoma simplex; columella late effusa. Operculum planum perporcellanum.—A very remarkable species, which may be taken for the largest of the *Collonia* section. Only one specimen of it was found in the 'Challenger' Expedition, in lat. 34° 7' N., long. 138° 0' W., Japan, 365 fathoms in mud. The sculpture is unlike that of any other species of the genus, consisting of narrow impressed intersecting lines which cross the whorls obliquely. The apex of the specimen is much eroded, and its whole aspect is that of an old worn shell. It was, however, taken with the animal, which has been well described by the Rev. R. Boog Watson.

60. *INDUTUS*, pl. xiii. f. 168, *Watson*, Moll. 'Challenger' Expedition, p. 715.—Testa parva, imperforata, conoidea, elata, alba; anfractus 6, rapide accrescentes, convexiusculi, spiraliter minutissime striati, oblique filo-striati, sutura crenulata; apertura obliqua, margaritacea; labrum crassum; columella arcuata vix effusa, leviter excavatum. Operculum tenue, complanatum, calcareum.—HAB. Culebra Island, St. Thomas, Danish West Indies, 390 fathoms.

61. *PYROPUS*, pl. viii. f. 87, *Reeve*, Conch. Icon. sp. 61.—Testa subdepresso-ovata, imperforata, rubra; spira abbreviata; anfractus convexi, rotundati, spiraliter striati; anfr. ultimus inflatus; apertura ampla, circularis, obliqua; labrum crassum; columella leviter concava, vix expansa.—Next to the new Challenger species *transenna*, this is the largest of the *Collonia* section. Like others of the section it is of a deep red colour, of rather solid growth, with a somewhat oblique aperture. Its locality is unknown; and the specimen, at present unique, is in the British Museum:

62. *SANGUINEUS*, pl. xii. f. 146, *Linnaeus*, Syst. Nat. (12th edit.) p. 1235—*Globulus roseus*, *Chemnitz*—*Turbo coccineus*, *Muhlf.*—*corallinus*, *Reeve*—*Collonia quantilla?* *Gould.*—Testa suborbicularis, imperforata, solida, sanguinea;

spira obtusa; sutura impressa; anfractus convexo declives, spiraliter conspicue sulcati; anfr. ultimus rotundatus inferne leviter compressus; apertura oblique ovata labrum crassiusculum; columella callosa inferne minute uni-tuberculatum. Operculum complanatum, extus album, medio corrugatum. —Easily distinguished from others of the group by its strong spiral grooves and uniform colour.—HAB. Mediterranean. Specimens in the British Museum from Hakodadi, Japan.

63. MURREUS, pl. viii. f. 84, *Reeve*, *Conch. Icon.* sp. 54.—Testa minuta, suborbicularis, vix umbilicata, lævigata, polita, alba, roseo nitide maculata.—A minute smooth shell, delicately spotted with rose colour.—HAB. — ?

64. VERRUCA, pl. viii. f. 86, *Gould*, *Proc. Boston Soc. Nat. Hist.* vol. ii. p. 27—*Collonia glariosa*, *Gould*—*Turbo sanguineus*, *Reeve*, non *Linn.*—*T. roseus*, *Philippi*.—Testa parva, subglobosa, umbilicata, alba, maculis sanguineis interruptis cingulata; spira parviuscula; anfractus convexi, spiraliter lirati; apertura subcircularis, fauce sulcata.—A prettily spotted ribbed species, somewhat varying in form.—HAB. Sandwich Islands.

65. MARGINATUS, pl. viii. f. 94, *Nuttall?*, *Reeve*, *Conch. Icon.* sp. 56.—Testa subovata, solida, imperforata, albida, livido-olivaceo tincta et maculata; spira brevis, acutiusecula; anfractus convexi spiraliter minutissime sulcati; anfr. ultimus ventricosus; apertura parva oblique ovata; labrum crassum. Operculum extus politum crassiusculum.—A moderately large species of the *Collonia* group, thick, whitish, tinged and mottled with livid olive colour. It has a smooth appearance, but is finely spirally grooved throughout.—HAB. Upper California.

66. AMUSSITATUS, pl. viii. f. 85, 92, 95, *Gould* (*Turbo*), *Proc. Bost. Soc. Nat. Hist.* 1861, vol. viii.—*Collonia sangarenensis*, *Schrenck*—*Collonia rubra* *A. Ad.* MSS.?—Testa ovata, imperforata, rufo-purpurea; spira tumida; sutura impressa; anfractus convexi, rotundati, spiraliter rugose striati, et costis irregularibus plus minusve nodulosis cingulati, lineis obliquis incisus sculpti; apertura parviuscula, subcircularis. Operculum subplanatum, extus album, minute granulosum, centro depressiusculo.—HAB. Japan.

67. SQUAMATUS, pl. viii. f. 88, *A. Adams*, MSS.?—Testa ovato-conica, tenuicula, imperforata, sordida; spira acutius-

cula; anfractus 5, superne concavo declives, deinde obtuse angulati, spiraliter lirati, utrinque spiraliter minute striati, et striis obliquis minutissime squamatis sculpti; anfr. ultimus ad peripheriam angulatus; apertura parviuscula, subcircularis.—Specimens in the British Museum with name by A. Adams, but he does not seem to have published any description of the species.—HAB. Unknown.

68. NOCTURNUS, pl. viii. f. 90, *Gould*, 'Otia,' p. 160—*Collonia variegata*, *A. Adams*.—Testa parva, subovata, rubido-purpurea, interdum hic illic albo-strigata; spira tumida; anfractus rotundati, costis numerosis confertis glabratis spiraliter cingulati; anfr. ultimus ad peripheriam obtuse angulatus, costis infra angulum minoribus; apertura parviuscula, subcircularis. Operculum subplanatum, extus albidum, minute granulosum, centro depressiusculo.—HAB. Japan.

69. ARMILLATUS, pl. viii. f. 93 (reversed by error)—*Collonia armillata*, *A. Adams*, MSS.?—Testa suborbicularis, imperforata, albida, flammulis obliquis angustis rubro-fuscis ornata; spira depressiuscula; anfractus rotundati, costis latiusculis, confertis subplanulatis spiraliter cingulati.—HAB. Australia. Specimens in the British Museum with the above name by A. Adams, but he does not seem to have published any description of the species.

70. ELEVATUS, pl. viii. f. 96, *Souleyet*, 'Voyage de la Bonite,' t. ii. p. 594, pl. 37, f. 15-19—propinquus, *Hupé*.—Testa ovato-conica, imperforata, cinereo-nigra; spira subacuta, elevata; anfractus 5, convexi, ad suturam parum excavati, sublævigati aut spiraliter et obsolete lirati; anfractus ultimus reliquum testæ superans, infra convexus; apertura ovata, intus argentea; labrum nigrum; columella planata, depresso-concaviuscula. Operculum extus album, undoso-striatum, subumbilicatum.—HAB. Chili. Specimen in the Paris Museum.

71. MACULOSUS, pl. xiii. f. 154, *Pease*, *American Journal of Conchology*, vol. iv. p. 91.—Testa parva, globosa, umbilicata, nitida, tenuicula, concentrice irregulariter costata, interstitiis sulcatis, concavis, transversim subtilissime striata; alba, costis maculis roseis distantibus maculata. (*Pease*.) Diam. 2, alt. $1\frac{1}{2}$ mill.—HAB. Paumotus (Polynesia).

72. FRICKI, pl. xiii. f. 155, *Crosse*, Journ. de Conch. 1865.—Testa anguste umbilicata, depresso-turbinata, crassiuscula, albida, nigro plus minusve variegata; sutura subrenulata; anfractus 4, rapide accrescentes, spiraliter tenuissime striati et costis 2 validis, carinam formantibus cingulati; ad suturam subplani, deinde convexiusculi; anfr. ultimus tricostato-carinatus, ad basin plano-convexus, et spiraliter granulato-striatus; apertura rotundata, margine basali valide incrassato.—HAB. California.

73. NANINUS, pl. xiii. f. 156, *Souverbie*, Journ. de Conch. 1864—Collonia roseopunctata, *Angas*.—Testa minuta, umbilicata, orbicularis, alba, punctis rosaceis notata; anfractus 4, rotundati, spiraliter minute costato-striati; apertura obliqua, subrotunda. Operculum extus album, profunde immersum.—HAB. Caledonian Archipelago (*Souverbie*), S. Australia (*Angas*).

74. RUBRICINCTUS, pl. xiii. f. 157, *Mighels*, Proc. Boston Soc. Nat. Hist. 1835—Collonia multistriata, *Pease*—Collonia rubrilineata, *Pease*.—Testa minutissima, imperforata, depresso-globosa, rosea sulcis transversis puniceis sculpta; anfractus 4, convexiusculi; apertura suborbiculari.—A very minute species, with red transverse lines.—HAB. Sandwich Islands.

75. SUPRAGRANOSUS, pl. xiii. f. 158—Trochus supragranosus, *Smith*, Linn. Soc. Journ. vol. xii. p. 558, pl. xxx. f. 15.—Testa depresso-globosa, solida, anguste perforata, sordide alba, fusco radiata; spira depressiuscula; sutura impressa; anfractus 5, convexi, liris spiralibus (versus apicem granosis) cincti; anfr. ultimus ventricosus, liris circiter 20, spiraliter cingulatus; apertura circularis, intus margaritacea, tenuiter lirata; labrum crassum, margine acuto, album; columella arcuata superne lævissime reflexa.—HAB. Solomon Islands (*Brazier*).

76. CICER, pl. xiii. f. 159, *Menke* (Trochus); *Philippi*, Conch. Cab. Trochus, pl. xxix. f. 24; *Krauss*, Sudafrikanische Mollusken, pl. 98.—Testa parvula, globoso-conoidea, subperforata, solida, cingulis elevatis sculpta, alba, punctis rufis in strigis longitudinalibus confluentibus picta; anfractus convexi; ultimus rotundatus; apertura orbicularis, columella obliqua.—HAB. Cape of Good Hope.

77. *PILLULA*, pl. xiii. f. 160, *Dunker* (Liotia), Malakoz. Bl. vol. vi. p. 226—*Cynisca japonica* A. Ad.—Testa parva, ovata, umbilicata, albida, strigis rubro-fuscis picta; spira mediocriter elevata; sutura impressa; anfractus 5, convexi, spiraliter lirati, liris numerosis, subgranulosis; apertura subcircularis. Operculum extus valde convexum, albidum, granulosum, centro profunde umbilicato.—HAB. Japan.

78. *COSTULOSUS*, pl. xiii. f. 161, *Sowerby*—*costulatus*, *Gould*—*lætus*, *Montrouzier*—*Collonia læta*, *Adams and Angas*.—Testa parva, globosa, umbilicata, albida, vel luteola rufo-maculata et radiata; spira depressiuscula, sutura vix impressa; anfractus spiraliter lirati, liris numerosis, alternatim minoribus; apertura subcircularis; peristoma crassa.—In sculpture much like the preceding, but of a more depressed form. The names *costulatus* and *lætus* being used for other species, I am obliged to alter the construction of *Gould's* name.—HAB. New Caledonia, New Hebrides, &c.

79. *CANDIDUS*, pl. xiii. f. 162, *Pease* (*Collonia*).—Testa minuta, umbilicata, depresso orbicularis, alba; anfractus 5, convexi, spiraliter striati; apertura oblique ovata.—HAB. Polynesia. A minute white shell of depressed form.

80. *MUNDUS*, pl. xiii. f. 163, *H. Adams* (*Collonia*), Proc. Zool. Soc. 1873, p. 206, pl. xxiii. f. 6.—Testa minima, profunde umbilicata, suborbicularis, alba; spira depressiuscula; sutura crenulata; anfractus 4, superne leviter concavi, deinde lirati; anfr. ultimus biangulatus, spiraliter valide 5-costatus, ubique subgranoso-striatus; apertura obliqua; labrum crassum.—HAB. Persian Gulf.

81. *CUNNINGHAMI*, pl. xiii. f. 170, *Smith* (*Collonia*), Proc. Zool. Soc. 1881, p. 33, pl. iv. f. 10.—Testa parva, subglobosa, imperforata, rosea; anfractus $4\frac{1}{2}$ convexi, spiraliter subtilissime striati; sutura impressa; anfractus ultimus inferne leviter complanatus; apertura oblique subcircularis, intus iridescens; columella margaritacea. Operculum extus albidum, complanatum.—A little dark rose-coloured shell, very finely striated.—HAB. Wolsey Anchorage, 17 fathoms, Patagonia (Survey of H.M.S. 'Alert').

82. *BACULA*, pl. xiii. f. 173, *Carpenter* (*Leptothyra*).—Testa parva, suborbicularis, imperforata, solidiuscula, nigro-fusca; spira obtusa; sutura impressa; anfractus 5, convexi,

spiraliter sulcati; apertura oblique ovata.—A little dark brown shell with distinct spiral grooves.—HAB. California.

83. MARMOREUS, pl. xiii. f. 171, *Pease*?—Testa minuta, ovata, imperforata, alba, pallide fusco-marmorata; spira parva; anfractus convexo-declives; ultimus leviter elevatus, infra medium obtuse angulatus; apertura oblique ovata.—HAB. Sandwich Islands? I find the species with the above name in the British Museum, but I have not been able to find the original description.

84. EXILIS, pl. xiii. f. 174, *Philippi*, Conch. Cab. p. 66, pl. xv. f. 6.—Testa minuta, suborbicularis, umbilicata, purpurea, regione umbilici alba; anfractus convexi, spiraliter sulcati; sulcis minutissime crenatis, in anfr. ultimo circ. 12.—HAB. —?

85. PUSIO, pl. xii. f. 140, *Anton*, in *Philippi*, Conch. Cab. p. 71, pl. xvi. f. 10.—Testa minima, globoso-conoidea, anguste umbilicata, flavescens, fusco-maculata et punctata; anfr. convexi, spiraliter striati; anfr. ultimus ventricosus, costa latiuscula elevata crenata umbilicum cingente munitus; apertura subcircularis.

86. CALIFORNICUS, pl. xii. f. 147, *Troschel*, in Berlin Museum.—Testa parva, perforata, globoso-conoidea, solidissima, alba, puniceo-variegata; anfractus 4, convexi, spiraliter confertissime striati; anfr. ultimus ventricosus, obsolete costatus; apertura circularis; labrum crassum, intus dense crenulatum.—A very solid species, white, variegated with light red, very closely striated, interior densely crenulated.—HAB. California.

Section 12. *Astralium*, and *Calcar*.

87. HELIOTROPIUM, pl. xi. f. 128, *Martyn* (Trochus)—Trochus solaris imperialis, *Chemnitz*, Conch. Cab. p. 135—Trochus imperialis, *Reeve*.—Testa abbreviato-conoidea, ampliter umbilicata, purpureo-cinerea, ubique transversim oblique squamoso-lirata; anfractus circiter 6, superne convexi, inferne leviter concavi, acutimarginati, ad marginem squamis magnis planulatis radiati; basis convexuscula, imbricato-quadricostata; apertura obliqua; labrum tenue. Operculum ovale, extus leviter convexum, albidum vel flavescens, politum, costa spirali fere obsoleta munitum.—A fine bold

handsome species, so different from any other that it needs little in the way of description, but may be recognised by a glance at the accompanying figure.—HAB. New Zealand.

88. LONGISPINA, pl. xi. f. 131, 132, *Lamarck* (Trochus), *Anim. sans Vert.* vol. ix. p. 122—Trochus solaris Indiæ, *Chemnitz*—Calcar majus, *Chemnitz*—Trochus heliaceus, *Philippi*—T. inermis, *Gmelin*—T. aster, *Philippi*—T. armatus, *Philippi*.—Testa depresso conoidea, anguste profunde umbilicata, aureo-ferruginea; anfractus circ. 6, superne lævissime convexi, inferne concaviusculi, acutimarginati, ubique rugis squamatis crenulatis promiscue sculpti, ad marginem squamis subnumerosis (in anfr. ult. circ. 13) planatis acutiusculis radiati; basis convexa, circulariter trilirata, radiatim dense striato lamellata. Operculum ovale, extus album, crassum, obsolete granosum, ad marginem excavatum.—A very pretty species, of a flattish form, with the margin ornamented with largish flattened scales; the whole surface is irregularly crisply scaled.—HAB. West Indies.

89. COSTULATUS, pl. xi. f. 130, *Lamarck*, *Anim. sans Vert.* vol. ix. p. 127.—Testa sublate conica, obtecte umbilicata, aureo-ferruginea aut fulvescens; anfractus convexo declives, superne rugoso plicati, deinde obscure spiraliter costati, oblique lamellosi striati, ad marginem squamis numerosis breviusculis acutis planulatis radiati; basis convexa, radiatim dense striato-lamellata, circulariter obscure quadrilirata.—Nearly allied to *longispina*, but more conical, with umbilicus closed, and marginal scales smaller and more numerous.—HAB. West Indies.

90. BREVISPINA, pl. xii. f. 138, *Lamarck* (Trochus)—auripigmentum, *Jonas*—Uvanilla brevispina, *Chemnitz*—Calcar brevispina, *Fischer*.—Testa abbreviato-conoidea, imperforata, lutea et virente, albo minute tæniata; anfractus circ. 7, planato declives, spiraliter seriatim granulati, striis obliquis plus minusve rugosis sculpti, acutimarginati, ad marginem squamis brevibus planatis acutis radiati; basis levissime convexa, radiatim dense lamellato-striata, circulariter obscure lirata, callo centrali aureo-rufo; apertura obliqua, infra angulata. Operculum ovale, extus albidum, unicostatum, granoso-striatum.—More regularly conical than the last

species, with the marginal scales less numerous. The golden or orange-red callosity is characteristic.—HAB. Panama.

91. ORICHALCEUS, pl. xii. f. 143, *Koch* (Trochus), *Zeitsch. f. Malakoz*, 1848, page 110; *Philippi*, *Conch. Cab.* 360, pl. xli. f. 2.—Testa depresso-conoidea, imperforata, apice retusa, aureo-fulva; anfractus priores complanati, deinde concavo declives, superne oblique costati, deinde spiraliter aculeati, inferne acute marginati, ad marginem spinis numerosis (in anfr. ult. circ. 18) aculeatis compressis radiati; basis convexa, circulariter 5-6-costata, radiatim dense striato-lamellata.

92. LATISPINA, pl. xii. f. 137, *Philippi* (Trochus), *Abbild. et Beschr. Conch.* vol. i. p. 92, pl. iii.—Trochus latispina, *Reeve*, *Conch. Icon.* sp. 40.—Testa abbreviato-conoidea, obtecte-umbilicata, cinereo-fusca, cæruleo-olivaceo et albo lentiginosa; anfractus planato-declives, acutimarginati, granis oblique productis seriatim aspersi, ad marginem squamis brevibus acutis radiati; basis leviter convexa, radiatim lamellato-striata, circulariter valide quinquelirata; apertura obliqua, angulata. Operculum ovale, extus album, lævigatum, arcuatim et late unicastatum.—HAB. West Indies, Rio Janeiro, &c.

93. STELLARIS, pl. xi. f. 126, *Gmelin*—Trochus stellaris, *Lamarck*, *Reeve*, *Conch. Icon.* sp. 47.—Testa late conoidea, crassa, imperforata, spadicea; anfractus concavo-declives, oblique corrugato lirati, ad marginem squamis magnis subfimbriatis radiati; basis convexa, circulariter dense imbricato-lirata; apertura rotunde ovata; columella crassa, argentea. Operculum crassum, extus albidum, obsolete granosum.—A shell of much more solid growth than *T. longispina*, *costulatus*, &c., with thicker marginal scales.—HAB. South Sea, New Caledonia, &c.

94. CHEMNITZII, pl. xi. f. 127, *Valenciennes*, 'Voy. de la Venus,' pl. ii. f. 1—Trochus asteriscus, *Reeve*, *Conch. Icon.* sp. 44.—Testa conica, sub-elata, imperforata, albida aut flavescente spadicea; anfractus planato-declives, oblique leviter rugati, ad marginem squamis magnis fornicatis radiati; basis lævissime convexa, circulariter dense lirata, callo centrali interdum roseo, interdum cæruleo munita; apertura oblique ovata, peristoma simplex. Operculum oblongum, extus

valde convexum, cæruleo-tinctum.—A shell of regularly conical form, with large arched scales at the margin, and a rose or bluish green callosity adjoining the columella.—HAB. Port Essington, Australia.

95. ROTULARIS, pl. ix. f. 129, *Lamarck*—Trochus rotularis, *Reeve*, Conch. Icon. sp. 48.—Testa late conoidea, crassa, imperforata, spadicea, aut calcareo-alba, virescente pallide tincta; anfractus concavo-declives, subcorrugati, ad marginem squamis numerosis radiatim compressis peculiariter quadrato truncatis ornati; basis convexa, circulariter dense imbricato-lirata; apertura oblique ovata; columella crassa.—A very remarkable and easily recognised species, chiefly characterised by the peculiar squarely truncated character of the marginal scales.—HAB. Australia.

96. FIMBRIATUS, pl. x. f. 123, *Lamarck* (Trochus)—Trochus fimbriatus, *Reeve*, Conch. Icon. sp. 49—pileolum, *Reeve*—confragosus, *Gould*.—Testa subdepressa conoidea, imperforata, calcareo-alba; anfractus plano-vel concavo-declives, obscure corrugato striati, ad marginem expanso fimbriati; basis leviter convexa, circulariter imbricato lirata. Operculum ovale, extus album, valde convexum.—A depressly conical white shell with a broadly frilled margin.—HAB. Australia.

97. SQUAMIFERUS, pl. x. f. 124, *Koch*, in *Philippi*, Abbild. und Beschr. Conch. pl. iv. f. 9—Trochus fimbriatus var., *Philippi*.—Testa late conoidea, imperforata, flavescens-alba; anfractus superne convexi, inferne concaviusculi, ubique obscure plicato-corrugati, spiraliter liris creberrimis submuricatis sculpti, ad marginem planato fimbriati; basis lævissime convexa, circulariter squamato-lirata callo centrali subexcavato. Operculum ovale, extus album, valde convexum.—Allied to *T. fimbriatus*, but distinct. The whorls are more tumid, more regularly and closely sculptured, the marginal frill is flatter and not so broadly expanded, and the central callosity of the base is depressed almost into an umbilicus.—HAB. Australia.

98. SPINULOSUS, pl. xii. f. 136, *Lamarck* (Trochus), vol. ix. p. 127—Trochus spinulosus, *Reeve*, Conch. Icon. sp. 55.—Testa late conoidea, lutescente spadicea, imperforata; anfractus convexo-declives, oblique rude granoso-corrugati, ad marginem muricato squamati; anfr. ultimus ad marginem

tuberculis spiniformibus erectis biseriatim armatus; basis convexiuscula, dense squamato-lirata; apertura parva; peristoma biangulata; columella effusa.—The shell has been inadvertently figured with an operculum (probably of *T. cidaris*) which evidently does not belong to it. It was so placed in the British Museum from the Cumingian collection, hence the error.—HAB. Philippines (Cuming).

99. ACULEATUS, pl. x. f. 122, and xiii. 136, *Gmelin* (Trochus), Syst. Nat. ed. xiii. p. 3600, no. 48—*helicinus*, *Gmelin*—*calcar*, *Linn.*—*asperatus*, *Lamarck*—*stella*, *Lamarck*—*Spenglerianus*, *Chemnitz*?—Testa subglobo conoidea, solidula, plus minusve depressa, imperforata, luteola; anfractus circ. 7, plerumque convexiusculi, interdum concavi, oblique rugoso corrugati, ad marginem squamis plus minusve ramosis radiati; basis convexa, costis 2 conspicuis muricato-squamosis versus marginem cincta, deinde minute muricato-lirata; apertura plerumque aureo tincta. Operculum ovale, extus virescens, medio convexum, ad peripheriam attenuatum.—A very variable species, with spined margin, spines sometimes sharp, sometimes ramose. The shell is sometimes tumidly elevated, sometimes depressed; the mouth is generally tinged with yellow.

Subsection *Pachypoma*.

100. CÆLATUS, pl. ix. f. 99, *Chemnitz* (Trochus), Conch. Cab. vol. v. p. 33, pl. clxii.—Testa obeso-conica, infra convexa, imperforata, flavescens lactea, hic illic viridi variegata; spira tumida, sutura impressa; anfractus circiter 7, superne leviter concavi, oblique imbricato plicati, inferne obtuse angulati, muricato-squamati; basis valide imbricato-costata; apertura rotunde ovata, obliqua. Operculum ovale, extus albidum, valde convexum, granosum.—A fine species, approaching rather more nearly to the typical form of Turbo than others of the group, the margin being not so pronounced and angular, and the base more convex.—HAB. West Indies.

101. AMERICANUS, pl. ix. f. 98, *Gmelin*, Syst. Nat. 3581; *Chemnitz*, Conch. Cab. vol. v. p. 33, pl. clxii.—plicatododus, *Chemnitz*.—Testa subpyramidalis-conica, infra leviter planata, imperforata, albida; anfractus circiter 8, declives, leviter concavi, longitudinaliter corrugato-lirati, ad marginem

turgidi, rotundati; basis granoso-lirata, callo centrali albo; apertura oblique ovata; labrum crenulatum; columella oblique arcuata. Operculum oblongum, extus album, convexum, granosum, ad marginem attenuatum.—Distinguished by the regular succession of wrinkled ridges and the turgidly rounded margin of the whorls.—HAB. Florida.

102. IMBRICATUS, f. 97, 107, 115, 116, 133, *Gmelin*, Syst. Nat. p. 3581—*Trochus corolla*, *Reeve*—*Olfersi*, *Troschel*—*saxosus*, *Philippi*—*laciniatus*?—Testa conica, infra planata, imperforata, albida, carneo- vel fusco-tincta; anfractus circiter 8, superne convexiusculi, deinde plerumque leviter concavi, inferne acutimarginati, costis validis angustis plus minusve squamatis interdum medio interruptis infra marginem productis longitudinaliter ornati; basis rugoso-striata; apertura ovata; columella crassa, valde arcuata; labrum crenulatum. Operculum ovale, extus album, valde convexum, obsolete granulatum, ad peripheriam attenuatum.—A conical species, with very prominent descending ribs overlapping the basal margin. *Reeve's Trochus corolla* (pl. xii. f. 133) is a variety of this species of more pyramidal form than the type. Figs. 97 and 115, taken from shells in the British Museum, I have more hesitation in including, the whorls being more convex, and the base rather ventricose, still they are probably only somewhat abnormal forms of the same species. Fig. 116 represents *Philippi's T. saxosus*.—HAB. West Indies.

103. HÆMATRAGUS, pl. ix. f. 102, 103, 106, 110, *Menke*—var. *rhodostoma*, *Lamarck*—var. *columellaris*, *Philippi*.—Testa conica, albida, infra planata, imperforata; anfractus circiter 7, planato-declives, plicato-corrugati, ad marginem spinoso-squamati; basis circulariter dense imbricato-costata, callo centrali purpureo-roseo. Operculum ovale extus valde convexum, purpureum vel roseum, obscure malleatum, obsolete late unicostatum, ad peripheriam attenuatum.—A variable species of conical form, more or less roughly ribbed, spined or scaled at the margin, and characterised by a red or purple callosity in the umbilical region, and an operculum of the same colour. In f. 103 the marginal scales are blunt and tubular, forming a single row overlapping the basal angle. Fig. 102 represents *Trochus rhodostoma* of *Lamarck*, according to *Reeve* (*Conch. Icon. sp. 32*), in which the marginal scales are sharp and divided into two rows. Fig. 106 is

a neat form, very regularly conical, with more delicate and regular sculpture, and two rows of small regular scales at the margin. Fig. 110 is a young shell which has been mistaken for *T. aculeatus* of Reeve.

104. TUBEROSUS, pl. ix. f. 104, *Philippi* (Trochus)—petrosus, *Martyn*, *Abbild. und Besch. Conch.* vol. i. p. 62, pl. ii.—Testa subobtusè conica, spadiceo-alba, infra leviter convexa, imperforata; anfr. circ. 6, convexo-declives, plicato-corrugati, inferne angulati, plerumque squamis brevibus aculeatis biseriatim armati; basis circulariter squamato-lirati, callo centrali albo, vel purpureo; apertura subcircularis, argentea; columella arcuata, ad basin uniplicata; labrum crenulatum. Operculum extus album vel purpureo tinctum, obscure mallearum, tumidum, ad peripheriam attenuatum.—Nearly allied to *T. hæmatragus*, of which it may possibly be considered a variety, but distinguished by its more obtuse form, and the comparative smallness and closeness of the scales. Our specimen has a white callosity, but in other respects it is identical with the type, in which the callosity is reddish purple as in *T. hæmatragus*.

105. PAPILLATUS, pl. ix. f. 101, 109, *Potiez and Michaud* (Trochus), *Galér. des Moll. du Musée de Douai*, t. i. p. 337, pl. xxx. f. 10, 11.—Testa imperforata, conica, elevata, viridi olivaceo obscure zonata; spira acuta; anfractus 7, subplanulati, medio parum excavati, tenerrime et oblique striati, radiatim costulati; costis albis, obliquis, superne vix prominentibus, ad margines tuberculis; anfr. ultimus carinatus, tuberculis marginalibus 14 munitus, inferne convexiusculus, radiatim striatus, liris concentricis 5, subnodulosus approximatis munitus; apertura transversa; columella arcuata, inferne bituberculata; area umbilicali funiculo plicato marginata. Operculum extus album, granulose, costa mediana spirali munitum, umbilico excavato.—HAB. Antilles.

106. PAGODULUS, pl. ix. f. 100, Sowerby—Trochus aculeatus, *Reeve*, *Conch. Icon.* sp. 62.—Testa conica, imperforata, aurantio-spadicea; anfractus concavo-declives, oblique corrugato-plicati, inferne acutangulati, ad angulum squamis muricatis erectis armati; basis convexiuscula, circulariter squamato-bilirata; apertura angulata.—A neat little conical species of an orange colour, with the basal margin of the whorls prickly-scaled. The name given to the species by

Reeve (*aculeatus*) was pre-occupied by Gmelin. See species 99.

107. STELLATUS, pl. ix. f. 113, *Gmelin*, Syst. Nat. p. 3600—*Trochus stellatus*, *Philippi*, Mon. pl. xxi. f. 4; *Reeve*, Conch. Icon. sp. 64—*Calcar semicostatum*, *Kiener*.—Testa elato-conica, albida, vel olivaceo-viridis, infra planata, imperforata; anfractus circ. 7, planato-declives, planato-corrugati, ad marginem squamato-tuberculati; basis circulariter dense confertim squamato-striata, callo centrali pallide cæruleo. Operculum extus elevatum, obsolete granulatum, album, cæruleo marginatum.—Of a more elevated pyramidal form than most of the species of the group, longitudinally irregularly wrinkled, and armed with numerous short scales at the basal margin.—HAB. Indian Ocean.

108. CUBANUS, pl. ix. f. 108, *Philippi* (*Trochus*), Zeitschr. für Malac. 1848, p. 104.—Testa conica, spadiceo-alba, infra planata, imperforata; anfractus 7, planato-declives, superne nodoso plicati, deinde obsolete corrugato striati, inferne acutanguli, ad angulum squamis oclusis digitatis declivibus radiati; basis sparsim granata, in regione umbilicali callosa; apertura angulata; columella obliqua, argentea. Operculum extus album, granulosum, costa arcuata utrinque canaliculata munitum.—HAB. West Indies and Central America.

109. BARBELIS, pl. ix. f. 105, *Fischer*, Journ. de Conch. p. 205, 1874.—Testa imperforata, pallide lutescens, conica, elevata, apice acuta, anfractus 7, vix convexi, radiatim et oblique costati, costis distantibus, ad suturam prominentibus nodulosisque, interstitiis lævigatis; anfractus ultimus carinatus, ad marginem tuberculis 8 ornatus, infra planulatus, lævigatus, striis incrementi tenerrimis, obliquis munitus; regione umbilicali albo vel cæruleo marginata, unidentata; apertura angulata.—HAB. — ?

110. LAPILLUS, pl. ix. f. 111, *Reeve* (*Trochus*), Conch. Icon. sp. 65.—Testa obtuse conica, imperforata, fulvescens; ad basin rufescente tincta; anfractus superne depressiusculi, deinde tumido-rotundati, costis rudis irregulariter corrugatis et tuberculatis ornati; anfr. ultimus inferne obtuse angulatus, costis longitudinalibus ad angulum leviter recurvi; basis convexa, circulariter confertissime squamata.—Described by Reeve from a single specimen in the Cumingian collection,

and I do not know of any others. It may possibly be the young of some larger shell, but at present I have not been able to identify it.

111. HEXAGONUS, pl. ix. f. 114, *Philippi*, in *Kuster*, Conch. Cab. p. 130, pl. xxii. f. 9.—Testa subobtuse conica, elata, imperforata, albida, aureo-ferrugineo tincta; anfractus concavo-declives, rude plicato-corrugati, et malleati, medio tuberculis obtusis subdistantibus uniseriatim cincti; anfr. ultimus inferne subacute angulatus ad angulum plicatus; basis planiuscula, dense irregulariter squamata.—A shell of pyramidal form, chiefly distinguished by the row of tubercles being placed in or near the middle of the whorls instead of at the margin as in most species of the group.—HAB. Australia.

112. SIRIUS, pl. ix. f. 112, *Gould*, Wilkes' Exploring Expedition, vol. xii. p. 173, Atlas, f. 203.—I have figured this shell from a specimen in the British Museum, but the species seems to me an unsatisfactory one, having so much the appearance of a young shell.

113. PREVOSTI, pl. xii. f. 134, *Sowerby*, Thes. Conch.—Testa sublata conica, imperforata, viridula, fusco-tincta et fasciata; anfractus circ. 6, subconvexo-declives, liris minutissimis granulorum cincti, superne nodoso-plicati; anfr. ultimus inferne subacute angulatus, ad angulum squamis rugosis crassis subquadratis armatus; basis imbricato-quadrilirata, in regione umbilicali albo callosa; apertura subobliqua; columella arcuata, argentea.—A trochiform species, in which the longitudinal ribs may be only faintly traced, leaving nodules at the top of the whorls, and strong obtuse square-looking scales at the margin, while the whorls are encircled in the middle with two or three rows of minute granules. The shell partakes of some of the characters of *T. imbricatus* and *T. hæmatragus*, but wanting the continuous longitudinal ribs of the former and the coloured basal callosity of the latter, while it is distinguished from both by its shorter growth and the character of its marginal scales before mentioned. The specimen bore the name of *T. corolla* in the collection of the late Dr. Prevost, but it is not the *corolla* of Reeve, which I consider a variety of *T. imbricatus*.

114. AUREUS, pl. xii. f. 141, 142, *Jonas*, Zeitschr. für Malac. 1844, p. 168; *Reeve*, Conch. Icon. (Trochus), sp. 58,

&c.—Testa obtuse conoidea, plus minusve depressa, interdum aureo-fulva, interdum olivaceo-viridis, infra leviter convexa, imperforata; anfractus convexo-declives, superne plicato-corrugati, deinde granulati; anfractus ultimus inferne obtuse angulatus; basis lævissime convexa seriatim granulata; apertura obliqua. Operculum ovale, exalbidum, vix convexum, obsolete granulatum.—A very distinct and easily recognised little species, which might be taken at first sight for one of the *Gibbula* group of *Trochus*.—HAB. Australia.

115. HENICUS, pl. xii. f. 144, *Watson*, Moll. Challenger Expedition, Linnean Society's Journal, vol. xiv. p. 703.—A beautiful and remarkable new species, elaborately described by the Rev. R. Boog Watson, B.A., F.L.S., &c. Not having seen the shell, I do not venture to give a diagnosis, but the accompanying figure will give a general idea of the species. It partakes somewhat of the form and character of *T. hæmatragus*, but the sharp stellate keel is more like that of *T. latispina* or *auripigmentum*, but differently placed. The keel encircling the body whorl has about twelve sharp hollow compressed spines, and below this there is a second smaller keel, or sharp angle, to the base, with from thirty to thirty-five vaulted scales, which towards the mouth become spines; in the space between the two keels there are four rows of fine beads.—HAB. Matuka, Fiji, lat. 19° 10' S., long. 179° 40' E. 315 fathoms. Three specimens.

116. GIBBEROSUS, pl. x. f. 121, *Chemnitz* (*Trochus*), Conch. Cab. vol. x. p. 287—inæqualis, *Martyn*—ochraceus, *Philippi*—tentorium, *Anton*.—Testa late conica, imperforata; anfractus circiter 7, convexo-declives, oblique creberrime striati, superne costis parvis rugosis subnumerosis plicati, medio granulis parvis 3-4-seriatim cincti, ad angulum carina obsolete squamata vel undulata instructi; basis complanata, leviter convexa, valide circulariter crenato-lirata, callo centrali depresso; apertura angulata; columella obliqua. Operculum oblongum percrassum, intus concavum, nigro-fuscum, extus valide convexum, albidum ferrugineo-tinctum, versus marginem impressum.—A very characteristic species, not easily mistaken. Though by no means rare, the shell is seldom found in good condition, usually being much eroded, especially towards the apex. The operculum is remarkably thick and stony, and of a peculiar irregular oblong form.—HAB. Lower California.

Section 13. *Cookia*.

117. COOKIANUS, pl. vii. f. 72, *Chemnitz* 1540, 1554 (Trochus)—sulcatus, *Martyn*—*Davisi*, *Hutton*.—Testa tumido-conoidea, imperforata, sordide fusca; anfractus 7, rotundati, costis obliquis imbricato-squamosis, striis incrementi lamelliformibus dense oblique decussatis exsculpti; basis medio concava, versus marginem convexiuscula, dense imbricato-lirata; apertura oblique ovata; columella tenuiter late expansa, concava, fulvo tincta. Operculum ovale, extus album, fusco tinctum, lævigatum, costa latiuscula submarginali munitum.—This species, from its form, has long been considered a Trochus. It is the only species of Lesson's genus *Cookia*. *Hutton's T. Davisi* is a variety of this species of a more pyramidal form than the type.

Section 14. *Lithopoma*.

118. TUBER, pl. xii. f. 148, *Linnaeus* (Trochus), *Syst. Nat.* p. 1230.—Testa conico-turbinata, imperforata, albida, fusco et viridi maculata et variegata, lineis fuscis obliquis hic illic interruptis penicillata; anfractus plus minusve angulati, interdum oblique costati; anfractus ultimus subventricosus, plerumque nodoso biangulatus; basis convexa, oblique leviter striata, costis concentricis 4–5, fere obsoletis; apertura ovata. Operculum ovale, extus album, convexum, medio arcuatim unicostatum; costa prominente, granosa.—A shell of stony substance, rather smooth, with the last whorl mostly biangular, generally more or less noded, sometimes obsoletely ribbed at the upper part of the whorls, sometimes smooth.—HAB. West Indies.

Section 15. *Pomaulax*.

119. UNDOSUS, pl. x. f. 120, *Wood* (Trochus), *Index Test.* Supp. pl. v. f. 7—*T. gigas*, *Anton*.—Testa turbinato-conica, imperforata, albida, epidermide fusca dense fibrosa induta; anfractus declives, superne concaviusculi, inferne leviter concavi, oblique striati, costis brevibus obliquis, et nodulis majusculis exsculpti, ad suturam carina undato-tuberculata ornati. Anfr. ultimus infra medium conspicue undato-carinatus; supra carinam leviter excavatus, infra planus

Basis complanata, tricostata, in regione umbilicali callo albido bisulcato induta. Columella callosa, arcuata. Apertura obliqua. Operculum ovale, intus planum, olivaceum, virescens, apice marginali; extus album, rugosum, valide tricotatum, costis vix arcuatis, interstitiis profunde excavatis.—A fine species, often uncoated and polished for ornamental purposes.—HAB. California.

120. JAPONICUS, pl. x. f. 125, *Dunker* (Trochus), *Abbild. Conch.* vol. i. pl. 5, f. 1.—Testa depresso-conica, imperforata, fulvo-spadicea; anfractus circ. 8, declives, oblique granoso-corrugati, et promiscue plicati, ad marginem carina late squamosa irregulariter plicata et lobata ornati. Basis dense creno-lirata. Columella callosa, acuata. Apertura obliqua.—A very remarkable species of the same type as the preceding, but with a very expanded, irregularly-waved marginal keel.—HAB. Japan.

121. TAYLORIANUS, pl. xiii. f. 169, *Smith*, *Proc. Zool. Soc.* 1880, pl. xlviii. f. 9.—Testa turbinato-conica, infra plana, imperforata, purpureo-rosea, strigis obscurioribus perobliquis indistincte notata, ad basin albida. Spira breviter conica, marginibus rectiusculis. Anfractus circiter 8, declives, superne levissime concavi, inferne convexiusculi, ad suturam carina rugosa subsquamosa ornati, liris numerosis granulorum subæqualium parvorum cincti. Anfr. ultimus infra medium acute carinatus, supra carinam leviter excavatus, infra eam planus. Basis albida, zona externa purpureo-rosea cincta, seriebus concentricis granulorum ornata, in regione umbilicali callo albo lævi flavo-marginato induta. Columella albo-callosa, arcuata.—Although following Mr. Smith, I have placed this remarkable species provisionally under the section Pomaulax. In the absence of the operculum it is impossible to say to which section it properly belongs. It is very unlike the two preceding species, and its closely granulated surface reminds one of the *Ziziphinus* section of Trochus.—The locality is unknown. Specimen unique in the British Museum, late of the Taylor collection.

Section 16. *Uvanilla*.

122. OLIVACEUS, pl. xii. f. 145, *Wood* (Trochus), *Index Test. Supp.* pl. v. f. 7.—*T. erythrophthalmus*, *Philippi*.—Testa turgido-conoidea, olivacea, ferrugineo-rufa tinctoria et

flammulata, infra acutimarginata, imperforata; anfractus circ. 7, superne convexi, inferne concavi, ad marginem plus minusve laciniati, ubique costellis obliquis irregularibus striisque decussatis sculpti; basis albida valde concava, bilirata, liris granatis, callo centrali excavato, costa intense sanguinea cincto. Operculum ovale, extus albidum, valide bicostatum, medium excavatum, versus marginem tenuiter liratum.—A fine obtusely conical shell, with a remarkably concave base, and a deep blood-red umbilical rib.—HAB. Panama, Mazatlan, Lower California.

123. BUSCHI, pl. x. f. 117, *Philippi* (Trochus), *Abbild. und Besch. Conch.* vol. i. p. 90, pl. ii. f. 3-4.—Testa turgidoconoidea, viridula, ferrugineo-rufa aut roseo tincta, infra acutimarginata, imperforata; anfractus circ. 6, superne convexi, deinde concaviusculi, ubique costellis interruptis obliquis sculpti; anfr. ultimus ad marginem squamis 12-15 brevibus acutis latiusculis laciniatus; basis concava dense radiatim lamellato-striata, medium versus circulariter trilirata, callo centrali excavato. Operculum oblongum, extus album, politum, turgidum, infra medium sulca unica profunde excavata, longitudinaliter divisum, ad peripheriam attenuatum.—A very characteristic species, chiefly distinguished by the sharp-keeled, lacinated margin, rather tumid whorls, and concave base, with three keels round the umbilical depression.—HAB. Panama.

124. UNGUIS, pl. x. f. 119, *Wood*, *Index Test. Supp.* pl. v. f. 2.—Testa sublata conoidea, purpurascens spadicea, infra acutimarginata, concava, imperforata; anfractus circ. 6, inferne convexi, deinde concaviusculi, ubique corrugato-lirati, ad marginem squamis subnumeris truncatis descendibus laciniati: basis dense minute imbricato-lirata, circa umbilicum bicostata. Operculum ovale, extus albidum, valide adunco-unicostatum, ad peripheriam carinatum.—An easily recognised species. The vaulted scales overlapping the margin of the whorls are of peculiar character, not sharply pointed as in *T. Buschi*, rather square or rounded.—HAB. Panama.

125. URVILLEI, pl. x. f. 118, *Kuster* (Trochus), *Conch. Cab.* p. 215, pl. xxxii. f. 4—T. fimbriatus var., *Quoy et Gaimard*—T. tentoriformis, *Jonas*.—Testa conoidea, tenuicula, flavida, infra acutimarginata, imperforata; anfr. con-

cavo-declives, irregulariter granato-corrugati, ad marginem tenuiter fimbriati; basis concavo-planata, subtiliter squamato-lirata, liris 2 confertis circa umbilicum munita; columella callosa, argentea.—A conical yellowish species with a thin overlapping margin. *T. tentoriformis* of Jonas is a variety of more regularly conical form, in which the margin is not filled.—HAB. Australia.

126. DIGITATUS, pl. xii. f. 135, *Deshayes*, Mag. de Zool. 1841, pl. xxxvi.—Trochus digitatus, *Philippi*.—Testa abbreviato-conoidea purpurascens alba, infra acutimarginata, imperforata; anfractus circ. 7, superne convexi, medio leviter concavi, utrinque costis obliquis rugosis, interdum interruptis, super marginem productis ornati; basis leviter convexa, liris subdistantibus crenulatis exsculpta. Operculum ovale, extus albidum, costa elevata subangusta arcuata longitudinaliter divisum, ad peripheriam carinatum.—Allied to *T. unguis*, but distinguished by the ribs, which are of a rough squamate character and compressed form, crossing the whorls and extending below the margin, and also by the character of the base, which is slightly convex, and rather distantly ridged.—HAB. Panama.

Section 17. *Guildfordia*.

127. TRIUMPHANS, f. 151, 152, *Philippi*, Fünft. Jahr. des Ver. f. Naturk. p. 8—Imperator *Guildfordia*, *Gray*—Trochus *Guildfordia*, *Reeve*—*Guildfordia triumphans*, *Adams*.—Testa depresso-conoidea, imperforata, pupureo-rufescens; anfractus convexo-declives; granis minutis dense cingulati; anfr. ultimus ad marginem spinis longissimis radiatus; basis planato-convexa, minute 4-seriatim granosa, in regione umbilicali callo crasso induta; apertura parviuscula; labrum sinuatum. Operculum ovale complanatum, extus albidum, costa fere obsoleta arcuata.—This remarkable species needs little in the way of description, as no one can fail to identify it at a glance by its long marginal spines.—HAB. Japan.

ADDITIONAL SPECIES.

128. MOLUCCENSIS, pl. xiv. f. 177, *Philippi*, Mon. pl. xi. f. 5.—Testa globoso-conoidea, anguste umbilicata, viridi et rufo marmorata; anfractus 6, convexi, rotundati, costis

spiralibus parum elevatis inæqualibus, interstitiis angustis divisis, obsolete crenulatis sculpti; apertura subcircularis; labrum viridi limbatum, obsolete crenulatum.—A species of the *Senectus* group, only known to me from the figure in the 'Conchylien Cabinet.'—HAB. Amboyna.

129. *EUCCHARIS*, *Crosse* (Collonia), 'Journal de Conch.' 1865, p. 56 (no figure).

130. *SEMICOSTATUS*, pl. xiv. f. 179, *Pease*, Proc. Zool. Soc. 1860, p. 435.—Testa parva conico-ovata, imperforata; rufo-fulva, fusco marmorata et variegata; anfr. rotundati oblique striati, spiraliter costati; anfr. ultimus costis 4-5 parum elevatis supra medium spiraliter cingulatus, deinde glaber, infra medium zona lutea latiuscula ornata; apertura subcircularis, peristoma simplex; columella leviter arcuata ad basin parum effusa.—Unless it proves to be a young shell, this is the smallest species of the *Senectus* group. It is distinguished by the last whorl being ribbed at the upper part and smooth at the base.—HAB. Island of Capul (Cuming). Specimen in the British Museum.

131. *GADELOUPENSIS*, pl. xiv. f. 8-9, *Crosse* (Astrarium), Journal de Conch. 1865, p. 36, pl. i. f. 10, 11.—Testa subelato-conica, imperforata, solidiuscula, pallide rubro-aurantia, albo et olivaceo rare maculata; sutura impressa, irregulari; anfractus 6, concavo-declives, plicis longitudinalibus, medio subinterruptis (granulorum serie interveniente), demum nodosis prominulis ornati; basis concaviuscula, costis 5 subgranosis cingulata, radiatim striata. Operculum crassum subovatum, extus album, minute granulosum, axi perforato, costa prominula circumdato.—HAB. Guadeloupe.

132. *MACANDREI*, pl. xiv. f. 178, *Mörch*, 'American Journal of Conchology,' vol. iv. p. 46—*Omphalius cœlatus*, *A. Adams*, Proc. Zool. Soc. 1854, p. 39.—Testa suborbicularis, solida, perforata, carnea; spira depressiuscula; sutura vix impressa; anfractus 5, convexiusculi, spiraliter sulcati; anfr. ultimus ad peripheriam obtuse angulatus; apertura rotunde ovata; columella crassa. Operculum calcareum.—This species was described by *A. Adams* as an *Omphalius*, but having a calcareous operculum it is a *Turbo*; and as there was previously a *Turbo cœlatus*, the specific as well as the generic name had to be changed. Without the operculum

the species might be taken for an *Omphalius* or a *Gibbula*; as it is, it must be placed in the *Collonia* section of *Turbo*.—HAB. Mogador.

133. *PICTUS* (no figure), *Pease* (*Collonia*), 'American Journal of Conchology,' vol. iv. p. 91.—Testa parva, solidissima, globosa, umbilicata, concentrice costata; spira vix exserta; anfr. supra angulatis; apertura circularis; columella vix callosa, albida, superne rufo-castanea, longitudinaliter strigata, infra maculata.—Diam. 3, alt. 3 mill. (*Pease*).—HAB. Paumotus (*Polynesia*).

134. *GRANULOSUS* (no figure), *Pease*, 'American Journal of Conchology,' vol. iv. p. 92.—Testa globosa, orbicularis, late umbilicata; spira vix exserta; concentrice costata, costis subgranulosis; interstitiis concavo-sulcatis; apice obtusa; albida, strigis rubro-fuscis radiatis picta, circum umbilicum alba.—Diam. 5, alt. 3 mill. (*Pease*).—HAB. Ponape (*Polynesia*). A species of the *Collonia* group, allied to *supragranosus* (*Smith*).

135. *LENTICULUS* (no figure), *Gould*, Proc. Boston Society of Natural History, vol. viii. p. 21.—Not identified.

136. *PAUCICOSTATUS*, pl. xiii. f. 172, *Dall* (*Leptothyra*), Report Moll. W. Coast N. America, 1863, p. 652.—Testa parva, suborbicularis, imperforata, atro-purpurea, aut fusca; spira obtusa; sutura impressa; anfractus $4\frac{1}{2}$, convexi; ultimus superne et inferne sulcatus, deinde lævigatus.—A species of the *Collonia* section, allied to *T. bacula*, but grooved only on the upper and lower part of the body whorl, otherwise smooth.—HAB. California.

137. *SPLENDIDULUS*, pl. xiv. f. 180 and 181, *Sowerby*, Thes. Conch.—Testa ventricoso-conoidea, imperforata, aurantio-fusca, albo et fusco punctata et variegata; spira parviuscula, acuta, gradata; sutura vix impressa; anfractus circ. $6\frac{1}{2}$, superne concavo planati, deinde convexi, longitudinaliter oblique striati, spiraliter lirati; liris numerosis, inæqualibus (in anfr. penult. circ. 15), prima (ad suturam sita) prominula, leviter nodulosa, fusco alboque articulata, quinta maxima angulum distinctum formante; basis convexa, lævigata, subobsolete sulcata, maculis albis nigro-fusco umbratis picta, in regione umbilicali callo albo et aurantio induta; apertura subampla, circularis, fauce argentea.—

A handsome new species (specimen unique), met with accidentally without any information as to habitat. It is a true Turbo, scarcely a Senectus, although spirally ribbed. In form it is about intermediate between *T. Spenglerianus* and *T. circularis*. It has the shining character of the former; the whorls are surmounted by a concavely flattened ledge; the ribs are narrow and close, excepting on the base, which is nearly smooth.

138. SMITH, pl. xiv. f. 182, 183, *Sowerby*, Thes. Conch.—Testa ovato-conica, imperforata, luteo-fusca, aut lutea, aurantio-fusco nebulata; spira elevata, acuta; anfractus 5, superne declives, deinde convexi; longitudinaliter irregulariter striati, spiraliter costati; costis rugosis, irregularibus, parum elevatis, in anfr. penult. circ. 4, ult. circ. 12; apertura circularis; peristoma simplex; columella alba.—This species was confounded in the Cumingian collection with *T. semicostatus*, from which it is quite distinct, being of somewhat larger size, and ribbed on the base as well as on the upper part.—HAB. Island of Capul (Cuming).

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tuberosus, *Ph.*, 104, f. 104.
tumidulus, *Reeve*=*spinosus*.
tursicus, *Rve.*, 32, f. 75.
undosus, *Wood*, 119, f. 120.
undulatus, *Mart.*, 46, f. 42.
unguis, *Wood*, 124, f. 119.
Urvillei, *Kust.*, 125, f. 118.
variabilis, *Reeve*=*Reevii*.
variabilis, *Pease* (*Collonia*);
 not identified.
variegatus, *A. Ad.*=*nocturnus*
venustus, *Ph.*=*saxosus*.
versicolor, *Gm.*=*mespilus*.
verruca, *Gould*, 64, f. 86.
virens, *Anton*=*castaneus*.

SECOND
SUPPLEMENT TO MONOGRAPH OF THE GENUS
CONUS.

(SEQUEL TO P. 331, VOL. III.)

448. MELVILLI, *Sowerby* (f. 653).—*C.* testa abbreviato-subcylindracea, solida, obtuse angulata, lævi, antice crenulato-sulcata, griseo-albida, cinnamomeo-fusco longitudinaliter strigata, lineis fuscis undulatis transverse cincta; interstitiis lineis curvatis longitudinalibus hic illic irregulariter divisis; spira parum elevata; sutura irregulariter impressa; anfractus 7, convexiusculi, prope læves; apertura mediocriter lata, fauce castanea. Long. 20, maj. lat. 11 mill.

A short, somewhat cylindrical species, with obscure but characteristic markings, somewhat resembling those of *C. lucidus*, on a smaller scale; the transverse brown lines are more numerous, and the short longitudinal ones crossing the interstices less so. The light-brown waved streaks almost cover the shell, leaving small white patches between the transverse lines.

This shell was picked up on the beach at Key West (South Florida) in 1872, by Mr. J. Cosmo Melvill, and is at present the only specimen known.

449. CONCATENATUS, *Sowerby* (f. 654).—Testa subfusiformi, subtiliter granoso-lirata, postice acute angulata, antice attenuata, medio leviter contracta; albida, fusco irregulariter grandi-maculata, liris transverse fusco eximie articulatis; spira elata, conica; anfractus 11, leviter concavi, sub-acute angulati, ultimus ad angulum tuberculis minutis parum elevatis coronatus; apice acuto; apertura angusta, fusco tincta. Long. 31, maj. lat. 14 mill.

A very neatly marked shell, allied to *C. mahogani*, *ximines*, *tornatus*, &c., but perfectly distinct. The type, at present unique, is now in Mr. Melvill's collection. It was found in the collection of Sir Edward Belcher, labelled 'Panama,' but as the labels of that collection were many of them misplaced, the habitat is uncertain.

450. GRACILIS, *Sowerby* (f. 655).—C. testa elongata, fusca, maculis albidis irregulariter aspersa, sulcis angustis subdistantibus crenulatis cincta; spira elata, acuta, subgradata; apice papillari; anfractus 9, leviter concavi, spiraliter bisulcati, ultimus supra angulatus, basin versus multo attenuatus; apertura angusta. Long. 31, maj. diam. 10 mill.

A narrow elongated species, peculiarly produced at the base; of a darkish brown colour, with an irregular sprinkling of whitish patches. The unique specimen is now in the collection of Mr. Melvill, by whom it was purchased from the collection of the late Dr. Prevost. This is not (as supposed by Mr. Tryon) a variety of *C. aculeiformis*, differing very materially from that species in sculpture, and style of painting.

451. SUPERSRIPTUS, *Sowerby* (f. 656).—C. testa breviter oblonga, solidiuscula, angulata, turgidula, lævi, antice valide sulcata, albida, cæruleo tincta, maculis grandibus fulvis irregulariter ornata, fasciis numerosis angustis maculatis et quasi literatis cincta; spira abbreviata, fulvo strigata; anfractus concaviusculi, spiraliter sulcati; apice acuto, roseo; apertura subangusta, fauce purpureo-fusco tincta. Long. 27, lat. 14 mill.

The specimen is in the collection of the Marchioness Paulucci in Florence. Its bluish tinge of colour, and delicate letter-like markings are remarkable.

HAB. Madagascar.

452. PAULUCCIÆ, *Sowerby* (f. 658).—C. testa elongata, solidula, obsolete striata, obtusissime angulata, antice attenuata, albida, aurantiaco late interruptim fasciata, fasciis castaneo-fusco longitudinaliter strigatis, aliter lineis aurantiacis eximie trigono reticulata; spira pyramidalis; anfractus planiusculi, leviter spiraliter sulcati; apertura angusta, alba. Long. 60, maj. lat. 20 mill.

A beautiful species belonging to the *Cylinder* group, somewhat resembling *C. gloria-maris* in form, and *C. aureus*

in colouring. The type is in the collection of the lady after whom it is named. Several other specimens have been found, but it is still extremely rare.

HAB. Mauritius.

453. CARNALIS, *Sowerby* (f. 657).—C. testa oblonga, subpyriformi, solida, obtuse angulata, obsolete striata, antice leviter costata; pallide carnea, late pallide fusciscenti bifasciata; spira exserta, convexiuscula; anfractus 9, læviusculi, in medio depressi; sutura impressa; apertura mediocriter lata, carneo tincta.

A pale pink smooth shell, very faintly banded with buff. Specimen in the collection of Mr. Melvill, at present unique. Locality unknown.

454. BOCKI, *Sowerby* (f. 659).—C. testa turbinata, pallide lutea, luteo-fusco transversim multifasciata, et longitudinaliter strigata, hic illic nigro-fusco radiata; spira breviuscula albida, promiscue luteo strigata, ad apicem leviter prominente; anfractus leviter concavi, serie tuberculorum coronati, ultimus supra angulatus, ad angulum tuberculis grandibus coronatus, infra angulum lævigatus, deinde leviter granoso-costatus; apertura alba, mediocriter lata; labrum leviter arcuatum, columella contorta. Long. 60, lat. 32 mill.

Resembling the Chinese *C. sulcatus* in form, but a much smoother shell, and more deeply coloured; the chief difference however is in the crown; *C. sulcatus* being characterised by a sharp undulating keel at the angle, forming a raised ridge round the depressed whorls of the spire; while in *C. Bocki* the crown is formed of slightly angular nodules, between which the angle is rounded.

HAB. Amboyna. Specimen in Mr. Melvill's collection.

455. BACCATUS, *Sowerby* (f. 660).—C. testa abbreviaturbinata, turgidula, minutissime decussata, conspicue seriatim granulata, albida, maculis aurantiacis grandibus trifasciata; spira parum elevata; anfractus concavi fere læves, ultimus biangulatus. Long. 23, maj. lat. 15 mill.

An interesting little species, delicately painted, and characterised by rows of neat gem-like granules. The double angle at the top of the body whorl is peculiar, but this may possibly prove to be an accident, and not a specific character.

HAB. unknown. Coll. Melvill.

456. REFLEXUS, *Sowerby* (f. 661).—C. testa pyriformi, antice seriatim granulata, postice lævi, obtuse angulata, ad angulum tuberculis minutissimis coronata; albida, roseo late bifasciata, fasciis fusco nebulatis; spira subobtusè conica, breviuscula; anfractus concavi, spiraliter crebre sulcati; apice acuminato. Long. 25, lat. 15 mill.

Shell pear-shaped, anterior portion granulated, otherwise smooth, very minutely coronated at the angle, whitish, with two broad bands of rose colour clouded with brown; spire rather obtusely conical, rather short, whorls slightly concave, closely spirally grooved.

Specimen unique in the Melvill collection.

457. MULTILINEATUS, *Sowerby* (f. 662).—C. testa turbinata, flavescenti-fusca, lineis fuscis punctatis multi-cingulata, zona lutescente subcentrali balteata, antice paulo attenuata, valide costata, postice lævi, subacute angulata, ad angulum tuberculis parvisculis coronata; spira concavo-acuminata; anfractus 2, planato concavi, tuberculis parvis marginati, apertura albida. Long. 40, lat. 20 mill.

A turbinated species of rather solid structure, yellowish-brown colour, encircled with numerous fine brown dotted lines, and a sub-central belt of pale yellow; spire rather concavely acuminated, crowned with smallish tubercles, which are made conspicuous by intermediate brown blotches.

HAB. unknown. Specimen unique in Mr. Melvill's collection.

458. THOMASI, *Sowerby* (f. 663).—C. testa elongata, solida, albida vel pallide carnea, late pallide aurantio bifasciata, antice leviter costata, deinde læviuscula, minute cancellata; spira obtusa, vix elevata, sutura impressa; anfractus planiusculi, spiraliter minutissime striati, ultimus supra angulatus, infra angulum aliquanto convexus, deinde prope rectus; apertura modica, supra et infra subæqualiter lata, fauce pallide carnea. Long. 75, lat. 35 mill.

Compared with *C. terebellum*, to which this species is allied, it is a smooth shell, with a shorter spire, and a more decided angle. The species has been confounded with Lamarek's *C. pastinaica*; that of Reeve presenting a somewhat similar appearance is only a worn specimen of *C. virgo*.

The type is in the collection of M. Thomas at Brest. Other specimens I have seen are smaller, and have rather more of a bluish or faint lilac tinge of colour.

HAB. Red Sea.

459. *PREVOSTI*, *Sowerby* (f. 664).—C. testa elongato-cylindracea, albida, aurantio obscure fasciata, lineis numerosis minutis aurantiacis irregulariter undulatis et angulatis scripta; spira elata, gradata; anfractus concaviusculi, striis duobus spiraliter sculpti, ultimus supra obtuse angulatus, infra angulum convexiusculus, lævis, basi parum attenuatus, sulcatus; apertura mediocriter lata, basin versus aliquanto latior, fauce lutea. Long. 40, lat. 10 mill.

In describing this species in the Proceedings of the Zoological Society I stated that one specimen was in the collection of Dr. Prevost, and another in that of M. Thomas. This was a mistake, both specimens belonging to the latter collection. They are, I believe, the only specimens known of the species. It is a shell of very distinct and peculiar character.

HAB. unknown.

460. *ARTICULATUS*, *Sowerby* (f. 667).—C. testa subpyriformi, polita, castanea, lineis nigrescentibus tenuissimis spiralibus albo minutissime punctatis quasi articulatis, ad angulum spiralem et infra medium fasciis duabus albis concinne fusco maculatis ornata; spira acute conica; apice roseo; anfractus concavo-declives, ultimus supra subacute angulatus, basi attenuatus, distanter sulcatus; apertura fusco-purpurea. Long. 18, maj. lat. 10 mill.

The specimen figured is rather more contracted in the middle than others I have seen. The finely articulated lines are sometimes almost hidden by the dark chestnut colour of the surface.

HAB. Mauritius.

461. *TEGULATUS*, *Sowerby* (f. 665).—C. testa elongato-turbinata, distanter et æqualiter sulcata, inter sulcos planilirata, super sulcos maculis nigro-fuscis linearibus longitudinaliter flammulata, sulcis concentricè sculptis; spira concavo-acuminata, angulo acuto; anfractus spiraliter striati, et concentricè cancellati. Long. 22, maj. lat. 10 mill.

The dark-brown spots, arranged in longitudinal flames, and thickened in two spiral bands, give a tessellated appearance to this pretty little sulcated shell.

HAB. China Sea.

462. *SEMISULCATUS*, *Sowerby* (f. 666).—Testa angulata, utrinque acuminata, fumeo-fuscata, lævigata, antice distanter spiraliter sulcata; spira concavo-acuminata; anfractus plano-

conconi, versus apicem moniliferi, deinde carina acuta marginati; ultimus supra acute angulatus, infra angulum aliquanto convexus, basin versus acuminatim coarctatus. Long. 22, lat. 12 mill.

A little brown sharply-angular shell, rather distantly grooved from the middle to the base, with the whorls beaded near the apex.

463. PROPINQUUS, *Smith* (f. 668).—Testa obesa, breviturbinata, supra medium bullata, antice angustata, spiralliter tenuiter striata, versus terminum sulcata, pallidissime fusco-subcærulea fulvo variegata et maculis niveis floccata, fulvo maculata, linearum fuscarum baltea maculis nivosis interrupta prope medium, et altera infra, prope terminum, fasciata; spira brevicula, obtuse angulata, ad angulum nodulis parvis numerosis subrotundis interpunctatis coronata; apice acuto rubro; apertura modica, supra et infra fere æqualiter lata, fauce violacea.

Allied to *C. ceylanensis* and *C. nux*, but generally of larger size, and of a different style of painting, and it is further distinguished by the fine sulci marking rather more than half the shell. The marking is principally characterised by neat brown linear bands and snowy flakes.

My father inadvertently named this species *C. tenuisulcatus* in 1873, after having given the same name to another species in 1870.

464. GEMMULATUS, *Sowerby* (f. 669).—Testa parva, albida vel pallidissime flavidula, utrinque subæqualiter acuminata, costellis rotundis subrugosis lirata, interstitiis profundis, striis tenuibus longitudinaliter sculpta; spira elata, valde acuminata; anfractus 10, papillis rotundis regularibus gemmuliformibus coronati; apertura angusta, labrum superne profunde sinuatum.

A remarkable little species allied to *C. acutangulus*, with a very produced spire, the whorls of which are beautifully beaded with gem-like papillæ.

HAB. China Sea.

465. SUBMARGINATUS, *Sowerby* (f. 670).—Testa parva, angusta, albida, nitida, antice attenuata, sulcis acutis numerosis cincta; lateribus vix convexis; spira elevata, plano-conica, subgradata; anfractus 8, declives, ad angulum lira unica marginati; apertura mediocriter lata, labrum superne

vix sinuatum, medium parum arcuatum, columella valde contorta.

A narrow white species, with the posterior closely grooved, and a distinct keel at the angle of the whorls.

466. TENUISULCATUS, *Sowerby* (f. 671).—Testa parva, turbinata, postice acute angulata, antice attenuata, tenuiter distanter sulcata; albida, griseo fasciata, maculis castaneis seu fulvis bifasciata; spira acuminata, vix gradata, flammis castaneis radiata; anfractus 8, concavo-declives.

A species of simple form, whitish, rather sparingly blotched with chestnut in bands, and characterised by rather distant narrow spiral sulci from the middle to the base of the shell.

467. RARIMACULATUS, *Sowerby* (f. 672).—C. testa subelongata, acute angulata, albida, hic illic castaneo maculata, lævigata, antice attenuata, sulcata; spira acuminata, gradata, obscure cancellata, flammulis castaneis picta.

A sharply-angled whitish smooth shell, with very few spots of chestnut, and flames of a darker chestnut on the spire.

HAB. China Sea.

468. GRADATULUS, *Weinkauff* (f. 673).—C. testa elongata, tenui, utrinque eleganter pyramidata, rosea, flammulis rubescentibus infra medium interruptis ornata, antice attenuata, striata; spira producta, gradata, apice prominente, mamillato; anfractus concavi, carina acuta marginati, obscurissime striati, ultimus acute angulatus; apertura modica, fauce rosea, labrum superne profunde sinuatum. Long. 47, lat. 20 m.

A delicately coloured species, with a remarkably turreted and sharply-angled spire.

HAB. Agulhas Bank, South Africa.

469. CANDIDUS, *Kiener* (f. 674).—C. testa elongato-turbinata, subfusiformi, solidiuscula, lævi, antice sulcata, alba, zonis flavidis et maculis fuscis lineatim dispositis cincta, flammis subaurantiis longitudinalibus picta; spira elevata, gradata, flammis castaneis brevibus ornata; anfractus 10, leviter concavi, carina subacuta marginati, ultimus subacute angulatus, infra angulum levissime convexus; apertura angusta, fauce pallide citrina, labrum postice profunde sinuatum. Long. 42, maj. lat. 19 mill.

This excellent species has for many years been unrecognised by conchologists. Specimens having been found on

the coast of Florida, it was named by Gabb in 1868, *C. floridanus*, and two years later by my father, *C. floridensis*. Most of the specimens I have seen are smaller, narrower, and of lighter texture than the one figured.

470. FERGUSONI, *Sowerby* (f. 675).—*C. testa* maxima, ponderosa, alba, spiraliter leviter substriata, epidermide sordide fusca crassa rugata induta; spira subplanulata, latissima, vix elevata, apice paulo exserto; anfractus ad spiram depressi, ad suturam irregulariter undati, inter suturam et angulum obscure unicostati, ultimus subobtusely angulatus, infra angulum leviter convexus; apertura modica, fauce alba, labrum vix sinuatum.

A large white species, quite distinct from all its congeners. Externally it is dull white, slightly roughened by spiral striæ, and longitudinal lines of growth; the interior is shining white. Several specimens have been collected at Panama by Mr. D. W. Ferguson.

471. MALTZANIANUS, *Weinkauff* (f. 676-7).—*C. testa* turbinata, solida, transversim lirata, liris simplicis vel granulosis, distantibus, pallide lutea, interstitiis lilarum profundioribus, bifasciata, basis profunde violacea; spira obtuso-convexa, immaculata, anfractibus 9, planis vel subconvexis, leviter striatis, apex tumidus $2\frac{1}{2}$ anfr.; apertura latiuscula, intus violacea vel purpureo-nigricante, labrum acutum, intus luteo marginatum, superne vix sinuatum. (H. C. Weinkauff.)

Allied to *C. lividus*, but of more obtuse form, transversely ribbed, ribs mostly granulated, especially those towards the base.
HAB. Tahiti.

472. JICKELII, *Weinkauff* (f. 678-9).—*C. testa* oblongo-turbinata, læviuscula, antice sulcata, albida, maculis nigris elongatis et quadratis seriatim dispositis ornata; spira subplana, apice elevato; anfractus 9, planiusculi, submarginati, spiraliter striati, maculati, ultimus obtuse angulatus, infra angulum leviter convexus; apertura latiuscula, basim versus paulo latior, fauce cærulea, labrum maculis nigris marginatum, superne leviter sinuatum. Long. 51, maj. lat. 25 mill.

Very much resembling *C. proteus* of the West Indies, but having been found by Mr. Jickeli at Massaua in the Red Sea it is probably distinct. Weinkauff describes the species as having fulvous spots, probably from a dead specimen, his figure, which I have copied, representing the spots black or nearly so.

473. SUTOREANUS, *Weinkauff* (f. 680-1).—C. testa parva, elongata, lævigata, antice attenuata, profunde 6-sulcata, lutea, zona pallida fasciata; spira elevata, acuta, ad apicem carnea, sutura impressa; anfractus 9, spiraliter striati, leviter coronati, ultimus subobtusè angulatus, ad angulum maculis parvis fuscis notatus, infra angulum leviter convexus; apertura latiuscula, fauce pallide rosacea, columella contorta, labrum superne valde sinuatum. Long. 18, lat. 19 mill.

HAB. Mauritius.

474. PÖHLIUS, *Sowerby* (f. 682-3).—C. testa elongato-subcylindrica, obscurissime striata, antice paulo attenuata, sulcis obliquis circiter 7 confertis et 5 magis distantibus insculpta, alba, zona flavida pallidissima inconspicua cincta; spira parum elevata, subgradata, versus apicem lævissime coronata, flavida; anfractus 9, subplanato declives, spiraliter sulcati, sutura impressa, anfr. ultimus subobtusè angulatus, supra angulum lævissime concavus, infra angulum leviter convexus; apertura latiuscula, basim versus paulo latior, columella vix contorta, labrum acutum, superne valde sinuatum. Long. 50, maj. lat. 20 mill.

An elongated nearly cylindrical shell, white, with the faintest possible tinge of yellow in a central zone and on the apex; compared with an albino variety of *C. ochroleucus*, it is of more cylindrical form, and has not the columellar twist characteristic of that species.

HAB. New Ireland. (Capt. Pöhl.)

475. POLITUS, *Weinkauff* (f. 684).—C. testa elongato-subcylindrica, glabra, polita, antice distanter late sulcata, flavida, lineis anguste punctulatis, numerosis, flavido-alboque articulatis et fasciis tribus, albo-fuscoque articulatis cingulata; spira breviuscula, immaculata, sutura impressa, apice acuto; anfractus 10, convexi, læves, ultimus obtusè angulatus; apertura lata, fauce plumbea, columella contorta, labrum flavido marginatum, superne vix sinuatum. Long. 39, lat. 20 mill.

This appears to be a very good species allied to *C. cinereus*; it is unknown to me, excepting from Weinkauff's figure, which I have copied. The specimen in A. B. Meyer's collection was purchased of Bolten with the manuscript name adopted by Weinkauff.

HAB. unknown.

476. CROCEUS, *Smith* (f. 685).—C. testa angusta, elongato-fusififormis, crocea; spiræ anfractus 10, planiusculi, liris spirali-bus cincti, in anfr. inferioribus 3-4, superioribus 2 (ea ad suturam maxima, in anfr. superioribus nodulosa); spira recte conica; anfr. ultimus marginibus fere planis, costis spirali-bus 28-30, fortibus, subacutis, sensim basim versus tenuioribus, munitus, et lirulis longitudinalibus numerosissimis interstitiis concinne clathratus; apertura linearis, angustissima. Long. 27 mill., diam. max. 9. (E. A. Smith.)

A remarkably narrow, strongly ribbed, deep yellow species. The interstices between the ribs are crossed by fine ridges. The species is somewhat allied to *C. vimineus*.

HAB. unknown.

477. LISCHKEANUS, *Weinkauff* (f. 687-8).—C. testa turbinata, crassa, postice turgida, antice coarctata, sulphurea, angulo basique nivea; spira brevicula, lata; anfractus 12, lente accrescentes, non striati, sutura undulata, ultimus sub-obtuse angulatus, supra angulum concavus, infra angulum convexus, deinde leviter constrictus; apertura angusta, fauce lactea, labrum acutum, superne valde sinuatum. Long. 52, lat. 32 mill.

HAB. Japan. Specimen figured from Mr. Löbbecke's collection.

478. ANDAMANENSIS, *Smith* (f. 689).—C. testa sub-cylindrica, antice subdistanter sulcata, carnea, nigro-fusca irregulariter sparsim punctata et lineata; spira parum elevata, concava, subgradata, fusco radiata; anfractus 10, planato declives, striis 2-3 spiraliter sculpti, ultimus rotunde angulatus; apertura superne angusta, basim versus latiuscula, fauce albida, columella leviter contorta, labrum acutum, superne vix sinuatum. Long. 28, lat. 14 mill.

The species was originally described from a much smaller specimen dredged at Port Blair, Andaman Islands, by Colonel Wilmer, and presented by him to the British Museum. It has a more elevated spire, and smaller spots. The specimen figured is in the collection of Dr. Hungerford.

479. COMMODUS, *A. Adams* (f. 690).—C. testa turbinata utrinque acuminata, acute angulata, læviuscula, antice sulcata, flavidula; spira elevata, acutissima; anfractus 10, læviusculi, sutura impressa, anguste canaliculata; apertura angusta,

fauce alba, labrum acutum, superne valde sinuatum, columella vix contorta. Long. 28, lat. 14 mill.

A plain sharply-angled species, with a very acutely elevated spire. Specimen in Von Maltzan's collection; locality unknown.

480. CUNEIFORMIS, *Smith* (f. 691).—*C.* testa turbinata, subacute angulata, solida, albida, transversim minutissime striata, et sulcis distantibus (basin versus confertioribus) cincta; spira mediocriter elevata, regulariter conica, ad apicem fuscescens, sutura impressa; anfractus 9, planato-declives, spiraliter striati; apertura angusta, fauce violacea, columella basi subplicata, labrum intus margine albidum, superne vix sinuatum. Long. 25, lat. 14 mill.

A simple whitish angular shell with a violet interior. It is more regularly conical than *C. trochulus*, and distinguished by about two-thirds of the shell being spirally grooved. Two specimens are in the British Museum.

HAB. unknown.

481. SMITHI, *Angas* (f. 692).—*C.* testa parva, late conoidea, antice sulcata, postice turgidula, straminea, fusco obscure nebulata, maculis castaneis distantibus trifasciatim dispositis, et tæniis angustis numerosis pallidis castaneo multi-maculatis regulariter picta; spira parum elevata, gradata, ad apicem prominula, apice papillari; anfractus concavi, obtuse carinati, sutura impressa, ultimus subacute angulatus, supra angulum concavus, infra levissime convexus; apertura latiuscula, columella basi contorta, labrum superne vix sinuatum.

A very prettily painted little species from Cape Solander, Botany Bay, Australia.

482. METCALFEI, *Angas* (f. 693).—*C.* testa subelongato turbinata, postice angulata, antice attenuata, carnea, maculis parvis fulvis quadratis et elongatis (in zona media grandioribus, cincta, ubique seriatim minute puncturata, antice costata; spira paulo exserta, ad apicem elevata; anfractus 7, leviter concavi, spiraliter striati; ultimus subacute angulatus; apertura latiuscula, columella basi plicata, labrum superne vix sinuatum.

A small neatly-marked shell, belonging to the same group as the foregoing, and also an Australian species, dredged by Mr. Brazier at Port Jackson.

483. SYDNEYENSIS, *Sowerby* (f. 694).—C. testa turbinata, tenuiuscula laevigata, postice acute angulata, antice attenuata, profunde sulcata, albida, maculis pallide aurantio-fuscis quadratis oblongis et rotundatis seriatim dispositis in zona centrali longitudinaliter elongatis et hic illic oblique decussatis picta; spira parum elevata, leviter concava, aurantio-fusco radiata, apice papillari; anfractus planato declives, spiraliter sulcati; apertura angusta, fauce pallide fusca, columella basi contorta, labrum acutum, superne vix sinuatum. Long. 24, lat. 12 mill.

A rather delicately coloured species, the light orange-brown markings forming crosses in the central zone, and arranged above and below in transverse rows.

HAB. Port Jackson (Brazier).

484. VAYSSETIANUS, *Crosse* (f. 695).—C. testa elongato-turbinata tenuiuscula, liris obsolete pertusis numerosis transversim cincta, pallide castanea, albo late maculata; spira parum elevata, apice leviter obtuso; sutura impressa; anfractus 8, vix gradati, serie tuberculorum coronati, ultimus obtuse angulatus, ad angulum tuberculis circ. 15 minutis coronatus; apertura modica, fauce livide castanea, columella basi contorta, labrum acutum, superne vix sinuatum. Long. 14, diam. 7 mill.

HAB. New Caledonia.

485. JUCUNDUS, *Sowerby* (f. 696-7).—C. testa subpyriformi, crassa, nitida, liris transversis subdistantibus vix conspicuis infra medium sculpta, pallide rosacea, maculis grandibus fuscis irregularibus supra medium ornata, zona lata parum interrupta ejusdem coloris infra medium cincta; spira breviter conica, aurantio strigata, ad apicem rosea, apice obtuso; anfractus 8, serie tuberculorum coronati, ultimus superne subacute angulatus, ad angulum obsolete coronatus, supra angulum concavus, infra leviter convexus, basin versus attenuatus; apertura angusta, rosacea, columella basi plicata, labrum superne vix sinuatum. Long. 35, maj. lat. 20 mill.

A very attractive species, of which the only specimen at present known is in the collection of Mr. James J. MacAndrew. Its colour is pink, ornamented with bold dashes of brown, and a broad belt of the same colour below the middle of the body of the whorl.

HAB. unknown.

486. LAMBERTI, *Souverbie* (f. 698).—C. testa elongata, cylindraco-conica, longitudinaliter tenuissime striata, antice oblique subimpresso-striata, aurantiaca, maculis albis inæqualibus plerumque triangularibus sæpe grandibus et altioribus quam latioribus in series tres fasciatim dispositis ornata; spira depresso-conica, canaliculata, sutura impressa; anfractus 12, concavo declives, spiraliter unistriati, priores (5-6) tuberculis minutis coronati, ultimus superne rotunde angulatus, basin versus mediocriter attenuatus; apertura latiuscula, columella basi contorta, labrum acutiusculum superne vix sinuatum. Long. 107, lat. 53 mill.

This magnificent shell is nearly allied to *C. crocatus*, and judging only from the description and figures in the 'Journal de Conchologie,' I am unable to say with certainty that it is not a very well grown specimen of that species. The only specimen known was discovered by Mr. R. P. Lambert at Ouvea, Loyalty Islands, Caledonian Archipelago.

487. INCONSTANS, *Smith* (f. 700).—C. testa turbinata, superne subacute angulata, transversim exiliter lirata, livido-fuscescenti-rosea, medio fascia alba maculis fuscis interrupta et lineis albis fusco notatis ad basim cincta; spira turrata, breviuscula, alba, apice rosaceo et maculis numerosis fuscis radiantibus picta; anfr. $8\frac{1}{2}$ primi $\frac{1}{2}$ convexi, cæteri leviter exserti, supra levissime excavati, spiraliter exiliter striati, sutura inæquali divisi; apertura angusta; labrum superne vix incisum. Long. 22, lat. $12\frac{1}{2}$ mill.

488. LOEBBECKEANUS, *Weinkauff* (f. 701).—C. testa oblongo turbinata, glabra, splendida, ad basim anguste-lirata, liris subgranulosis; luteo-alba, zonis duabus ferruginosis et lineis fuscis—in zonis albis articulatis, in zonis ferruginosis integris—maculis longitudinalibus sparsis, fuscis ornata. Angulus distinctus. Spira late conica, fusco alboque variegata, anfractibus 11 planis, marginatis, striatis; apex punctiformis, lacteus. Apertura latiuscula, intus lactea; labrum acutum, intus punctis fuscis sparsis submarginatum, superne et inferne sinuatum. Long. 52, lat. 28 mill. (Weinkauff.)

This species seems to be allied to *C. splendidulus*.

HAB. unknown.

489. DUSAVELLI, *H. Adams* (f. 712).—C. testa convexo-conica, elongata, polita, antice distanter puncto-lirata, roseo-

lutea, fasciis tribus ex striis longitudinalibus et maculis rufis formatis ornata, seriebus numerosis macularum candidarum purpureo-lividarum alternatim cincta; spira acuminata, conica, apice mucronato, sutura distincta, sparsim subcanaliculata, longitudinaliter rufo strigata; anfractus $10\frac{1}{2}$ superne angulati, ad apicem nodulosi, ultimus obtuse angulatus, leviter ventricosus; apertura modica, basim versus latior, labrum acutum, superne sinuatum. Long. 50, lat. 20 mill.

An exceedingly beautiful species, of which the only specimen at present known is in the collection of Mr. Melvill. It was found in the stomach of a fish at Mauritius, and described by Mr. H. Adams in 1872 under the name of *Leptocomus Dusavelli*.

490. FULVO-CINCTUS, *Crosse* (f. 713).—C. testa cylindraceo-conica, crassa, liris transversis subdistantibus parum conspicuis infra medium sculpta, striis incrementi longitudinaliter impressa, albida, zona lata pallide fulva interrupta parum conspicua, paulo supra medium anfr. ultimi cincta; spira breviter conica; sutura impressa, vix irregularis; anfr. 10, planiusculi, lente accrescentes, liris tenuibus spiraliter impressi, ultimus obtuse angulatus, basi attenuatus; apertura elongata angusta, basi paulo latior, fauce candida, columella basi incrassata, labrum sub-acutum basin versus obsolete plicato-crenatum ad suturam sinuatum. Long. 75, lat. 14 mill.

The figure is copied from the 'Journal de Conchologie,' in which the spire is a little on one side, which may be a distortion or a fault in the drawing. It is a plain-looking shell, but apparently quite distinct. The specimen is from the West African coast, and is now in the collection of Mr. B. Thomas.

491. MAZEI, *Deshayes* (f. 714).—C. testa conica, elongato-angusta, gracili, posterius paulo turgidula, antice attenuata, striis punctulatis distantibus obliquis ornata, alba subtranslucida, nitente, maculis castaneis regularibus transversim serialiter dispositis; spira elongata, regulariter conico-concaviuscula, apice acuminato; anfractus 12, plano-concaviusculi, spiraliter striato-subgranulati, striis minutissimis clathrati; ultimus subrotunde angulatus; apertura longissima, angusta, labrum acutum, pertenu paulo arcuatum, superne late sinuatum. Long. 58, lat. 16 mill.

A very gracefully formed shell, slender and tapering, neatly painted with rows of chestnut spots. The only specimen known is in the collection of the Jardin des Plantes in Paris.

HAB. Coast of Martinique, West Indies.

492. BLANFORDIANUS, *Crosse* (f. 716).—C. testa ovato-pyriformis, subinflata, parum crassa, alba, nigro-fusco subregulariter seriatim maculata; spira brevissima, ad apicem leviter prominente; sutura impressa; anfr. 10, spiraliter sulcati, flammis nigro-fuscis radiati, ultimus superne obtusissime angulatus, infra angulum convexus, basin versus parum attenuatus, sulcis angustis distantibus spiraliter impressus; apertura latiuscula, basin versus latior, fauce alba, labrum acutiusculum, ad limbum fusco notatum. Long. 36, lat. 19 mill.

493. JULII, *Liénard* (f. 717).—C. testa ovato-oblonga, solida, leviuscula, transversim inconspicue striata, albida, roseo tincta et nebulata, longitudinaliter pallide rufo-fusco, strigata, strigis angustis, in zonis duobus latioribus et magis vividis; spira brevissima; anfr. 8, planiusculi, spiraliter tenuissime striati, ultimus superne obtuse angulatus, infra angulum leviter ventricosus, basin versus leviter attenuatus; apertura superne angusta, inferne leviter dilatata, fauce rosacea, columella basi plicata, labrum acutum, superne vix sinuatum. Long. 35, lat. 19 mill.

HAB. Mauritius.

494. CONSANGUINEUS, *Smith* (f. 718).—C. testa turbinata, solida, alba, dilute fusco zonata, epidermide crassa dense lamellosa induta; spira breviter conica, ad apicem pallide rosea; anfractus circiter 10, declives, sutura irregulari discreti; anfr. ultimus superne rotunde angulatus, deinde leviter convexus, in medio levissime constrictus, transversim undulatum striatus, basin versus sulcis numerosis obliquis sculpta; apertura modica, alba, labrum tenue, superne et inferne arcuatum, in medio leviter constrictum, sinus subsuturalis latus profundus. Long. 88, lat. 49 mill.

HAB. ? Specimen in the British Museum.

495. TRAVERSIANUS, *Smith* (f. 719).—C. testa elongato-cylindracea, sulcis transversis aliquanto distantibus postice obsolete antice profundioribus et confertioribus inculpta,

dilute rosacea, fasciis duabus obscuris aurantio-rufis cincta, et inter sulcos lineis rufoque articulatis ornata; spira concavo-conica, breviuscula; anfractus 10, leviter concavi, spiraliter lirati, sutura impressa; anfr. ultimus superne angulatus, deinde fere rectus; apertura angusta ad basim leviter dilatata; fauce rosacea, columella basi contorto-plicata, labrum acutiusculum, superne vix sinuatum. Long. 43, lat. 17 mill.

This species is well distinguished by its narrow form in conjunction with its style of coloration. The two orange-red bands are interrupted here and there, and the red dots which together with the white ones form the articulated transverse lines are very small. The only specimen known is in the collection of Mr. Melvill. Locality unknown.

496. *ALTISPIRATUS*, *Sowerby* (f. 720).—C. testa elongata, utrinque acuminata, tenuiuscula, lactea, antice valide sulcata; spira perelevata, leviter convexa, vix angulata, ad apicem mucronata, rosea; anfractus 10, convexi, obsolete coronati; apertura angusta, columella basi contorta, labrum acutum, superne late sinuatum.

A white shell of very distinct form, from Agulhas Bank, S. Africa.

497. *LATERCULATUS*, *Sowerby* (f. 721).—C. testa elongato-subcylindracea, dilute flavida, fusco maculata, liris complanatis duplicatis maculis quadratis ornatis cincta, et maculis magnis latis trifasciata, sulcis intermediis albis; spira acuminata, fusco-radiata; anfractus concavi, spiraliter striati, minute cancellati, lira acuta regulariter minute punctata marginati, ultimus superne subacute angulatus, deinde convexiusculus, basin versus attenuatus; apertura angustissima, columella basi plicata, labrum subacutum fusco maculatum, superne parum sinuatum.

Beautifully tessellated with square regular brown spots, and sculptured with white grooves between duplicate ridges. Allied to *C. australis*, but quite distinct. Several specimens were dredged by Capt. Denicke in the China Sea. The type is now in the British Museum.

498. *WILMERI*, *Sowerby* (f. 722).—C. testa fusiformis, utrinque acuminata, dilute flavida, antice attenuata, leviter contorta, undique costata, costis numerosis elevatis rotundatis, interstitiis transversim striatis; spira turrata, elata; anfr. 11,

planato-declives, spiraliter trisulcati, juxta suturam unilirati, ad angulum acuticarinati; apertura angustissima, columella basi plicata, labrum crenulatum, superne leviter sinuatum. Long. 21, lat. 8 mill.

HAB. Port Blair, Andaman Islands (Col. Wilmer).

499. *PLANILIRATUS*, *Sowerby* (f. 723).—C. testa elongato-turbinata, sulcis angustis subdistantibus haud profundis, basin versus profundioribus transversim cincta, dilute flavida, fusco maculata, maculis oblongo-quadratis et macularum undatarum fasciis tribus cincta; spira concavo conica, prope apicem acuminata, flammis fuscis radiata; anfractus 10, spiraliter striati, minutissime cancellati; ultimus acute angulatus, supra angulum concavus, infra angulum leviter convexus; apertura modica, supra et infra æqualiter lata, columella basi contorta et plicata, labrum subacutum, superne late sinuatum, inferne crenulatum.

A very characteristic species, of which several specimens were dredged by Captain Denicke in the China Sea.

500. *CUNEATUS*, *Sowerby* (f. 724).—C. testa solida, late turbinata, angulata, prope terminum anticum angustata, sulcata, lævigata, albida, fulvo pallidissime bifasciata, infra medium fascia alba maculis quadratis perpaucis cincta; spira subelevata, acuminata, angulata; anfractus concavi, spiraliter tenuissime striati, maculis castaneis raris ornati; apertura modica, fauce pallidissime violacea, columella vix plicata, labrum acutum, superne leviter sinuatum.

This broadly-angular shell, although of simple character, does not seem to suggest comparison with any other known species. Locality unknown.

501. *PSEUDOMARMOREUS*, *Crosse* (f. 725).—C. testa turbinata, crassa, transversim lirata, violaceo nigricans, maculis cordiformibus inæqualibus numerosis albis aut albido-roseis maculis conii marmorei similibus conspersa; spira conica, elatiuscula, sutura subirregulariter impressa; anfractus 8, planiusculi, primi sublævigati, albidi, sequentes spiraliter lirati, ultimus subrotunde angulatus, convexiusculus; apertura mediocriter lata, fauce rosacea; columella breviuscula, contorta, turgidula, roseo-albida; labrum leviter arcuatum pallide fulvido lutescens, violaceo-nigro guttatum. Long. 50, lat. 29 mill. Specimen in the Paris Museum.

HAB. ?

502. BRAZIERI, *Sowerby* (f. 726).—C. testa elongato-subcylindrica, undique transversim subtilissime striata, pallidissime rosacea, fulvo late trifasciata, maculis minutis hic illic majoribus nigris sparsissime conspersa; spira conica, mediocriter elevata, gradata, apice acuto; anfractus 10, concavusculi, carina obtusa seriatim nigro maculata marginati; ultimus obtuse angulatus, ad angulum maculis nigris grandiusculis subdistantibus ornatus, lateribus convexiusculus; apertura mediocriter lata, infra medium latior, columella basi valide contorta, turgido subumbilicata, labrum acutum, superne parum sinuatum, inferne arcuatum. Long. 75, lat. 32 mill.

A handsome species, of which two specimens were received by Mr. John Brazier from the Solomon Islands. The type is now in Mr. Melvill's collection; the other specimen, which I have not seen, remains at Sydney in Mr. Brazier's collection. The body of the shell is delicately coloured, and very sparingly spotted, but the spire is very boldly marked and handsome.

503. SUFFUSUS, *Sowerby* (f. 727).—C. testa turbinata, solida, pallide carnea, roseo pallide suffusa et obscure fasciata, liris numerosis subobsoletis transversim cincta; spira lata, brevi; anfractus 9, planiusculi, obtuse coronati; ultimus obtuse angulatus, ad angulum tuberculis obtusis coronatus; apertura modica, versus basin paulo latior, fauce pallide rosacea, columella basi leviter contorta, vix plicata, labrum superne mediocriter sinuatum. Long. 55, lat. 30 mill.

Crosse described in the 'Journal de Conchologie,' 1872, p. 155, var. β *Noumeensis*, of a uniform pale flesh tint without bands; the specimen is covered with a light fulvous epidermis.

HAB. New Caledonia.

504. CORRUGATUS, *Sowerby* (f. 728).—C. testa parva, acuminata, liris duplicatis subrugosis granulatis et interstitiis minutissime sculptis cincta, albida, pallide griseo fasciata, fusco strigata et punctata; spira elata, acuminata, fusco radiata; anfractus cancellati, acute angulati.

A more slender and much more finely sculptured shell than *C. verrucosus*, with the edges of the whorls neatly spotted with brown.

HAB. unknown.

505. *EVELINÆ*, *Sowerby* (f. 729).—C. testa elongato-turbinata, fulva, fusco-strigata, zona pallida infra medium cincta; spira elatiuscula, regulariter conica, apice prominente, papillari; anfractus planato-declives, serie tuberculorum marginati, spiraliter 4-striati, ultimus superne subacutely angulatus, infra angulum levissime convexus, basin versus attenuatus sulcatus; apertura angusta basin versus paulo latior, fauce albida. Long. 28, lat. 14 mill.

Specimen in the collection of Mr. Melvill.

HAB. unknown.

506. *DIANTHUS*, *Sowerby* (f. 730).—C. testa elongato-turbinata, pallidissime rosacea, maculis grandibus irregularibus aurantiis sparsim picta, liris transversis subdistantibus leviter corrugatis cincta, striis longitudinalibus tenuissimis undulatis sculpta; spira parum elevata, vix concava; anfractus 10, planato declives, prope suturam levissime undulati, ultimus obtuse angulatus, ad angulum obscurissime coronatus, supra angulum leviter concavus, infra convexiusculus, basin versus parum attenuatus; apertura modica, infra medium paulo latior, fauce rosacea, columella basi contorta, turgidula, subumbilicata, labrum acutum superne vix sinuatum. Long. 28, lat. 13 mill.

A very pretty delicate pink species with a few large irregular orange blotches. The fine undulating striæ in crossing the transverse ribs form minute scales. The only specimen known is in Mr. Melvill's collection.

HAB. unknown.

507. *SEMIVELATUS*, *Sowerby* (f. 731).—C. testa pyriformi, cæruleo-purpurea, postice albida; spira breviuscula, convexa; anfractus leviter convexi, læviusculi, ultimus vix angulatus, rotundatus, ventricosus, basi multo attenuatus; apertura angusta, fauce purpurea, columella basi plicata, contorta, subumbilicata, labrum acutum, superne arcuatum, haud sinuatum. Long. 16, lat. 10 mill.

A remarkable little pyriform species, of very unusual colour. The whole of the spire, and the top of the last whorl is white, and the rest of the shell of a uniform plum-colour. Specimen in Mr. Melvill's collection.

HAB. Red Sea.

508. *PRYTANIS*, *Sowerby* (f. 732).—C. testa subpyriformi, pallide fusca, longitudinaliter fusco strigata, zona pallida

angusta paululum infra medium cincta; spira breviter conica; anfractus serie tuberculorum marginati, ultimus ad angulum tuberculis elevatis acutiusculis albidis coronatus, infra angulum convexus, infra medium constrictus, oblique costatus; apertura modica, supra et infra subæqualiter lata, fauce pallide purpurea, columella basi contorta, labrum acutum, superne vix sinuatum. Long. 35, lat. 20 mill.

HAB. Gallapagos. Type in Mr. Melvill's collection.

509. TAYLORIANUS, *Smith* (f. 733).—C. testa parva, breviter conica, saturate fusca, albo maculata; spira breviuscula, gradata, ad apicem leviter prominente, albo variegata; anfractus 9, superne declives, angulati, ad angulum coronati, striis spiralibus paucis sculpti, ultimus superne coronatus et angulatus, infra angulum levissime convexus, spiraliter punctostriatus, ad angulum maculis magnis remotis niveis et paululum infra medium maculis ejusdem coloris ornatus, et prope basin niveo punctatus; apertura angusta, fauce fusco violacea, albo maculata; labrum superne vix sinuatum. Long. 20, lat. 11 mill.

Specimen from the collection of Mr. T. Lombe Taylor now in the British Museum.

HAB. Australia.

510. RACEMOSUS, *Sowerby* (f. 734).—C. testa cylindraceo-turbinata, subventricosa, solidula, lævi, fusco-aurantiaca, lineis obscuris sparsim albo articulatis transverse cingulata, et cumulis macularum albarum trigonarum in series tres distantes dispositis ornata; spira convexiuscula, apice subobtusato; anfractus planato declives, ultimus obtusissime angulatus. Long. 54, lat. 25 mill.

At first sight this shell bears very much the aspect of *C. crocatus*, but it is of a more obtuse and ventricose form. The specimen is now in Mr. Melvill's collection.

511. ALBOSPIRA, *Smith* (f. 735).—C. testa breviter conica, alba, zonis duabus vel tribus strigarum pallide olivaceo-fuscarum picta; spira concava, breviuscula, ad apicem dilute carnea; anfractus 9–10, declives, plani, vix gradati, liris tenuibus tribus spiralibus incrementique lineis sculpti; ultimus superne subacute angulatus, ad latera leviter convexus, striis transversis supra medium tenuissimis sed inferne profundioribus et subpunctatis insculpti; apertura supra angusta, versus basin latior, dilutissime lilaceo-alba, labrum ad angulum vix emarginatum. Long. 27, lat. 14 mill.

A simple white shell, rather strongly striated towards the base, and faintly coloured with rather distant light-brown longitudinal streaks, arranged in three transverse zones. The type is in the British Museum. Locality unknown.

512. NEPTUNOIDES, *Smith* (f. 736).—C. testa elongata, roseo-albida, lineis fuscis irregulariter reticulata, paululum supra pauloque infra medium fascia lata interrupta indistincta ejusdem coloris cincta; spira elevata, concava, gradata, lineis contortis fuscis radiatim picta; anfr. circ. 10, superne declives, leviter excavati, striis tribus spiraliter sculpti, carina subacuta marginati; ultimus superne rotunde angulatus, infra angulum aliquanto convexus, deinde rectiusculus, transversim tenuiter striatus, infra medium sulcis angustis remotis 10–12 oblique sculptus; apertura mediocriter lata, inferne aliquanto latior, fauce dilute rosacea, columella basi plicata, oblique contorta, inflata, labrum superne leviter arcuatum, vix sinuatum. Long. 45, lat. 20 mill.

This is the same species as that figured Pl. XXV. figs. 613, 614, as varieties of *C. Lienardi*, from which it is probably distinct. The specimen labelled 'Australia' passed from the Taylor collection into that of the British Museum.

513. COXENI, *Brazier* (f. 737).—C. testa lata, angulata, utrinque acuminata, pallidissime flavidula, longitudinaliter fulvo flammulata; spira elatissima, subgradata; anfractus spiraliter trisulcati, carinati, carina obtusa fulvo maculata; anfr. ultimus infra angulum lævigatus, deinde sulcis circ. 20 puncturatis spiraliter sculptus; apertura modica.

A very distinct species, known to me only from the figure in the 'Proceedings of the Zoological Society,' which I have copied.

514. LOMBEI, *Sowerby* (f. 739).—C. testa elongato-turbinata, solidiuscula, rufo-fusca: spira elevata, acuta, anfractus superne declives, læves, angulati, ad angulum maculis albidis numerosis ornati; ultimus superne sub-acute angulatus, ad latera prope rectus, lævigatus, basin versus oblique sulcatus; apertura angusta, fauce purpurea, labrum ad angulum vix emarginatum. Long. 22, lat. 10 mill.

A small reddish-brown cone, with a purple interior, and white spots on the angle and spire giving it a coronated appearance, although the angle is free from nodules. The spe-

cimen now in the British Museum was labelled 'Mauritius' in the collection of the late Thos. Lombe Taylor.

515. BAYLEI, *Jousseauime* (f. 740).—C. testa elongato-turbinata, læviuscula, pallide carnea, maculis fulvis irregularibus 4-seriatim picta; spira breviuscula, concavo-conica; anfractus planato-declives, transversim subtilissime serrato-striati, haud spiraliter striati; ultimus superne angulatus, infra angulum convexiusculus, basin versus attenuatus; apertura angusta, fauce carnea. Long. 32, lat. 17 mill.

HAB. ? Figure copied from the 'Magasin de Zoologie.'

516. EQUES, *Brug.* (f. 741).—C. testa obesa, pyriformis, lævigata, antice oblique sulcata, albida, fulvo tincta fasciata et strigata, fusco irregulariter bifasciatim grandi-maculata et flammulata.

This is a somewhat doubtful species which has been variously quoted as belonging to *catus*, *quinaicus*, &c., but from the figure, which seems a good one, and of which I give a copy, I certainly cannot identify it with either, and think it may very possibly prove a good and distinct species.

517. DILECTUS, *Gould* (f. 742).—C. testa parva gracilis, conica, albida, ferrugineo concinne reticulata, et seriebus binis macularum candidarum et rufarum alternantium cincta; spira elevata, concavo-conica; anfr. octo ad novem, angulatis, coronatis, postice striatis, ultimo inermi, antice sex ad octo sulcato; apertura linearis; columella recta; fauce incarnata. (Gould.)

HAB. Feejee Islands.

518. TRISTIS, *Reeve* (f. 743).—C. testa sub-fusiformi, alba, lævigata, antice sulcata; spira mediocriter elevata, convexiuscula; anfractus subplanato-declives, spiraliter striati, primi nodulis minutissimis marginati, apice mucronato; anfr. ultimus superne obtuse angulatus, ad angulum haud coronatus, ad latera convexiusculus.

This species was accidentally omitted from the old monograph.

519. CLARUS, *Smith* (f. 744).—C. testa abbreviato-turbinata, dilute rosacea, basin versus oblique sulcata; spira breviter conica, apice acuto, lateribus leviter concavis; anfractus 8-9, plani, declives, parum gradati, striis tenuibus circ. 7, spiraliter

sculpti; anfractus ultimus superne ad angulum subacutely carinatus, infra carinam vix convexus, lateribus fere rectilinearibus; apertura angusta, pallide rosacea, labrum vix arcuatum, sinu superiore inconspicuo. Long. 27, lat. 14 mill. (Smith).

HAB. W. Australia.

520. DOLIUM, *Boivin* (f. 745).—C. testa subcylindracea, leviter inflata, tenuiuscula, alba, maculis grandibus aurantiis, aut flavidis, aut fuscis irregulariter picturatis, bifasciatim dispositis ornata; spira complanata, ad apicem paulo elevata; anfractus planato depressi, spiraliter striati; sutura anguste canaliculata; anfr. ultimus superne obtuse angulatus, infra angulum convexus, deinde subventricosus, basin versus leviter constrictus, sulcatus; apertura latiuscula, inferne dilatata; columella plicata, oblique contorta, turgida; labrum superne vix sinuatum.

Allied to *C. spectrum*, of a more inflated form.

521. BARTHELEMYI, *Bernardi* (f. 746).—C. testa oblongo-turbinata, solida, aurantia, zona roseo-alba in medio cingulata, et maculis nigro-fuscis raris subrotundatis in zona ipsa aut in vicino zonæ ornata; spira abbreviato-conica, profunde canaliculata alba, fusco aurantioque variegata et flammulata, sutura marginata, apice obtusiusculo; anfractus 6–10, striati; ultimus obtuse angulatus, infra angulum aliquanto convexus deinde rectiusculus; apertura angusta, basin versus paulo latior, fauce alba; columella basi oblique contorta, valde callosa, aurantia. Long. 70, lat. 37 mill.

Not being acquainted with this handsome shell, my father thought it might be a variety of *C. aurisiacus*; it seems to me, however, quite sufficiently distinct to be regarded as a species.

522. GLOYNEI, *Sowerby* (f. 747).—C. testa abbreviato-turbinata, solida, castanea, fusco late bifasciata; spira abbreviata, conica, fusca; anfractus superne leviter concavi, spiraliter profunde trisulcati; anfr. ultimus ad angulum leviter coronatus, infra angulum levissime convexus, læviusculus, vel minutissime striatus, basin versus valide costatus; apertura angusta, albida; labrum ad angulum leviter emarginatum. Long. 26, diam. 16 millim.

A short brown Cone of no very striking character, excepting perhaps that the grooves of the spire are unusually deep. Although of ordinary appearance, I cannot identify it with

any known species. The shell was given me by Mr. C. P. Gloyne, who had no information as to its habitat.

523. *KOBELTI*, *Löbbecke* (f. 748).—C. testa regulariter conica, angulata, solida, lævigata, striis incrementi distinctis, regularibus, supra arcuatis et ad basin liris confertis spiralibus sculpta, luteo-fusca, zona pallida infra medium cincta; spira conica, gradata, anfractus 10-11, spiraliter lirati, carinati; ultimus subacute angulatus; apertura angusta, fauce alba, abrum acutum superne angulatum. Long. 42, lat. 24 mill.

Specimen in the Löbbecke collection.

HAB. unknown.

524. *FUSCO-MACULATUS*, *Smith* (f. 749).—C. testa elongato-subcylindracea, antice paululum attenuata, dilute carneo-purpurea, maculis fuscis numerosis quadratis seriatim dispositis ornata; spira fusca concavo-acuminata; anfractus 12, spiraliter subtiliter striati, sutura albescente divisi, ultimus superne obtuse angulatus, inferne albo oblique costatus, costis leviter granulatis; apertura pallide purpurea. Long. 37, lat. 16 mill.

HAB. ? Nearly allied to *C. lynceus*.

525. *ROBILLARDI*, *Bernardi* (f. 750).—C. testa elongata, nitida; anfr. 9-10, subgradati et carinati, concentrice sulcati; ultimus carinatus, antice punctis excavatis approximatis, in series plures concentrice regulariterque dispositis notatus; postice lævior, ad suturam sulcatus; apertura recta, marginibus parallelis; spira alba, maculis subquadratis brunneis ornata; anfractus ultimus fulvus, fascia alba, transversa, media, maculis rufis interrupta, cinctus. Long. 27, lat. 14 mill. (*Bernardi*.)

526. *BAYANI*, *Joussecaume* (f. 751).—C. testa elongata, angustiuscula, albida, rufo-fusco irregulariter bifasciatim maculata et longitudinaliter flammulata, postice acute angulata, deinde attenuata, leviter inflexa, antice sulcata; spira concavo-acuminata; apertura angustissima, fauce pallidissime violacea. Long. 55, lat. 23 mill.

This shell, known to me only by the figure in the 'Magasin de Zoologie,' may possibly be a very angular, compressed, and sparsely-coloured form of *C. generalis*. Its habitat is unknown.

527. *FULTONI*, *Sowerby* (f. 758).—C. testa sub-pyriformi, nigro-fusca, maculis grandibus albidis irregulariter picturatis paulum infra medium balteata; spira brevissima, albida, ad apicem paulo exserta; anfractus 10, spiraliter rugoso-sulcati, primi planato declives, sequentes concaviusculi, tuberculis oblongis planulatis fere obsoletis, interstitiis fusco maculatis, marginati; ultimus superne angulatus, ad angulum tuberculis albis planulatis confertiusculis vix elevatis coronatus, infra angulum turgidulus, basin versus attenuatus, leviter constrictus, liris 6-7 leviter granulatis sculptus; apertura modica, fauce dilute purpurea, columella basi oblique contorta, albida, labrum acutum, purpureo-fusco limbatum, supra angulum profunde sinuatum. Long. 23, lat. 14 mill.

A single specimen received with Singapore shells.

528. *AKABENSIS*, *Sowerby* (f. 752-3).—C. testa turbinata, albida, epidermide fusco-flavida induta; spira parum elevata, vix gradata, apice mamillato, sutura anguste canaliculata; anfractus 10, planato-declives, spiraliter 5-6 sulcati, carina obtusa marginati; ultimus superne angulatus, infra angulum aliquanto convexus, subtilissime undato-striatus, sulcis remotiusculis brevibus, basin versus profundioribus et confertioribus cinctus; apertura latiuscula, basin versus paulo latior, fauce albida, columella mediocriter contorta, labrum acutum, superne parum sinuatum. Long. 46, lat. 22 mill.

A single specimen in the British Museum, from Akaba (Red Sea).

529. *MARTENSI*, *Smith* (f. 755).—C. testa turbinata, antice multo attenuata, aurantia; spira parum elevata, gradata; anfractus 10, angulati, spiraliter 3-4 sulcati, ultimus mediocriter angulatus, infra angulum aliquanto convexus; apertura angustissima, fauce carnea, columella contorta, labrum acutum, superne mediocriter sinuatum. Long. 34, lat. $12\frac{1}{2}$ mill.

A single specimen in the British Museum from Providence Reef, Mascarenes, 24 fath.

530. *WEINKAUFFI*, *Löbbecke* (f. 760).—C. testa regulariter conica, ponderosa, læviuscula, lineis incrementi tenuissimis, superne arcuatis, ad basin liris distinctibus distantibus, regulariter dispositis castaneo articulatis sculpta, alba, maculis nigro-castaneis quadrangularibus interdum confluentibus majoribus et minoribus fasciatim et strigatim dispositis ubique ornata; spira elata, castaneo maculata; anfr. 11-12 sub-

gradati, apice regulariter conico, exserto; anfr. ultimus superne obtuse angulatus, supra angulum leviter concavus, basi rugosus, rotundatus; apertura mediocriter lata, fauce alba, columella haud contorta, labrum acutum, superne profunde sinuatum. Long. 80, lat. 42 mill.

531. LONGURIONIS, *Kiener* (f. 759).—C. testa elongatissima, angusta, utrinque attenuata, subulata, transversim sulcata, albo-lutea, maculis rufo-aurantiis quadrangularibus transversim obsolete bifasciata; spira elata, acutissima.

Allied to *C. aculeiformis* but possibly distinct. It appears to be a smooth shell with narrow grooves, not cancellated. The figure is copied from Kiener.

532. ALBUS, *Sowerby* (f. 761).—C. testa elongata, alba, læviuscula, transversim subtilissime striata, antice minute lirata; spira breviter conica, ad apicem paulo elata; sutura impressa; anfractus 10, spiraliter subtilissime striati, primi 5 plano-declives, sequentes 6–8 levissime coronati, deinde concavo-depressi; ultimus superne sub-acute angulatus, infra angulum aliquanto convexus, ad medium rectiusculus vel levissime constrictus, basin versus paulo attenuatus; apertura mediocriter lata, basin versus paulo latior, columella basi plicata, oblique contorta, turgida, labrum acutum, superne sat profunde sinuatum, inferne arcuatum. Long. 49, lat. 26, mill.

A white shell very obscurely coronated in the middle of spire. Locality unknown.

533. CERNICUS, *H. Ad.* (f. 756).—C. testa elongato-turbinata, solidiuscula, antice lirata, attenuata, cinereo-alba, fusco fasciata et nebulata, floccis albis sparsis picta; spira elevata, apice roseo; anfractus 8 leviter convexi, tuberculati, spiraliter subtilissime striati, ultimus ad angulum tuberculis acutiusculis subremotis coronatus, infra angulum convexus, basin versus attenuatus; apertura angusta, fauce violacea, labrum acutum, superne sub-profunde sinuatum. Long. 25, lat. 13 mill.

HAB. Mauritius.

534. EXQUISITUS, *Sowerby* (f. 757).—C. testa parva, elongato-turbinata, liris transversis, postice obsolete antice majis conspicuis exsculpta, alba, flammulis aurantiis oblique angulatis late bifasciatim dispositis pulcherrime picta; spira

regulariter conica, mediocriter elevata, sub-gradata, apice roseo; anfractus 8 primi lævigati, sequentes tuberculis minutissimis marginati, ultimus subacute angulatus ad angulum tuberculis circiter 20 minutis coronatus, infra angulum rectiusculus, basin versus attenuatus; apertura angusta, fauce carnea, columella basi leviter callosa roseo tincta, labrum acutum fere rectum, superne vix sinuatum. Long. 24, lat. 12 mill.

A charming little species, with bold angular orange flames, and a minutely tubercled crown. The specimen fell from the mouth of a *Fusus Dupetitthouarsi* from California, but as there were shells from other localities with it, its habitat cannot with certainty be stated.

SPECIES UNIDENTIFIED.

535. SOPHIE, *Brazier*, Proc. Linn. Soc., N.S.W., 1876, p. 7. Solomon Is.
536. ROSSITERI, *Brazier*, Proc. Zool. Soc., 1870, p. 109.
537. COOKI, *Brazier*, Proc. Zool. Soc., 1870.
538. CARMELI, *T. Woods*, Proc. Roy. Soc., Tasmania, 1876, p. 6.
539. MACLEAYANUS, *T. Woods*, Proc. Roy. Soc., Tasmania.
540. TASMANICUS, " " "
541. PURUS, *Pease*, Proc. Zool. Soc., 1862.

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SECOND
SUPPLEMENT TO MONOGRAPH OF THE GENUS
VOLUTA.

(SEQUEL TO P. 272, VOL. III.)

75. WISEMANI, *Brazier* (f. 139).—V. testa oblongo-ovata, crassiuscula, pallide fulvida, aurantio alboque maculata et nebulata; spira mediocriter elevata, apice obtusulo; anfractus 6, planiusculi, 3 primi tenuissime granulosi, quartus tuberculis minutis subacutis marginatus, ultimus supra medium angulatus, ad angulum tuberculis acutis elevatis albis armatus; apertura latiuscula, fauce carnea, columella leviter arcuata, albida, valide quadriplicata, labrum crassiusculum.

The specimen figured belongs to the collection of M. Dupuis at St. Omer. Mr. Brazier's type in the 'Journal de Conchyliologie' is rather longer and narrower in proportion, and the markings in two bands are of a reddish brown.

HAB. N. E. Australia.

76. MACANDREW, *Sowerby* (f. 140-1).—V. testa sub-cylindrica, solidiuscula, albida, pallidissime fusco vel fulvo tincta, lineis fuscis pulcherrime undulatis longitudinaliter picta; spira conica, breviuscula, sutura encaustica fere clausa, apice acutiusculo; anfractus 6, 3 primi convexi sub-pellucidi, deinde planiusculi; apertura latiuscula, fauce fusca, columella alba, quadriplicata, labrum acutiusculum, leviter arcuatum, in vicinio suturæ profunde emarginatum. Long. 55, lat. 24 mill.

A pretty species allied to *Ellioti*, *Turneri*, and *Jamrachi*, with the markings of *undulata*. The two specimens figured (young and adult) are in the collection of Mr. J. J. MacAndrew. A third specimen in the same collection is but little larger

than fig. 141, although quite adult, well formed and in exquisite condition.

HAB. W. Australia.

77. JAMRACHI, *Gray* (f. 142).—V. testa oblongo-ovata, albida, fulvo-tincta, longitudinaliter fusco-strigata; spira acute-conica, breviuscula, sutura canaliculata; apertura latiuscula, infra medium dilatata, columella 4-plicata, labrum acutiusculum. Long. 55, lat. 24 mill.

This species was described by Dr. Gray as a variety of *Turneri*, but it is an easily recognised species and not to be confounded with *Turneri* or *Ellioti*.

HAB. W. Australia.

78. ROADNIGHTÆ, *McCoy* (f. 143).—V. testa ovata, solidiuscula, pallidissime flavidula, lineis fuscis sparsis angulariter undulatis longitudinaliter scripta; spira elata, pullus ad apicem magnus, rotundatus, obliquus; anfr. convexi, superne striis tenuibus circ. 10 spiraliter sculpti, costati, costis numerosis, rotundatis, in anfractu ultimo evanidis; apertura lata, columella tenuiter triplicata.

HAB. ?

MEGASPIRA, var. *Prevostiana*, f. 144 (*Voluta Prevostiana*, Crosse). Having compared this shell with the type of *V. megaspira* in the British Museum, I am convinced that it belongs to the same species. It is larger and more inflated, and the body whorl is larger in proportion to the spire, and more contracted at the base.

79. CONIFORMIS, *Cox* (f. 145).—V. testa oblongo-pyriformi vel coniformi, solida, fulvescente-fusca, fusco saturatiore obscure trifasciata, maculis trigonis inæqualibus numerosis interdum confluentibus albis irregulariter undique conspersa; spira brevissima, obtusa, apice rotundato; sutura impressa; anfr. 6 convexiusculi, longitudinaliter valide et regulariter striati, transversim lineis validis decussati; apertura subangustata, intus violaceo-fusca, columella quadriplicata, plicis 4 parvis, labrum simplicem, superne et inferne arcuatum, in medio leviter constrictum.

A very remarkable species, somewhat approaching *V. bullata* in form, with markings somewhat like those of *Conus anticus*. The shell is only known to me from the figure in the *Journal de Conchyliologie*, which I have copied.

80. KINGI, *Cox* (f. 146).—V. testa elongato-ovata, ponderosa, polita, fusco-flavida aut fulva; spira breviuscula, acuminata, sutura impressa; anfractus convexi, ultimus ventricus, basin versus constrictus; apertura longiuscula, mediocriter lata, fauce aurantia, columella quadriplicata, labrum incrassatum. Long. 25, lat. 37 mill.

81. THATCHERI, *McCoy* (147).—V. testa elongata, solida, pallide aurantia, infra suturas et ad basin serie macularum rubrarum, et undique maculis albidis trigonis elongatis et cordiformibus inæqualibus numerosis interdum confluentibus irregulariter ornata, obscure rubro interruptim bifasciata; spira elata; anfr. 8, primi 5 lævi, lente accrescentes, deinde leviter concavi, costato tuberculati; ultimus obtuse angulatus, ad angulum tuberculis infra costæformibus armatus, in medio rectiusculus, basin versus levissime attenuatus; apertura elongata, angusta, fauce rosea, columella 8-plicata, labrum crassum. Long. 95, lat. 34 mill.

The magnificent specimen figured, so much finer than the original type, is now in the collection of Mr. J. J. MacAndrew, by whom it was purchased from the collection of the late Dr. Prevost.

82. RUCKERI, *Crosse* (f. 148).—V. testa oblongo-ovata, crassiuscula, pallide carneo-albida, punctulis aurantio-fuscis, et maculis albidis minutis undique creberrime notata, maculis rufis irregularibus subdistantibus plerumque grandibus trifasciatim dispositis ornata; spira mediocriter elongata, apice obtuso, leviter costato; anfractus 7, planiusculi, ultimus obtusissime angulatus, ad angulum interdum obtuse tuberculatus; apertura elongato-ovata, supra medium coarctata, fauce vivide rubro-carnea; columella valide quadriplicata; labrum plus minusve incrassatum.

A somewhat variable species intermediate between *V. piperita* and *V. rutila*.

83. KREUSLERÆ, *Angas* (f. 150).—V. testa elongato-fusiformi, subangustata, pallide fulvo-lutea; spira turrata, apice papillari; anfractibus lævibus, in medio angulatis et plicato nodosis, ad suturas castaneo maculatis, ultimo fere $\frac{2}{3}$ longo, testam adæquante, maculis aurantiaco-fuscis, trigonato; labro simplici; columella subrecta, 4-plicata, et callo tenui induta. (*Angas*.) South Australia (Coll. Archer).

A very distinct and remarkable species, of which I believe only one specimen is known.

84. AUSTRALIÆ, *Cox* (f. 151).—V. testa elongato-turbinata, tenuiuscula, rufo-aurantia, conspicue nigro-fusco fulgurata; spira conica, mediocriter elevata, apice papillari; anfractus plano-declives, ultimus supra medium obtuse angulatus, infra angulum fere rectus; apertura elongata, fauce intense rufo-aurantia, columella rectiuscula, valide quinqueplicata.

A handsomely marked species known to me only by the figure in the Proceedings of the Zool. Soc. which I have copied. The type appears to be a young shell, and, handsome as it is, a fully developed specimen would be still handsomer.

85. HARGRAVESII, *Angas* (f. 154).—V. testa oblongo-ovata, rufo-fusca, maculis albis plerumque triangularibus undique ornata; spira elatiuscula, ad apicem obtusissima; anfractus 5 convexi; apertura parviuscula, pallide flavo-carnea, columella 3-4-plicata.

A very handsome, brilliantly coloured species, of which only a single specimen is known, and the habitat unknown.

86. MINIMA, *Sowerby* (f. 152).—V. minuta, fusiformi, solida, lævigata, alba, maculis et flammulis castaneis bifasciatim dispositis ornata; spira elevata, apice obtuso, papillari; anfractus $5\frac{1}{2}$ convexiusculi; apertura anguste ovata, columella quadriplicata. Long. 9, lat. $3\frac{3}{4}$ mill.

HAB. Port Jackson Head, 25 fath. (Brazier).

This is Angas' *Microvoluta Australis*. It is a very interesting little shell, and may be considered as a distinct genus, or as a sub-genus, but including it in *Voluta* I am obliged to change the specific name.

87. KAUPII, *Dunker* (f. 167).—V. testa ovato-oblonga, crassiuscula, lævis, gilva, albida, maculis ferrugineis irregularibus ex parte tessellatis variegata; spira breviuscula, conica, ad apicem obtusa; anfractus 6, convexiusculi, infra suturam distinctam irregulariter papillarem subexcavati, ultimus maximus, subangulatus; apertura magna, labrum paulo incrassatum, postice subalatum; columella perparum sinuata plicis quatuor crassis instructa. Long. 56, lat. 28 mill.

HAB. New Zealand.

88. *PUSILLA*, *Schrenck* (f. 153).—V. testa parva, fusiformi, lutescente-castanea, prope suturam linea albo et rufo articulata cincta, cæterum rufo minute maculata, maculis in series radiales interruptas dispositis; spira exserta, apice acutiusculo; anfractus 6-planati, longitudinaliter sulcati; apertura elongata, lutescente-castanea, columella recta, biplicata, plicis albis, superiore parva, subobsoleta, labrum vix incrassatum, arcuatum.

A very small species resembling some of the forms of *Mitra*, in which genus it might perhaps more properly be placed.

HAB. Japan.

89. *ARCHERI*, *Angas* (f. 155-6).—V. testa ovata, solida, basi recurva, longitudinaliter valde lirato-costata; costis obtusis, vix flexuosis, ad marginem parvis, gradatim evanidis, interstitiis lævibus; pallide carneo-fusca, in interstitiis fuscis, costis lineis tenuibus castaneis ornatis; spira subacuminata; anfr. 6 convexiusculi, superne fusco irregulariter maculati; apertura oblonga, latiuscula, fauce pallide carnea, columella basi triplicata, plicis numerosis supra exsculpta; labrum incrassatum, interne dentatum, ad marginem tenue, punctis minutis nigro-fuscis ornatum.

A lovely little species belonging to the *Lyria* section. The only specimen known, from Montserrat, West Indies, is in the collection of Mr. Archer.

90. *TISSOTIANA*, *Crosse* (f. 157).—V. testa ovato-elongata, crassiuscula, polita, flavida, zonis et maculis castaneis irregularibus picta; spira mediocriter elevata, obtusiuscula, sutura impressa, apice rotundato; apertura mediocriter lata, fauce flavicante, columella valide quadriplicata, labrum incrassatum. Long. 92, lat. 49 mill.

Allied to *V. flavicans*, of which it is possibly a variety. Locality unknown.

91. *CATHCARTIÆ*, *Reeve* (f. 158).—V. testa oblongo-ovata, aurantio-fulva, nigricante-purpureo trifasciatim interrupte maculata, maculis valde irregularibus et varie nebulatis, undique longitudinaliter lineis tenuibus undulatis fuscis picta; spira brevi, apice obtuso; anfractus superne concavo-declives, deinde subplanati; apertura elongata, mediocriter lata, columella quadriplicata, plicis sub-remotis, basin versus descendente.

The unique type of this handsome species is now in the collection of the Natural History Museum at Dijon.

92. *AMERICANA*, *Reeve* (f. 159, 160).—V. testa subabreviato-fusiforimi, albida, pallide aurantio-fusco eximie reticulata, et interrupte trifasciata; spira elatiuscula, turrata, apice papillari; anfractus superne leviter concavi, supra medium angulati, ad angulum tuberculis subacutis interdum in plicis descendentes coronati; apertura lata, albida, pallide aurantio-fusco trifasciatim maculata, columella quadruplicata, labrum leviter incrassatum valide arcuatum.

The type originally in the collection of Mrs. Cathcart is now in the Museum at Dijon. *V. Cleryana* (Petit) is probably the same species.

93. *BEAUI*, *Fischer* (f. 161).—V. testa elongata, fusiformi, nitida, solida, longitudinaliter costata, carneo lutea, lineis interruptis transversis nigro-fuscis eximie notata; spira elata, acuta, apice parvo, obtuso, albo, sutura vix impressa; anfractus 9, obtuse angulati; ultimus superne sub-angulatus, infra angulum leviter convexus, basi attenuatus; apertura elongata, columella multiplicata, labrum tenuiter reflexum, nigropunctatum. Long. 65, lat. 28 mill.

HAB. Marie-Galante.

A lovely shell allied to *V. Delessertiana*. The beautiful specimen figured, to which neither figure nor description can do justice, adorns the rich collection of M. Dupuis at St. Omer.

94. *GUNTHERI*, *Smith* (f. 162-3).—V. testa parva, breviter fusiformi, solida, alba, lineis numerosis longitudinalibus valde flexuosis flavo-fuscis ornata; anfractus 6, primi tres læves, convexiusculi; cæteri supra concavi, deinde angulati, ad angulum serie tuberculorum acutorum instructi; spira brevis, concava, ad apicem obtusa; columella alba, plicis validis quatuor munita; apertura angusta, alba. Long. 43, lat. 22 mill.; apertura long. 35, lat. 8½ mill.

HAB. West Australia.

A charming little species belonging to the *Aulica* group, beautifully painted with fine undulating brown lines upon a white ground. The specimen at present unique has been recently added to the British Museum collection.

95. *SCLATERI*, *Cox* (f. 164).—V. testa elongato-ovata, ponderosa, lævigata, albida; spira breviuscula, acute-conica;

anfractus planato-declives, ultimus obtusissime angulatus, supra angulum levissime concavus, infra angulum leviter convexus, basin versus attenuatus; apertura elongata, fauce alba, columella 4-5-plicata, basi incurva, labrum leviter arcuatum, superne emarginatum, leviter incrassatum.

HAB. Tasmania.

A porcelain white shell of just the form of the variety of *V. undulata* for which my father proposed the name of *Angasi*. The specimen figured was kindly lent me by M. Dupuis.

96. AFRICANA, *Reeve* (f. 165).—V. testa ovata, aurantio-fusca, obscure transversim fusco lineata, ad marginem lineis conspicuis nigro-fuscis duplicatis ornata; spira mediocriter elevata, turrata, sutura impressa, apice obtuso; anfractus angulati, supra angulum leviter concavi, ad angulum tuberculis in plicis descendentes coronati; ultimus subventricosus, costis rotundatis latiusculis vix elevatis irregularibus inferne evanidis munitis, basin versus contractus; apertura mediocriter lata, fauce aurantio-fusca, columella triplicata, superne nigro-fusco unimaculata, labrum incrassatum, concinne nigro-fusco lineatum.

HAB. S. E. Africa.

A species of great rarity of which only more or less worn specimens have been obtained. The one figured is the most perfect I have seen, and forms part of the collection of M. Dupuis.

97. BRAZIERI, *Cox* (f. 168).—V. testa elongato-ovata, polita, rufo-carnea, fulvo variegata et fasciata, flammis nigris inæqualibus longitudinaliter picta; spira brevissima, concavo-conica; anfractus convexi, ultimus superne rotundatus, ad latera leviter convexus, basin versus attenuatus; apertura elongata, columella triplicata.

A very remarkable Australian species having much the external appearance of an Olive, or a young Cowry. The figure is a copy from the Proc. Zoological Society. Only one specimen is at present known.

98. HARFORDI, *Cox* (f. 170).—V. testa elongato-ovata, solida, polita, alba, maculis pallidis quadrifasciatim dispositis et lineis pallidissimis longitudinalibus picta; spira parviuscula, sutura profunde et aperte canaliculata; anfractus convexi, apice obtuso, ultimus vix angulatus, ad latera rectiusculus,

basin versus paulo attenuatus; apertura elongata, columella conspicue quadriplicata.

Professor McCoy proposed for this species, remarkable for its channeled suture, the appropriate name of *V. canaliculata*, but earlier in the same year Dr. Cox had given it the name of *Harfordi*.

99. BEDNALLI, *Brazier* (f. 171).—V. testa elongato-subfusiformi, pallide flavida, balteis 3-4 angustis rufo-fuscis, et flammis longitudinalibus ejusdem coloris arcuatis et angulatis conspicue picta; spira elata, obtusa; anfractus convexi; ultimus haud angulatus, elongatus, angustusculus, basin versus mediocriter attenuatus; apertura angusta, fauce pallide flavidula; columella quadriplicata, plicis obliquis subremotis.

A remarkable species with a very distinct style of painting. Three or four transverse reddish-brown narrow bands, with peculiarly arched longitudinal flames between them. The specimen is believed to be unique.

100. LUTEA, *Watson* (f. 172).—V. testa fusiformi, sordide lutea; spira elata, acutiuscula, sutura irregulariter impressa, apice leviter obtuso; anfractus $6\frac{1}{2}$, convexi, costati; ultimus vix ventricosus, subobsolete costatus, basin versus attenuatus; apertura mediocriter ampla; columella rectiuscula, cuticula vitrea late effusa tecta, quadriplicata, plicis subæqualibus, parviusculis, labrum incrassatum, rotundatum, superne leviter emarginatum.

A New Zealand species discovered in the 'Challenger' expedition.

101. ALABASTRINA (Gen. *Guivillea*) *Watson* (f. 169, $\frac{1}{2}$ diam.).—V. testa ovata, tenui, alba, undique minute granulata, spiraliter inconspicue irregulariter striata; spira elata, ad apicem leviter contorta, sutura perobliqua, leviter canaliculata; anfractus $5\frac{1}{4}$, convexi; ultimus ventricosus; apertura ampla; columella recta, cuticula vitrea late effusa tecta, uniplicata, plica angulata, vix obliqua, labrum tenue, valde arcuatum.

A single specimen of this remarkable species was dredged in the voyage of H.M.S. 'Challenger,' between Marion Island and the Crozets, at a depth of 1600 fathoms. The shell hardly looks like a *Volute*, having something of the external form of *Fusus* (*Neptunea*) *norvegicus*, and the single plait on

the columella is unlike the curved oblique plaits of the typical *Volutes*. The animal, however, as we are informed by the Rev. R. Boog Watson, is a typical *Volute*.

102. PROVOCATOR (*Provocator pulcher*) Watson (f. 173).—
V. testa subfusiformi, postice acuminata, fulva, cuticula albida tenui induta; spira elata, acuta, apice parvo, acuto; anfractus 7-8, convexiusculi, sutura obliqua, tegmine vitreo crasso fulvo inferne tenuiter effuso celata; ultimus infra medium leviter ventricosus, basin versus leviter contractus; apertura ovata, inferne effusa, superne leviter contracta; columella rectiuscula, basi acuta, 2-3-plicata, plicis parvis, perobliquis; labrum levissime incrassatum, superne profunde sinuatum.

Another very remarkable form discovered in the 'Challenger' expedition. The spire with thickly enamelled suture is like that of an *Ancillaria*, and the whole form and texture of the shell is not unlike some of the species of that genus; it has the columella plaits of a *Volute*, but these are not very prominent. The animal being a decided *Volute* I include the species in this monograph, and am unable to use Mr. Watson's specific name, as it is preoccupied. Of the two specimens discovered at stations 149 and 150, one has three columella plaits, and the other only two.

NOT ADOPTED.

Hamilleyi, Crosse, Journal de Conchyliologie, 1870, p. 79, is a large, well grown, comparatively smooth variety of *V. rupestris*.

canaliculata, McCoy, Ann. & Mag. of Nat. Hist., July, 1869, = *Harfordi*.

Cleryana, Petit, J. de Conch., 1856, p. 182, = *Americana*.

Stearnsi, Dall, Cal. Proc. iv. t. 1, f. 1, does not seem from figure and description to differ materially from *V. Ancilla*.

Macgillivrayi, Cox, is a variety of *piperita*.

fuscus, Quoy, = *pacifica*.

ceraunia, Crosse, J. de Conch., 1880, pl. 4, is a variety of *piperita*.

Prevostiana, Crosse, J. de Conch., 1879, p. 41, pl. 1, f. 1, is a variety of *megaspira*.

VOLUTA.

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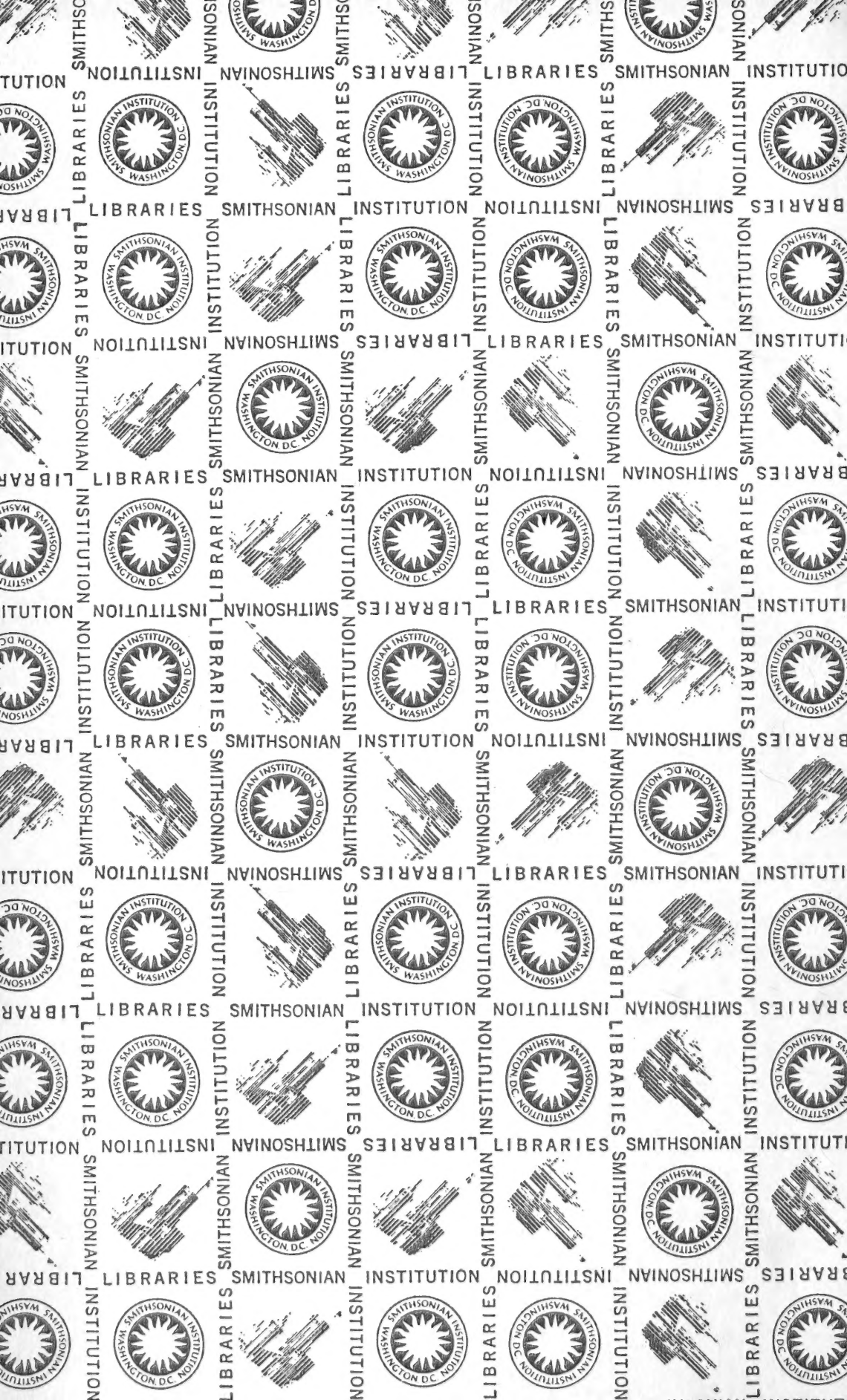
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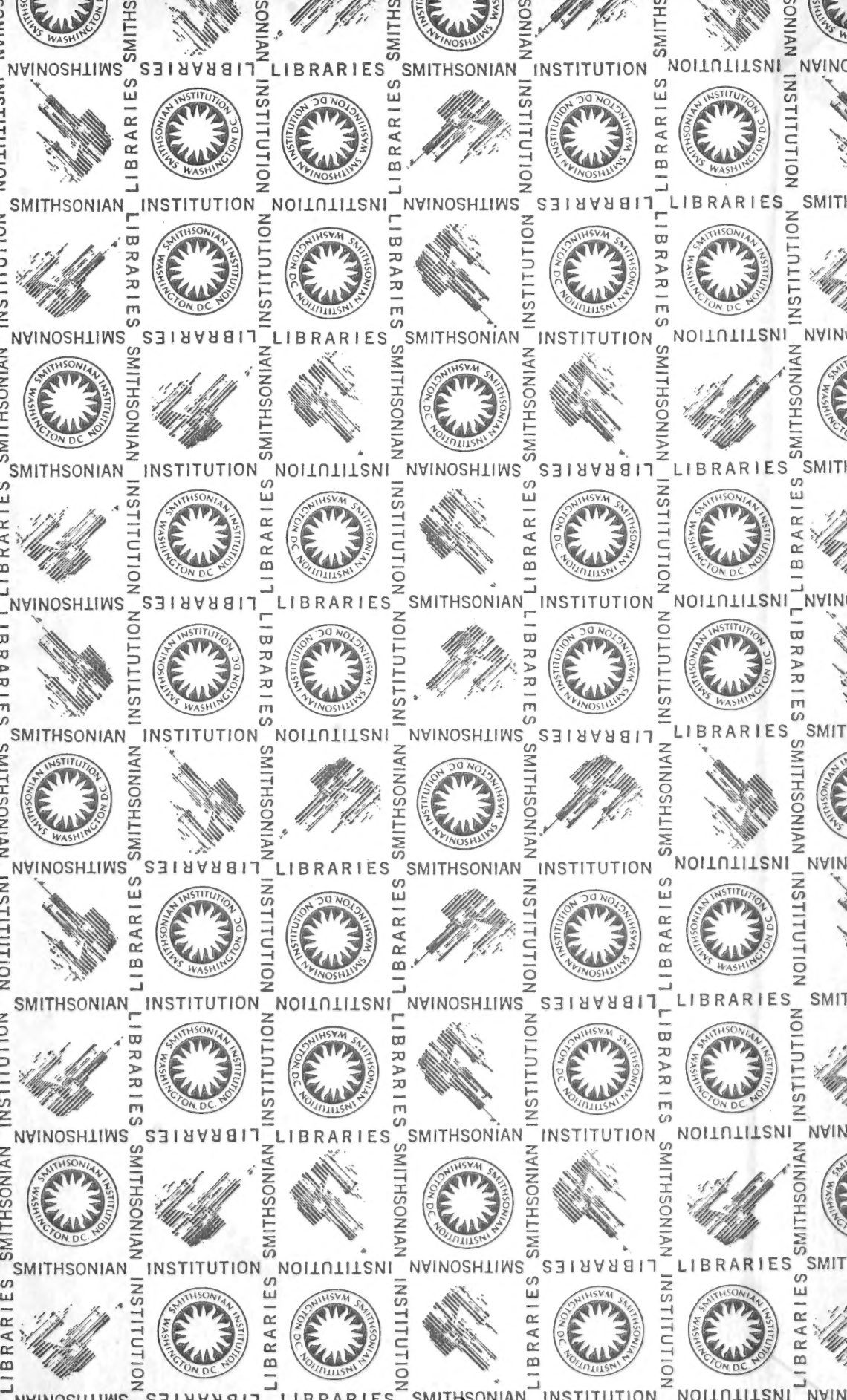
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