



CONCHOLOGIA ICONICA:

OR,

ILLUSTRATIONS

OF THE

SHELLS OF MOLLUSCOUS ANIMALS.

VOL. XI.

CONTAINING MONOGRAPHS OF THE GENERA

PINNA.
PERNA.
MALLEUS.
VULSELLA.
CRENATULA.

UMBRELLA.
PEDUM.
IANTHINA.
COLUMBELLA.
META.
CALYPTRÆA.

CREPIDULA.
CRUCIBULUM.
TROCHITA.
ANOMIA.
PLACUNANOMIA.

BY

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"Why stand we gazing on the sparkling brine,
With wonder smit by its transparency,
And all-enraptured with its purity?
Because the unstained, the clear, the crystalline,
Have ever in them something of benign."—*Wordsworth*

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1859.

MONOGRAPH

OF THE GENUS

P I N N A .

‘Give me your gloves, I’ll wear them for your sake.’

Shakspeare.



16.

Pinna Broda Imp

Pinna Broda Imp

PINNA.

PLATE I.

Genus PINNA, *Linnaeus*.

Testa æquivalvis, obliqua, longitudinaliter cuneiformis, fibrolaminaris, plerumque squamata, umbonibus terminalibus, lateribus sæpè hiantibus. Cardo lateralis, edentulus, ligamento subinterna per totam longitudinem continuo. Impressio muscularis composita.

Shell equivalve, oblique, longitudinally wedge-shaped, fibrolaminar, generally sealed, umbos terminal, sides often gaping. Hinge lateral, toothless, with the ligament rather internal, continued throughout its whole length. Muscular impression compound.

The large typical species of this genus, *P. rotundata*, being an inhabitant of the Mediterranean, it was one of the few shells described by the old Greek father of natural history, Aristotle. His designation of *Harva* was therefore adopted by the founder of our nomenclature in his 'Systema Naturæ;' and it is one of the few Linnean genera that has escaped the knife of modern genus-mongers. The *Pinnæ* are so nearly allied in form and tissue that they are scarcely susceptible of even subgeneric division. Their chief variation is in sculpture, the scales with which they are mostly armed being in some, as in *P. serrata*, very minute and sharp; in others, as in *P. alta* and *Cumingii*, raised and tubulous; and in others, as in *P. nobilis* and *rugosa*, promiscuously distorted; while many species, as *P. fumata*, *bicolor*, and *Philippinensis* are smooth. They are all of fibrous brittle texture, and often brilliant in colour, though a dull-olive rather predominates.

The *Pinnæ* are chiefly inhabitants of the Old World. Out of fifty species of which the habitats are known, fully half are from the region of the Philippine Islands, Malacca, and the Moluccas. Only one species, abundant chiefly on the south-west coast, inhabits our own shores, and three the Mediterranean and Adriatic. Australia contributes six fine species, and New Zealand two, Japan one,

and the Cape of Good Hope one. Of the western species-comprising only the proportion of a fifth, the three finest are from Panama. Three are from the West Indies, one from Honduras, one from Puerto Portrero, and three from South Carolina.

In examining the species of this genus, great care is necessary to observe them in different stages of growth. Individuals which in a young state are characterized by a profusion of scales, often become roughly laminated and denuded of sculpture in an advanced stage of growth; and the same species is found, even at the same apparent age, so variable as to be scaly in one habitat and smooth in another. All these differences may however be observed, and their gradations detected, by sufficiently copious observations.

Species I. (Fig. a, b, Mus. Cuming.)

PINNA CHEMNITZII. *Pinn. testâ subarcuato-trigona, tenui, ventricosa, sordide olivacea, longitudinaliter radiatâ costatâ, costis interdum subobsolete, multiris, interstitiis transversè striatis; concentricè sulpicatâ, plicis distinctibus, cili evanidis; margine dorsali incurvato, plerumque muricato-squamato.*

CHEMNITZ'S PINNA. Shell somewhat arenately triangular, thin, ventricose, dull-olive, longitudinally radiately ribbed, ribs sometimes obsolete, smooth, with the interstices transversely striated; concentrically slightly plicated, the folds being distant and soon disappearing; dorsal margin incurved, generally prickly scaled.

HANLEY, Pro. Zool. Soc. 1858, p. 136.

Hab. Philippine Islands; Cuming.

A thin ventricose shell of a sombre-olive colour, prickly scaled only along the dorsal edge.



PINNA.

PLATE II.

Species 2. (Mus. Cuming.)

PINNA SEMINUDA. *Pinna testâ trigonâ, truncatâ, latere postico longitudinaliter costato, multisquamoso, squamis tenuibus, erectis, latere antico squamis copiosis minutis, versus umbones subbovatis, rugis perpaucis anplis concentricis; sordidè olivaceâ.*

THE HALF-NAKED PINNA. Shell triangular, truncated, posterior side longitudinally ribbed, many-scaled, scales delicate, erect, anterior side with the scales plentiful, minute, rather obsolete towards the umbones, with a few large concentric wrinkles; dull olive.

LAMARCK, Anim. sans vert. vol. vii. p. 61.

Pinna squamosissima, Philippi.

Hab. South Carolina.

This species, of a dull olive horny substance and peculiarly truncated form, is densely sculptured on the posterior angle with delicate, erect scales, while on the anterior angle the scales are even more numerous, but smaller, and, being almost obsolete towards the umbones, impart a comparative smoothness to that portion of the shell.

Species 3. (Mus. Cuming.)

PINNA ROTUNDATA. *Pinna testâ elongato-trigonâ, extremitate rotundatâ, radiatim subflexuoso-liratâ, undique densissimè squamosâ, squamis peculiariter irregularibus, quasi papillaribus; griseo-rosecente.*

THE ROUNDED PINNA. Shell elongately triangular, rounded at the extremity, radiately subflexuously ridged, everywhere very densely scaled, scales peculiarly irregular, as though papillary; greyish-red.

LINNEUS, Syst. Nat. p. 1160.

Pinna squamosa, Gmelin.

Pinna marina, Chemnitz.

Hab. Mediterranean.

This well-known species, an inhabitant chiefly of the Mediterranean, is the largest of the genus, growing frequently to two feet in length. The scales with which it is everywhere densely beset have a peculiar papillary look, and are distorted promiscuously in all directions. It is of this species that the fine silken byssus has been sometimes used for the manufacture of a pair of gloves.



PINNA.

PLATE III.

Species 4. (Mus. Cuming.)

PINNA NIGRA. *Pinna testâ trigono-flabellatâ, versus umbones attenuatâ, liris flexuosis obscure radiatâ, vel levigatâ vel squamatâ, squamis amplis distantibus, recurvo-erectis; nigra.*

THE BLACK PINNA. Shell triangularly fan-shaped, attenuated towards the umbones, obscurely rayed with flexuous ridges, smooth or scaled, scales large, distant, recurrently erect; black.

CHEMNITZ, Conch. Cab. vol. viii. p. 221. pl. 88. f. 774.

Pinna nigra, Lamarck.

Hab. South Seas and Philippine Islands; Cuming.

This well-defined species varies materially in sculpture, being sometimes unusually strongly scaled and sometimes smooth and of large size. It is not often that specimens occur with such holdly developed scales as in the shell here figured. Of the large, smooth variety there are some remarkable specimens in the British Museum.

Species 5. (Mus. Cuming.)

PINNA INFLATA. *Pinna testâ obliquè trigonâ, subortâ, tenui, valdè inflatâ, levigatâ, liris minutis obscure serratis radiatâ, anticè profusè minutissimè serrato-squamatis, margine cardinali muricato-squamato, squamis paucis grandibus; olivaceo-cornè.*

THE INFLATED PINNA. Shell obliquely triangular, somewhat distorted, thin, very inflated, smooth, rayed with minute, obscurely serrated ridges, anteriorly very minutely serrately scaled, hinge-margin prickly-scaled, scales few, large; olive-horny.

CHEMNITZ, Conch. Cab. vol. viii. p. 215. pl. 8. f. 771.

Hab. Philippine Islands; Cuming.

This is a very distinct species from the Linnæan *P. pectinata* of our European shores, with which it is confounded by Lamarck. It is singularly inflated, and, though apparently smooth will be found on examination to be crowded on the anterior side with very minute appressed scales, and to be rayed with minute serrated ridges.



6a.



6b.

PINNA.

PLATE IV.

Species 8. (Fig. 8. Mus. Cuming.)

PINNA SACCATÆ. *Pinna, testâ irregulariter trigonâ, nunc oblongâ nunc latiusculâ, semper plus minus distortâ, radiatim costatâ, costis amplis, obtusis, undatis, interdum nodatis, later. utriusve sine sinu coarctato; siccâ inæo-rufo-fescente, coradâ.*

THE SACHEL-SHAPED PINNA. Shell irregularly triangular, sometimes oblong, sometimes rather broad, always more or less distorted, radiately ribbed, ribs large, obtuse, waved, sometimes noded, an-

terior side often contracte? by a sinus: amber-red, horny.

LINNÆUS, Syst. Nat. p. 1160.

Var. elongata, *P. Nuttallii*; Conrad.

Hab. Sandwich Islands and Philippine Islands, Cuming.

There is no defining the varieties of this very characteristic species. It has a wide range of habitation, and is found distorted into all sorts of forms between those selected for illustration. Its amber-red horny substance is quite peculiar.



PINNA.

PLATE V.

Species 7. (Mus. Cuming.)

PINNA RIGIDA. *Pinna testâ subpyriformi, obscure costellatâ, squamata, squamis paucis, brevibus, latere antico rudè decussatim rugosa; fusco-olivacea.*

THE RIGID PINNA. Shell somewhat pear-shaped, obscurely ribbed, scaled, scales few, short, anterior side rudely decussately wrinkled; fuscous-olive.

DILLWYN. Descriptive Catalogue of Shells, p. 327.

Hab. — ?

Characterized by a pear-shaped growth, dark fuscous-olive colour, and irregular sculpture of promiscuous, short, broken scales.

Species 8. (Mus. Cuming.)

PINNA INCURVATA. *Pinna testâ lanceolato-fanelliformi, lateribus subinæqualis, medio curvata, utrinque regulariter dentata, levigata, livido-cinerea, subretroâ, antice oblique concentricè corrugata, posticè transversim laevi rugosa.*

THE INCURVED PINNA. Shell lanceolately fan-shaped, keeled in the middle, regularly sloping on each side,

smooth, livid-ash, glassy, anteriorly obliquely wrinkled, posteriorly transversely finely rugose.

CHEMNITZ, Conch. Cab. vol. viii. p. 229. pl. 90. f. 778.

Hab. Moluccas.

Readily distinguished from all other species by its lanceolate form and thin, livid-ash, brittle substance.

Species 9. (Mus. Cuming.)

PINNA RUMPHII. *Pinna testâ gracili-trigona, cucullata, medio curvata, utrinque plano-convexa, pallide cinerea, subpellucida, obscurissimè longitudinaliter lirate et peculiariter malleata, antice validè oblique corrugata.*

RUMPHIUS'S PINNA. Shell slenderly triangular, curved, keeled in the middle, flatly sloping on each side, pale-ash, rather transparent, very obscurely longitudinally ridged and peculiarly malleated, anteriorly strongly obliquely wrinkled.

HANLEY, Pro. Zool. Soc. 1828.

Hab. Moluccas.

Very closely allied to the preceding species, but uniformly smaller and more curved, whilst the surface is unusually finely malleated.



10.



11.

P I N N A .

PLATE VI.

Fig. 10 (Mus. Cuming.)

The shell here figured is a young specimen of *P. squamosa*, in which the scales are more produced though preserving the same characteristic promiscuous growth. Chemnitz described and figured it as a distinct species, with the name *P. aculeato-squamosa*, while Poli confounded it with the Linnæan *P. nobilis*. It is an extremely interesting state of the species, and should be carefully preserved in collections with the adult form.

Species 11. (Mus. Cuming.)

PINNA ALTA. *Pinn. testâ pyriformi-flabellatâ, radiativâ*

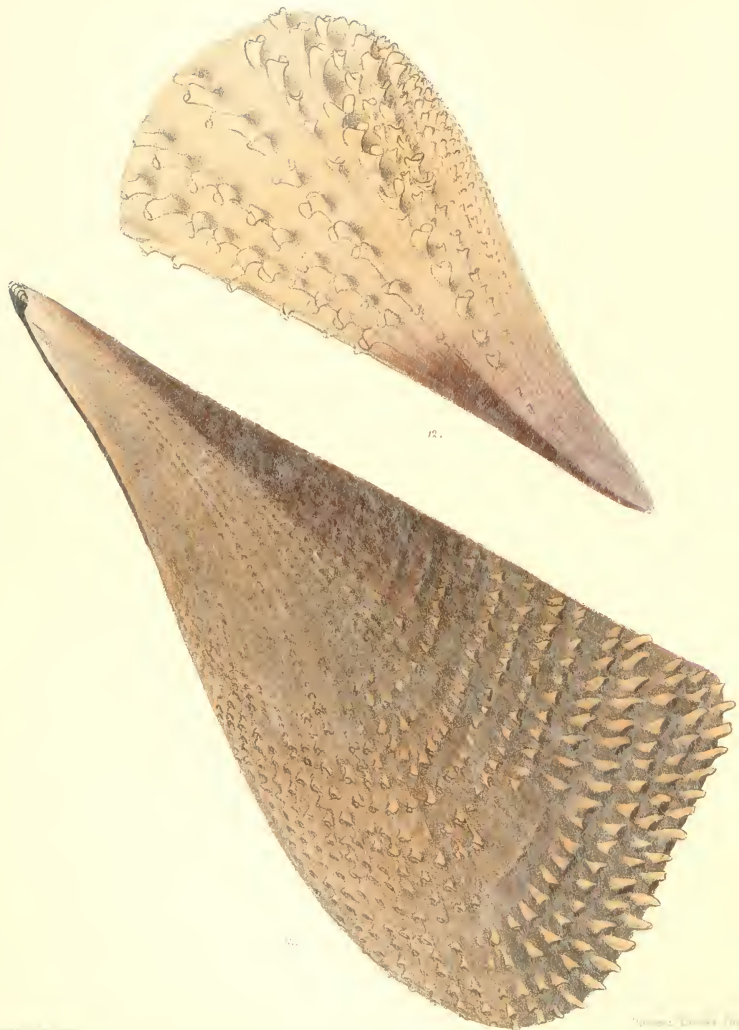
longitudinaliter costulatâ, costellis ampliter squamatis, squamis regularibus, conspicuè productis, recurvis, tubulatis; fusco-olivaceâ.

THE HIGH PINNA. Shell pyriformly fan-shaped, radiately longitudinally ribbed, ribs largely sealed, scales regular, conspicuously produced, recurved, tubular; fuscous-olive.

SOWERBY, Pro. Zool. Soc. 1835, p. 84.

Hab. Bay of Honduras (on sandbanks).

This fine species is remarkable for the conspicuous regularity of its large, recurved, tubular scales.



P I N N A .

PLATE VII.

Species 12. (Mus. Cuming.)

PINNA SQUAMIFERA. *Pinna testâ sublancoveolata, cornéâ, costellis paucis squamiferis longitudinaliter radiatâ, squamis subdistansibus, majoribus, latiusculis, subreflexis, rotundatis, hyalinis. margine dorsali recto, positivo centralique rotundatis, continuis, aréâ centrali rugosâ.*

THE SQUAMIFEROUS PINNA. Shell somewhat lanceolate, horny longitudinally rayed with a few small squamiferous ribs, scales rather distant, larger than usual, rather broad, somewhat reflected, rounded, hyaline, dorsal margin straight, posterior and ventral margins rounded, continuous, ventral area rugose.

SOWERBY, *Proc. Zool. Soc.* 1835, p. 85.

Hab. Cape of Good Hope.

The distinguishing features of this species consist in its

broad-spreading, recurved scales, and comparatively distant ribs.

Species 13. (Mus. Cuming.)

PINNA ZELANICA. *Pinna testâ suboblongo-trigona, levi, eie costellatâ, promiscuè squamatâ, squamis brevibus, patulis, erectis, valdè irregularibus; nigrescente-olivaceâ.*

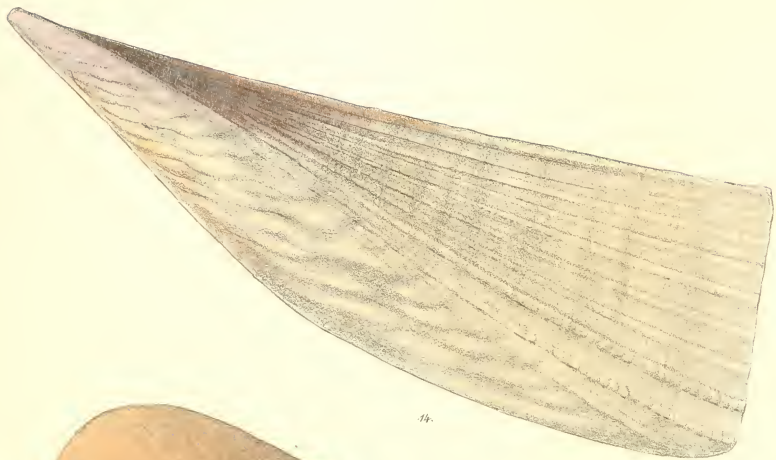
THE NEW ZEALAND PINNA. Shell somewhat oblong-triangular, smooth, scarcely ribbed, promiscuously scaled, scales short, open, erect, very irregular; very dark olive.

GRAY, Appendix to Dieffenbach's New Zealand.

Hab. New Zealand.

The scales of this species are distinguished for their very promiscuous, incomplete growth, being curiously short, open, and erect.

April, 1858.



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45.

P I N N A .

PLATE VIII.

Species 14. [Mus. Comp. ag.]

PINNA PAPIRACEA. *Pinna* test. suboblongo-trigona, le-
viter empetrabilis, lineis concentricis, postice costatâ, costis
distichis, summitate obtuse squamata, interstitiis
marginis anticae oblique subtransversis costatâ.

THE PAPER PINNA. Shell oblongly triangular, thin,
somewhat transparent, smooth, posteriorly ribbed,
ribs distant, some absolutely scald, interstices con-
cave anteriorly obliquely one-wrinkled.

CREMINTZ. *Conch. Cab. vol. viii. p. 243. pl. 93. f. 786.*
Hab. —.

Chiefly distinguished by its subely-spread ribs, with
their regular minute interstices.

Species 15. [Mus. Comp. ag.]

PINNA HANLEY. *Pinna* test. oblongo-trigona, subventri-

cosâ, livida-olivacea, cornea, postice lirata, testis nume-
rosis, irregularibus, interstitiis serratis, anticae oblique
rudè corrugata, superficie undique peculiariter decus-
sata mullata, margine postico incurvato, auricato-
squamata.

HANLEY'S PINNA. Shell oblong-triangular, somewhat
ventricose, livid-olive, horny, posteriorly ridged,
ridges numerous, irregular, interstices serrated, ante-
riorly obliquely rudely wrinkled, with the surface
curiously decussately malleated throughout, posterior
margin incurved, prickly-scald.

Hab. Amboyna.

A curiously-sculptured species, which gives me an op-
portunity of acknowledging the valuable assistance kindly
afforded me by Mr Hanley in the examination of this
genus.

April, 1855



16.



17.

P I N N A .

PLATE IX.

Species 16. (Mus. Cuming.)

PINNA BULLATA. *Pinna testâ obliquè trigonâ, margine declivi-rotundatâ, tenui, subpellucidâ, radiatum costatâ, costis gradatim latioribus; sordidè albâ, versus umbones aurantio-rufâ.*

THE BUBBLE-LIKE PINNA. Shell obliquely triangular, slopingly rounded at the margin, thin, semitransparent, radiately ribbed, ribs gradually broader: dead-white, orange-red towards the umbones.

SWAINSON, Hauley, MS. Mus. Cuming.

Hab. Moluccas.

Of light, horny substance, tinged with orange-red towards the umbones. The ribs radiate to the margin, but become gradually broader and almost superficial.

Species 17. (Mus. Cuming.)

PINNA BICOLOR. *Pinna testâ elongatâ, margine declivi-rotundatâ, radiatum costatâ, costis angustis, subobsoleto, paulo flexuosis, intersitiis parva concavis; lividocinereâ, subpellucidâ, olivaceo-nigricante radiatâ.*

THE TWO-COLOURED PINNA. Shell elongated, slopingly rounded at the margin, radiately ribbed, ribs narrow, rather obsolete, a little flexuous, intersices but little concave; livid-ash, somewhat transparent, rayed with olive-black.

CHEMNITZ, Couch. Cab. vol. viii. p. 234. pl. 90, f. 780.

Pinna dolabrata, Lamarek.

Hab. Malacca.

This fine species is chiefly characterized by its black-rayed painting.



P I N N A .

PLATE X.

Species 18. (Mus. Cuming.)

PINNA FLABELLUM. *Pinna testâ trigonâ, versus umbones subcontractâ, radiatim costatâ, costis tubulato-squamatis, squamis distantibus, erectis; olivaceo-cornuâ, aurantio-roseo tinctâ.*

THE LITTLE FAN PINNA. Shell triangular, rather contracted towards the umbones, radiately ribbed, ribs tubularly scaled, scales distant, erect; olive-horny, tinged with orange-red.

LAMARCK, Anim. sans vert. vol. vii. p. 61.

Pinna hand ignobilis, Chemnitz.

Hab. ———?

A light olive-horny shell, of a compact triangular form, contracted into a fan-shape towards the umbones, rather distantly ribbed, the ribs being surmounted with nearly erect tubular scales.

Species 19. (Mus. Cuming.)

PINNA RUDIS. *Pinna testâ rudè flabelliformi, tenuiculâ, subcentricosâ, obscurè costatâ, costis squamiferis, squamis magnis, irregularibus, semitubulosis; aurantio-ru-
brâ.*

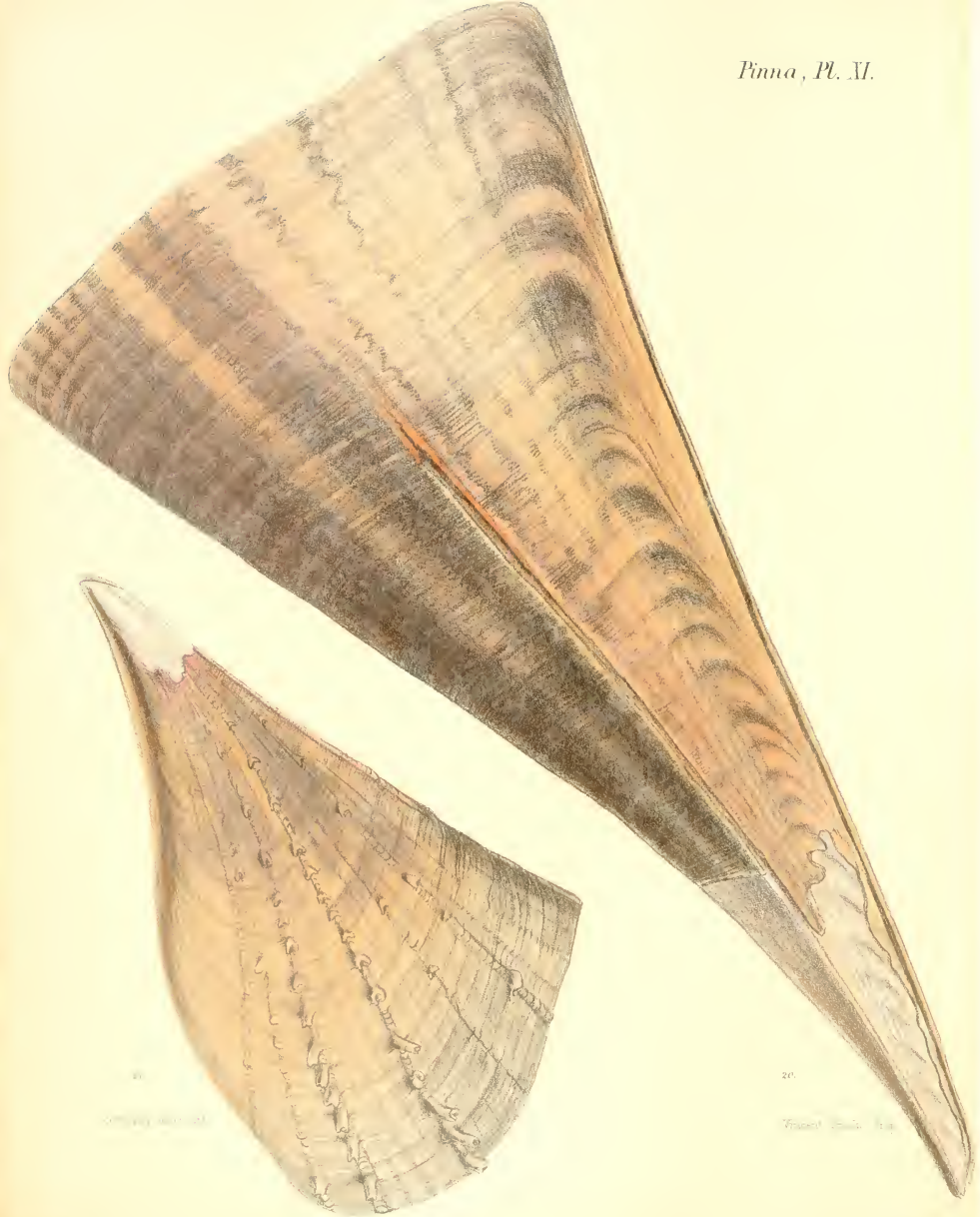
THE RUDE PINNA. Shell rudely fan-shaped, rather thin, somewhat ventricose, obscurely ribbed, ribs scaled, scales large, irregular, semitubular: orange-red.

LINNEUS, Syst. Nat. p. 1159.

Hab. West Indies.

This fine species is distinguished by its very irregular, blistered growth, and deep orange-red colour. The scales, which are large and semitubular, are also of a rude, irregular growth.

May, 1858.



Pinna (Linn.)

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Pinna (Linn.)

P I N N A .

PLATE XI.

Species 20. (Mus. Cuming.)

PINNA PHILIPPINENSIS *Pinna testâ elongato-trigona, lateribus rectis vel subincurvis, medio subacutè angulata, utrinque declivi, undique levigatâ, submarguritateâ; livido-cinerea, summo-nigricante radiatâ et undatâ.*

THE PHILIPPINE PINNA. Shell elongately triangular, sides straight or slightly incurved, middle rather sharply angled, sloping down each side, everywhere smooth and somewhat pearly; livid-ash, rayed and waved with smoky-black.

HANLEY, *Pro. Zool. Soc.* 1858.

Hab. Philippine Islands; Cuming.

A fine, elongately triangular shell, conspicuously angularly raised in the middle, and everywhere peculiarly

smooth and pearly. In colour it is a dull livid-ash, promiscuously rayed and waved with smoky-black.

Species 21. (Mus. Cuming.)

PINNA GOULDII. *Pinna testâ rudè flabelliformi, anticâ rotundatâ, subventricosâ, olivaceo-corneâ, sex-costatâ, costis valdè irregularibus, subflexuosis, unnc rudè serratis, nunc tubuloso-squamatis.*

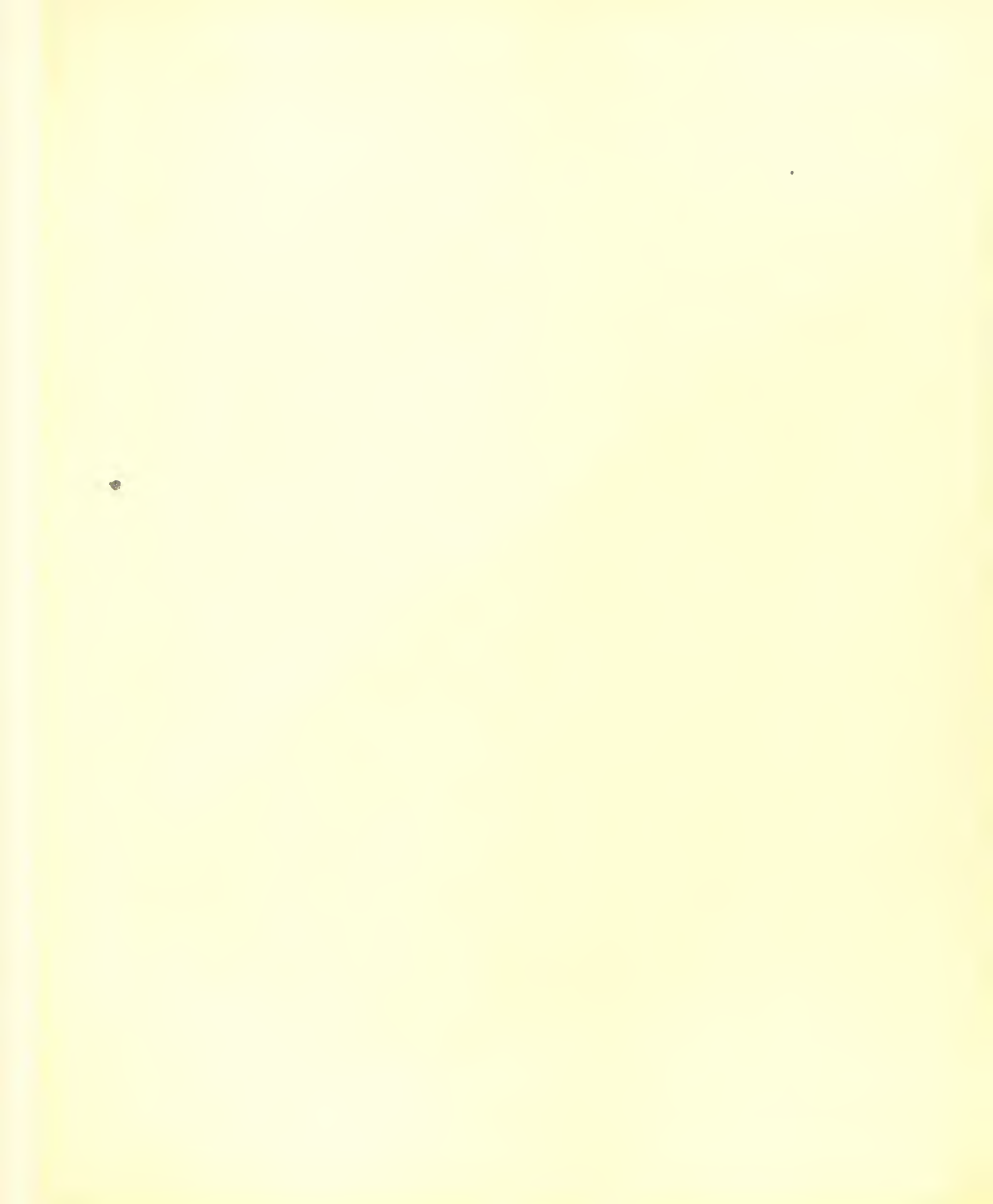
GOULD'S PINNA. Shell rudely fan-shaped, anteriorly rounded, slightly ventricose, olive-horny, six-ribbed, ribs very irregular, rather flexuous, now rudely serrated, now tubularly scaled.

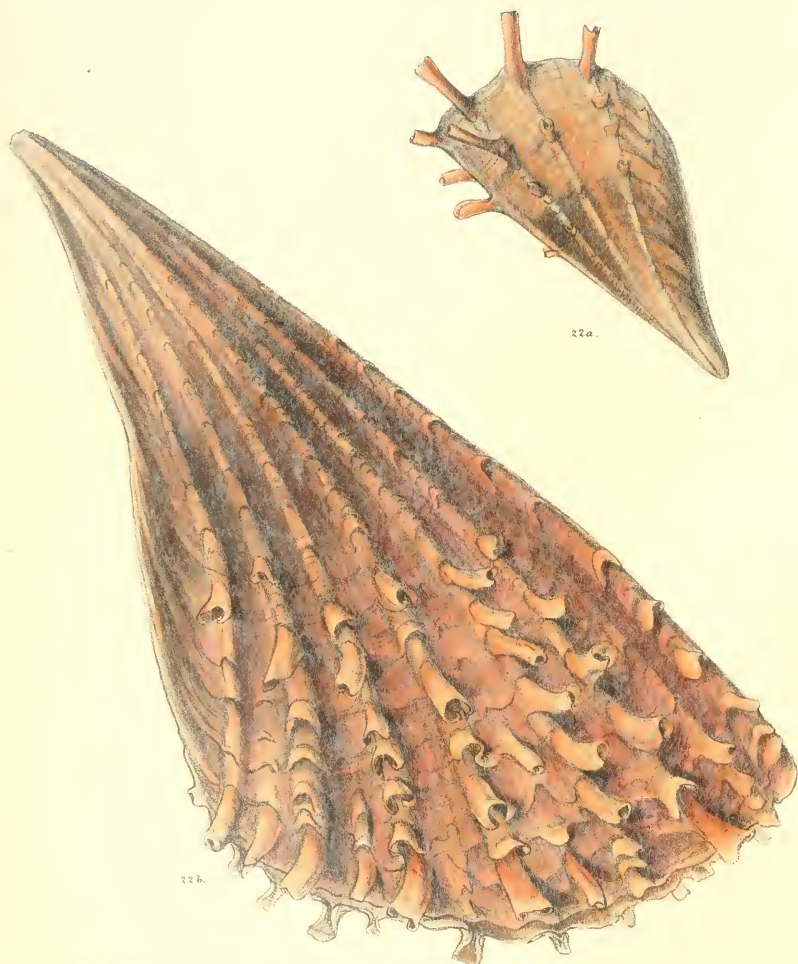
HANLEY, *Pro. Zool. Soc.* 1858.

Hab. — ?

Of very irregular growth, and ambiguous specific character.

May, 1858.





22a.

22b.

PINNA.

PLATE XII.

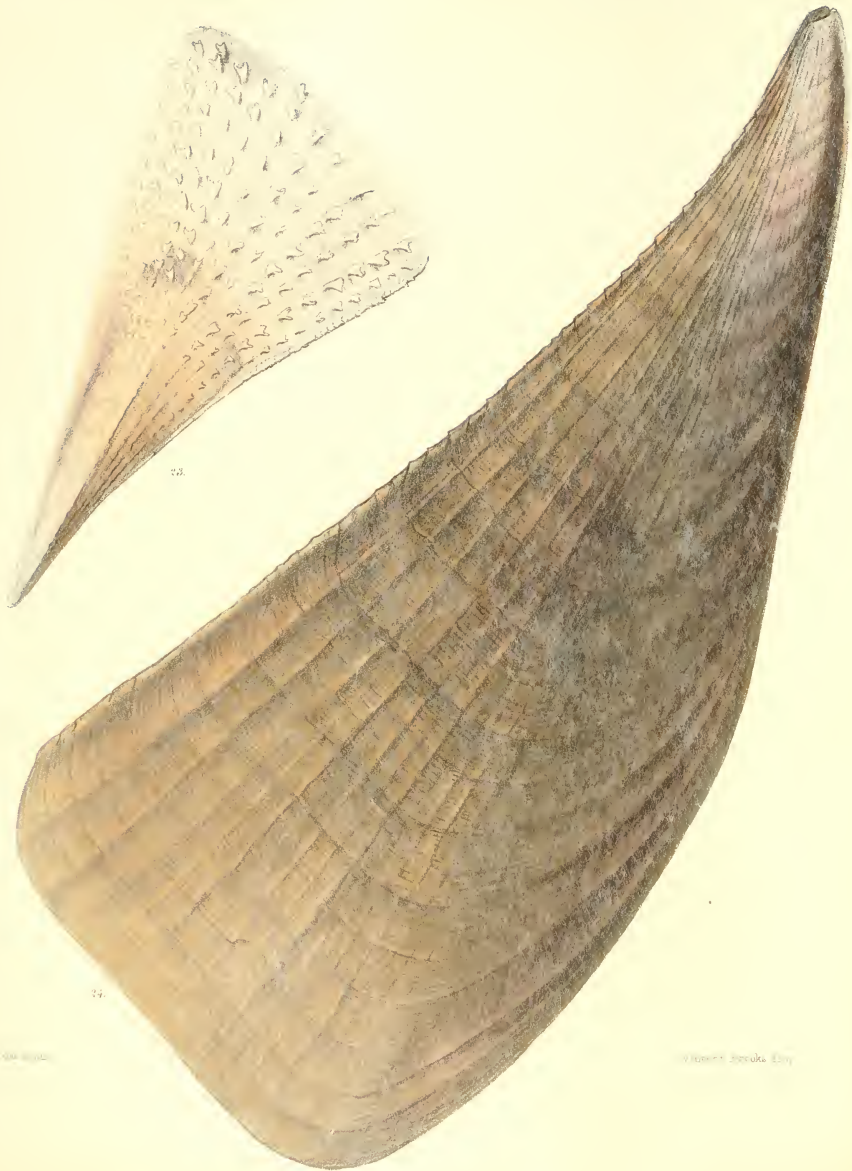
Species 22. (Fig. a, b. Mus. Cuming.)

PINNA PERNULA. *Pinna testâ subelongato-fabriliformi, tenuiculâ, ventricosâ, sez- ad septem-costatâ, costis magnis, squamatis, squamis amplis, tubulosis, subirregularibus, suberectis, costarum interstitiis latè concavis; vires-ante-rubente, squamis olivaceo-flavo tinctis.*
THE LITTLE HAM PINNA. Shell somewhat elongately fan-shaped, rather thin, ventricose, six- to seven-ribbed, ribs large, scaled, scales large, tubular, somewhat irregular, rather erect, interstices between the ribs broadly concave; greenish-red, scales tinged with olive-yellow

CHEMNITZ, Conch. Cab. vol. viii. p. 242. pl. 92. f. 785.
Hab. —?

It will be seen that in the young state of this species, represented at Fig. 22 a, the spines are longer and more tubular, and they appear to become broken off or decomposed with age. This is probably the case with all *Pinna*, and as the shell advances in growth the scales are developed with less precision, ruder in form and more irregular in position. The *Pinna pernula* is a deep amber-red colour, somewhat resembling that of *P. rudis*, and the scales have a semitransparent yellowish tinge.

May, 1858.



73.

74.

Pinna

Pinna

PINNA.

PLATE XIII.

Species 23. (Mus. Cuming.)

PINNA MURICATA. *Pinn. testā trigonā, ad latera subincurvā, pellucido-albā, subventricosā, obscurē costatā, costis squamis triangularibus nitidē armatā.*

THE PRICKLY PINNA. Shell triangular, rather incurved at the sides, transparent white, somewhat ventricose, obscurely ribbed, ribs neatly armed with triangular scales.

LINNEÆUS, Syst. Nat. p. 1160.
Hab. West Indies.

This, according to Chemnitz and Lamarck, appears to be the Linnæan *P. muricata*. It is of semitransparent horny-white substance, neatly scaled, the scales having a peculiarly open triangular growth.

Species 24. (Mus. Cuming.)

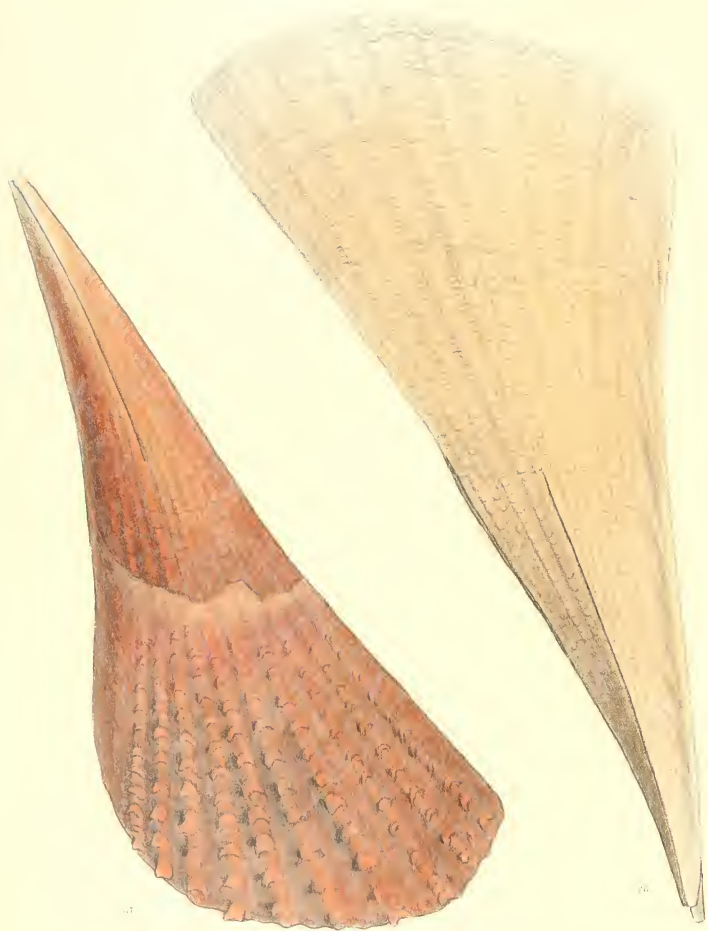
PINNA LURIDA. *Pinn. testā subelongato-fabelliformi, lurido-corneā, tenui, subventricosā, posticē radiatim liratā, margine subincurvā, obscure muricatā, anticē concentricē rugosā, margine rotundatā.*

THE LURID PINNA. Shell somewhat elongately fan-shaped, lurid-horny, thin, rather ventricose, posteriorly radiately ridged, margin rather incurved and obscurely prickly, anteriorly concentrically wrinkled, rounded at the margin.

Hab. Philippine Islands: Cuming.

This approaches very nearly to *P. Chemnitzii*, but the decussated sculpture which is characteristic of that species is wanting in the specimen before us.

May, 1858.



PINNA.

PLATE XIV.

Species 25. (Mus. Cuming.)

PINNA ELECTRINA. *Pinn. testâ oppositè flabelliformi, ad latera incurâ, versus umbones medio angulato-ventricosâ, radiatim flexuoso-liratâ, liris frivò obsoletis, versus marginem squamatis, squamis brevibus, patulis; osti-trino-rubente, carâ subcicatâ.*

THE AMBER PINNA. Shell narrowly fan-shaped, incurved at the sides, angularly ventricose in the middle towards the umboes, radiately flexuously ridged, ridges almost obsolete, sealed towards the margin, scales short, open; amber-red, variously clouded.

Hab. Moluccas.

This very characteristic species, narrowly incurved at the sides, is of an elegant contour, and of a peculiar

clouded amber-red colour. The scales also are curiously short and widely open.

Species 26. (Mus. Cuming.)

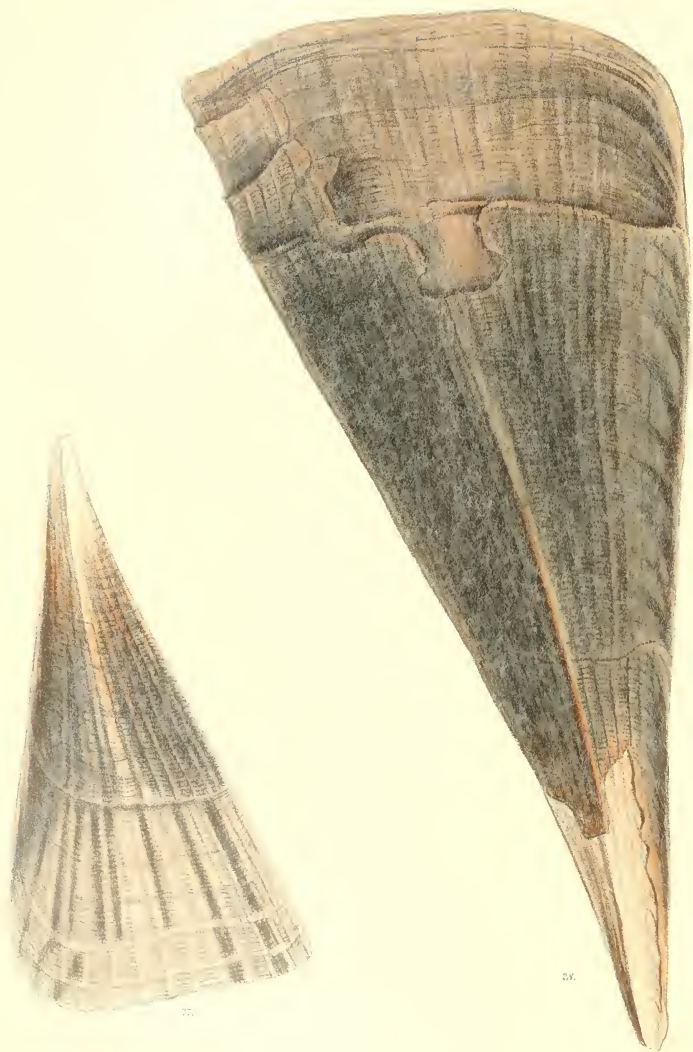
PINNA ZEBUENSIS. *Pinn. testâ elongato-trigonâ, subflabelliformi, tenui, pellucido-corneâ, versus umbones medio acutè angulatâ, deinde liratâ, liris plus minus obsoletis, muticis, undique obscurè nodulatis.*

THE ZEBU PINNA. Shell elongately triangular, rather fan-shaped, thin, transparent-horny, sharply angular in the middle towards the umboes, then ridged, ridges more or less obsolete, smooth, everywhere obscurely noduled.

Hab. Island of Zebu, Philippines; Cuming.

An elegant species of light transparent substance, sculptured throughout with faint nodules in the place of scales.

May, 1858.



Pinna (22)

Pinna (23)

P I N N A.

PLATE XV.

Species 27. (Fig. 27, 28, Mus. Cuming.)

PINNA FUMATA. *Pinn. testā elongato-trigona, radialim lirata, liris tenuibus, laevibus, subflexuosis, interstitiis concavis, lineis concentricis dense decussatis, latere antico subrugoso; livido-cinerea, olivaceo-nigricante fumata.*

THE SMOKY PINNA. Shell elongately triangular, radiately ridged, ridges thin, smooth, rather flexuous, interstices concave, densely crossed with concentric lines,

anterior side rather rugose. livid-ash, smoked with olive-black.

HANLEY, Pro. Zool. Soc. 1858.

Hab. San Nicolas, Island of Zebu, Philippines.

The specific peculiarities of this species are very distinct, the radiating ridges being slight and rather flexuous, with the interstices closely beset with concentric striae. In colour it has a characteristic smoky hue.

May, 1858.



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PINNA.

PLATE XVI.

Species 29. (Mus. Cuming.)

PINNA CUMINGII. *Pinna testâ subquadrato-flobellatâ, cornâ, obusâ, ventricosâ, radiatim costatâ, costis amplis, rotundatis, densè squamosis, squamis late inflatis, interdum globosis, interstitiis serratis; livido-olivaceâ.*

CUMING'S PINNA. Shell somewhat squarely fan-shaped, horny, stout, ventricose, radiately ribbed, ribs large, rounded, densely scaled, scales broadly inflated, sometimes globose, interstices serrated; livid-olive.

HANLEY. *Proc. Zool. Soc.* 1858.

Hab. Australia.

This fine shell is remarkable for its densely-set scales, which are peculiarly broadly inflated, and near the margin almost globose

Species 30. (Mus. Cuming.)

PINNA SEMICOSTATA. *Pinna testâ trigonâ, prope umbones acutè ventricosâ, albicante-cornâ, fasciis rufescente-fasciis interdum radiatâ, tenuicostatâ, liris squamis parvis patulis obsitis, latere antico mutico.*

THE HALF-RIBBED PINNA. Shell triangular, sharply ventricose near the umboes, whitish-horny, sometimes rayed with reddish-brown bands, finely ribbed, ribs beset with small open scales, anterior side smooth.

Hab. Philippine Islands; Cuming.

A light silvery horny species of an unusually abrupt triangular form, sometimes rayed with light brown bands, beset with scales, which are short and open.

May, 1858.



37.

38.

PINNA.

PLATE XVII.

Species 31. (Mus. Cuming.)

PINNA MADIDA. *Pinn. testâ obliquè trigonâ, subangustâ, ad latera incurvâ, versus umbones acutè elevatâ, tenuiculâ, densè concentricè lamellatâ, lamellis appressis, subobsoletis, radiatim obscurè undato-liratâ; livido-cinereâ, radiis faveo-nigrescentibus interruptis.*

THE SODDEN PINNA. Shell obliquely triangular, rather narrow, incurved at the sides, sharply raised towards the umbones, rather thin, densely concentrically lamellated, lamellæ appressed, rather obsolete, radiately obscurely wave-ridged; livid-ash, with interrupted smoky-black rays.

Hab. Port Essington, New Holland.

The concentric lamellæ of this species do not appear to be analogous to the scales which predominate in this genus, but are an unusual development of the layers of growth.

Species 32. (Mus. Cuming.)

PINNA SUBVIRIDIS. *Pinn. testâ trigono-fabellatâ, marginè postico incurvo, antico rotundato, radiatim costatâ, costis squaratis, squamis grandibus, recurvis, subtubulosis, costarum interstitiis latè concavis, latere antico conspicuè concentricè corrugato; olivaceo-ciridi, subpellucidâ.*

THE GREENISH PINNA. Shell triangularly fan-shaped, posterior margin incurved, anterior rounded, radiately ribbed, ribs scated, scales large, recurved, somewhat tubular, interstices between the ribs broadly concave, anterior side conspicuously concentrically wrinkled; olive-green, rather transparent.

Hab. South Carolina.

A fine semitransparent olive-green species, boldly ribbed and scaled, with the anterior side closely concentrically wrinkled.



37.

38.

Pinna, Pl. XVIII.

Pinna, Pl. XVIII.

PINNA.

PLATE XVIII.

Species 32. (Mus. Cuming.)

PINNA MUTICA. *Pinn. testā elongato-trigonā, subobliquā, lævigatā, radiatim undato-liratā, liris paucis, anticā plus minus obsoletis; rufescente, fumeo-fusco tinctā.*

THE SMOOTH PINNA. Shell elongately triangular, rather oblique, smooth, radiately wave-ridged, ridges few, anteriorly more or less obsolete, reddish, tinged with smoky-brown.

Hab. Island of Negros, Philippines; Cuming.

A smooth, dingy-red species, rayed with ridges, which are rather distant, and towards the umbones are regular, but about the middle of the shell they become waved, and anteriorly altogether disappear.

Species 34. (Mus. Cuming.)

PINNA MENKEI *Pinn. testā subtrigonā, curvato-flabellata, margine postico valdè incurvo, radiatim liratā, liris confertis, subrudibus, undatis, anticā irregulariter rugosā; rufescente-cinereā, fumeo-nigrescente tinctā.*

MENKE'S PINNA. Shell somewhat triangular, curved-fan-shaped, posterior margin much incurved, radiately ridged, ridges close-set, somewhat rude, waved, anteriorly irregularly rugose; reddish-ash, tinged with smoky-black.

HANLEY, Pro. Zool. Soc. 1858.

Hab. — ?

Chiefly distinguished by its curved form and close-set wave-ridged sculpture.

June, 1858.



PINNA.

PLATE XIX.

Species 35. (Mus. Cuming.)

PINNA TRUNCATA. *Pinna testâ rudè flabellatâ, subventricosâ, tenui lîvidâ-olivaceâ, semipellucidâ, radiatim liratâ liris subangustis, regularibus, interstitiis concavis, liris autem tenuioribus, margine postico squamato.*

THE TRUNCATED PINNA. Shell rudely fan-shaped, rather ventricose, thin, livid-olive, semitransparent, radiately ridged, ridges rather narrow, regular, interstices concave, anterior ridges thinner, posterior edge scaled.

PHILIPPI, *Enum. Moll.* vol. ii. p. 54, pl. 16. f. 1.
Hab. Mediterranean.

A thin, semitransparent, olive shell, sculptured regularly throughout with narrow ridges, which are thinner on the anterior side.

Species 36. (Mus. Cuming.)

PINNA VEXILLUM. *Pinna testâ trigono-flabellate, medio subventricosâ, radiatim liratâ, liris parvis, valdè irregularibus, irregulariter auricula-squamatis, latere antico promiscuè rugoso-striato; nigrâ, ceraso marginis ferruginâ.*

THE FLAG PINNA. Shell triangularly fan-shaped, somewhat ventricose in the middle, radiately ridged, ridges small, very irregular, irregularly prickly-scaled, anterior side promiscuously rugosely striated; black, rusty towards the edges.

BORN, *Mus. Vindobonensis*, pl. 7. f. 5.

Hab. Amboyna.

A black, rusty-edged shell, ridged and prickly-scaled with singular irregularity.

June, 1858.



Pinna, Pl. XV.

Pinna, Pl. XV.

PINNA.

PLATE XX.

Species 37. (Fig. 57, 58, Mus. Cuming.)

PINNA ISOLYPTA. *Pinna elongato-trigonâ, posticè incurvâ, versus umbones medio angulato-elevatâ, et utriusque liratâ, levigatâ, plus minus pellucidâ, minutissimè concentricè striatâ, livido-cinereâ, versus umbones plus minus cividè olivaceo-flavescente funco-fusco aut lineâ aut undato-radiatâ.*

THE CARVED PINNA. Shell elongately triangular, incurved posteriorly, angularly raised in the middle and ridged on each side towards the umboes, smooth, more or less transparent, very minutely concentri-

cally striated; livid-ash, more or less bright olive-yellow towards the umboes, stained or wave-rayed with smoky-brown.

HANLEY, Pro. Zool. Soc. 1858.

Hab. Amboyna.

A very characteristic species, allied to *P. fumata*. In the young specimen, it is a delicate translucent texture, coloured towards the umboes with a bright olivaceous amber, and the peculiar smoky-brown which is not uncommon to this genus is disposed in gracefully waved rays.

June, 1858.



P I N N A .

PLATE XXI.

Species 39. (Mus. Cuming.)

PINNA PENNA. *Pinna, testâ oblongo-trigona, tenui, densè lirulâ, liris squamis minutis densissimè obstitis, latere antico subrugoso-corrugato; olivaceâ, versus umbones purpurascente-rosâ.*

THE LITTLE WING PINNA. Shell oblong-triangular, thin, densely ridged, ridges very thickly set with minute scales, anterior side somewhat roughly wrinkled; olive, purple-red towards the umbones.

Hab. Philippine Islands; Cuming.

The shell here figured is probably in a young state, but the sculpture is too characteristic to allow of its being excluded from the monograph.

Species 40. (Mus. Cuming.)

PINNA DELTODES. *Pinna, testâ latè trigono-flabello, rudè planatâ, radiatum costatâ, costis irregularibus, fræ obsolete; rubido-fuscâ, ferruginâ.*

THE DELTOID PINNA. Shell broadly triangularly fan-shaped, rudely flattened, radiately ribbed, ribs irregular, almost obsolete; reddish-brown, rusty.

MENKE, Moll. Nov. Holl. p. 37.

Hab. Near Victoria River, west coast of New Holland.

A shell of very rough peculiarly flattened structure, broadly triangular, characterized by an obsolete radiation of irregular tumid ribs.



Pinna (L.)

Pinna (L.)

P I N N A .

PLATE XXII.

Species 41. (Mus. Cuming.)

PINNA DIIRO-PURPUREA. *Pinn. testâ trigono-folio-lirata, subobliquâ, radiatim lirata, liris brevis, regularibus, latere antico mutico; atro-purpureâ.*

THE DARK-PURPLE PINNA. Shell triangularly fan-shaped, rather oblique, radiately ridged, ridges smooth, regular, anterior side not ridged; dark purple.

SOWERBY, Tankerville Catalogue, Appendix, p. 5. no. 531 a.

Loc. Amboyna.

This species is well characterized by the peculiar regularity of its ridged sculpture, and by its dark purple colouring.

Species 42. (Mus. Cuming.)

PINNA PECTINATA. *Pinn. testâ trigonâ, subventricosâ, radiatim lirata, liris subcontortis, sparsim squamatis, latere antico rugoso et muricato-squamoso; semipellucido-olivaceâ.*

THE PECTINATED PINNA. Shell triangular, rather ventricose, radiately ridged, ridges somewhat twisted, sparingly squamate, anterior side rough and prickly scaled; semitransparent-olive.

LINNEUS, Syst. Nat. p. 1160.

Pinna inflata, Chemnitz.

Hab. Britain.

In many examples of this species the anterior side is curiously blistered. The shell is rather light and ventricose, and of somewhat irregular growth.



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44

P I N N A .

PLATE XXIII.

Species 43. (Mus. Cuming.)

PINNA SERRA. *Pinna testâ subquadrato-flabellatâ, tenui, ventricosâ, radiatim liratâ, liris tenuibus, irregularibus, densè squamatis, squamis parvis, brevibus, marginè postico squamis grandioribus densè serrato, latere antico tumidiusculo, peculiariter minutè squamulo-reticulato; pellucido-olivaceâ.*

THE SAW PINNA. Shell somewhat squarely fan-shaped, thin, ventricose, radiately ridged, ridges thin, irregular, densely scaled, scales small, short, posterior edge densely serrated with larger scales, anterior side rather swollen, peculiarly minutely scale-reticulated; transparent-olive.

Hab. Moreton Bay.

A light transparent-olive shell somewhat irregularly sculptured with small prickly scales, having the posterior

edge regularly closely set throughout with scales of a larger size.

Species 44. (Mus. Cuming.)

PINNA VESPERTINA. *Pinna testâ elongato-trigona, in latera subincurvâ, prope umbones liratâ, deinde locogalâ; olivaceo-cinereâ, radiis fumeo-fuscis et flavoescensibus ornatâ.*

THE SUNBEAM PINNA. Shell elongately triangular, rather incurved at the sides, ridged towards the umbones, then smooth; olive-ash, ornamented with rays of smoky-brown and yellow.

Hab. ———?

A beautifully-coloured species, partaking of the characters of *P. fanata* and *P. euglypta*.

June, 1858.



60

Pinna (Gastropoda) sp.



56

Pinna (Gastropoda) sp.

PINNA.

PLATE XXIV.

Species 45. (Mus. Cuming.)

PINNA VIEGATA. *Pinna* *testis oblongo-trigona, crans*
subsonus medio angulata radiata levata, liris prope
umbones prominentibus, repetitis, fide interruptis,
alere antico subcorrugato, aereos sordide foveo-
losos.

THE STRIPED PINNA. Shell oblong-triangular, angled in the middle towards the umbones; radiately ridged, ridges near the umbones prominent and regular, then interrupted, anterior side somewhat wrinkled, inner side, dull smoky-brown.

MENKE, Moll. Nov. Holl. p. 36.

Hab. Island of Negros: Cuming

A dark dingy species, chiefly distinguished by the interrupted character of the radiating ridges.

Species 46. (Mus. Cuming.)

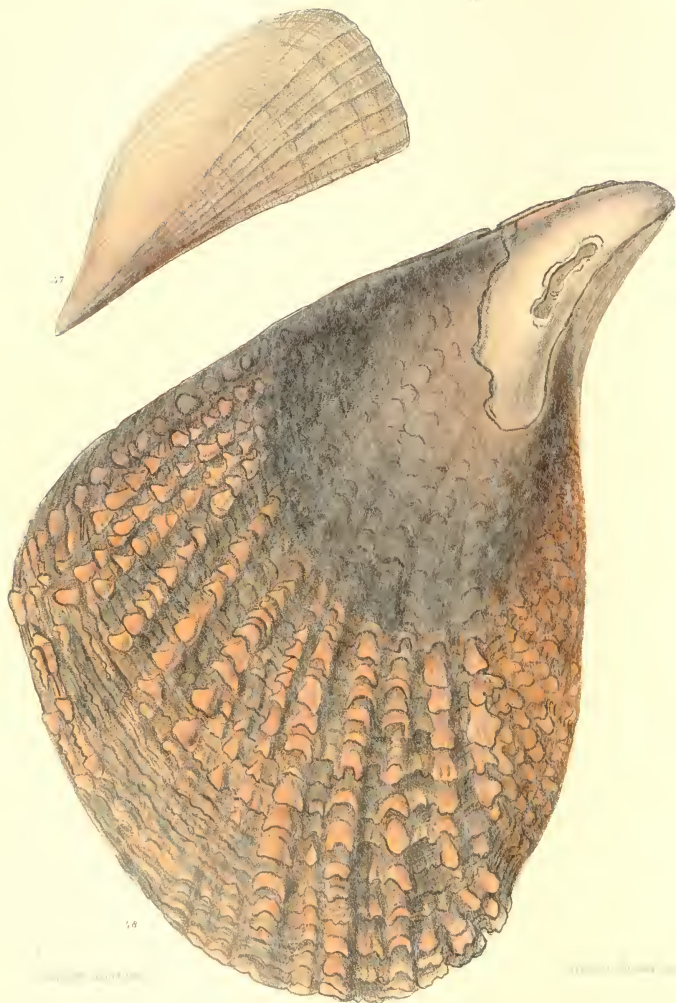
PINNA ATTENUATA. *Pinna* *testis elongato-fabellatâ, la-*
tere postico radialim costato, antico concentricè plicato-
corrugato, versus extremitatem interdum pauci-squa-
mato; flavicante-olivaceâ.

THE ATTENUATED PINNA. Shell elongately fan-shaped, posterior side radiately ribbed, anterior concentrically plicately wrinkled, sometimes sparsely scaled towards the extremity; yellowish-olive.

Hab. Moluccas.

There is no indication of scales in this species, except towards the anterior extremity; and that is not always the case.

June, 1858.



P I N N A .

PLATE XXV.

Species 47. (Mus. Cuming.)

PINNA JAPONICA. *Pinn. testâ salter, semi-flava testâ, tenui, lateri postico olivaceo-cinereo, latero postico collatum laticâ tenui subirregularibus, antice concentricè subtiliter rugosâ, utriusque postico sparsim squamato.*

THE JAPAN PINNA. Shell somewhat triangularly fan-shaped, thin, smooth, olive-ash, posterior side radiately ridged, ridges rather irregular, anterior side concentrically finely rugose, posterior margin sparsely scaled.

HANLEY. Pro. Zool. Soc. 1858.

Hab. Japan.

This has very much the appearance of a young shell. It is of a semitransparent horny substance, distinctly rayed with flattened ridges on the posterior side, and faintly concentrically rugose on the anterior.

Species 48. (Mus. Cuming.)

PINNA TUBERCULOSA. *Pinn. testâ subrotundato-trigona, fusco-nigricante, squamulis pallidioribus obsolete subradiatâ, squamulis foliaceis, brevibus, posticè incurvis, fornicatis, tubercula simulantibus.*

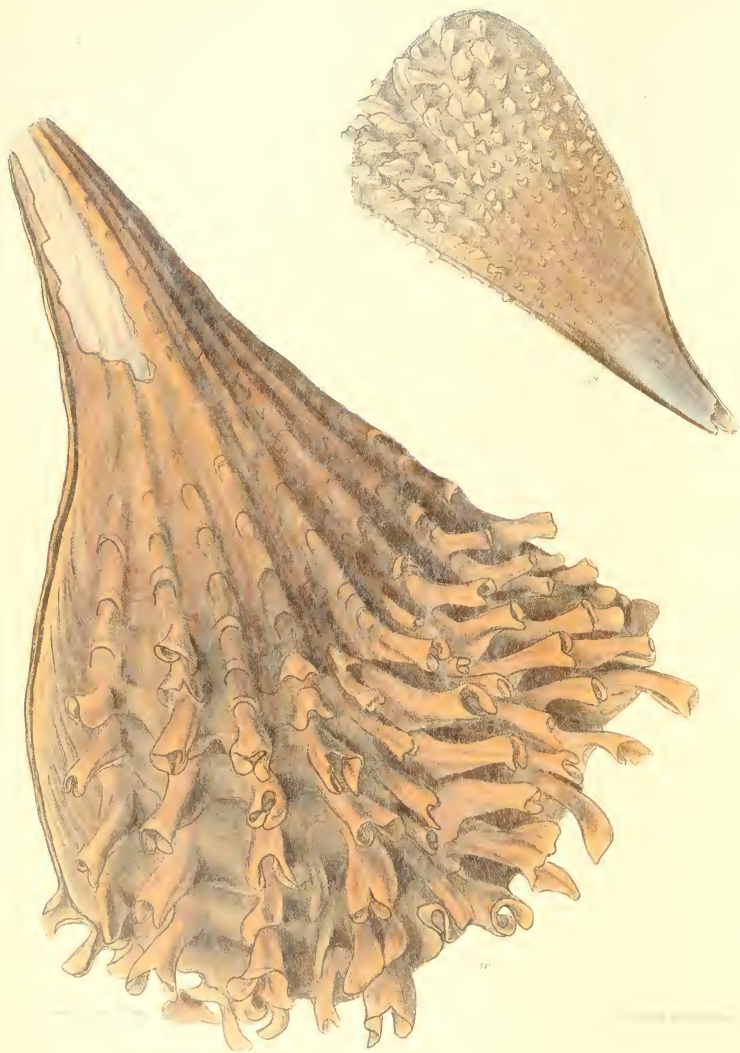
THE TUBERCLED PINNA. Shell somewhat rotundately triangular, fuscous-black, obsolete rayed with scales of a paler colour, scales foliaceous, short, posteriorly curved inwards, vaulted, resembling tubercles.

SOWERBY, Pro. Zool. Soc. 1835, p. 84.

Hab. Panama (obtained from muddy banks); Cuming.

Chiefly distinguished by the peculiarity of its scales, which are short and vaulted, extremely irregular, and of a yellowish-white hue upon a rusty-black ground.

August, 1858.



P I N N A .

PLATE XXVI.

Species 49. (Mus. Cuming.)

PINNA D'ORRIGNYI. *Pinna testâ subangustâ trigonâ, ventricosâ, pellucido-corneâ, radiatâ squamulâ, squamis cæcis marginâ spatulatis, prominentibus, aurâ tortuosis.*

D'ORRIGNY'S PINNA. Shell somewhat narrowly triangular, ventricose, transparent-horny, radiately scaled, scales towards the margin spatulate prominent, variously twisted.

HANLEY, *Proc. Zool. Soc.* 1853.

Hab. West Indies.

The scales of this species are characteristic. They become gradually enlarged towards the margin, spatulate and variously twisted, first on one side, then on the other.

Species 50. (Mus. Cuming.)

PINNA RUGOSA. *Pinna testâ magnâ, radiâ trigonâ, versus umbones contractâ, longitudinaliter sâsse radiatâ costatâ, costis versus marginem squamiferis, squamis magnis, elongatis, irregularibus, subrecurvis, foliaceo-tubulosis.*

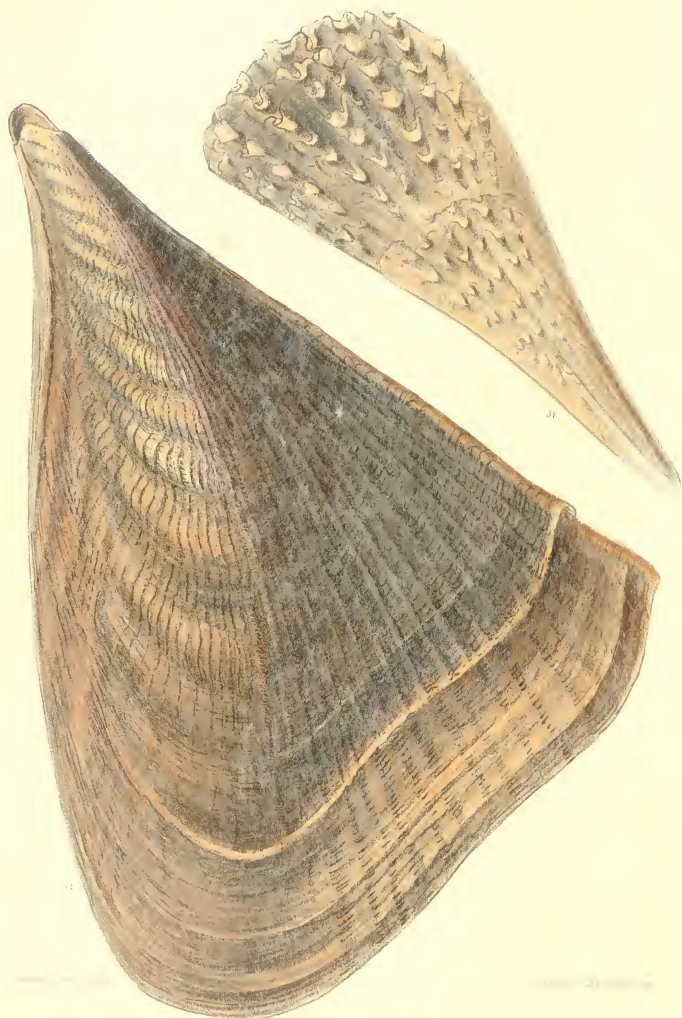
THE ROUGH PINNA. Shell large, rude, triangular, contracted towards the umbones, longitudinally, obtusely radiately ribbed, ribs full of scales towards the margin, scales large, elongated, irregular, somewhat recurved, foliaceous, tubular.

SOWERBY, *Proc. Zool. Soc.* 1835, p. 84.

Hab. Isle of Rey, Bay of Panama (from sand-banks). Cuming.

This interesting species, remarkable for the bold, foliaceous, tubular growth of its scales, is sometimes a foot and a half in length.

August, 1858.



PINNA.

PLATE XXVII.

Species 51. (Mus. Cuming.)

PINNA ANGUSTANA. *Pinn. testâ angusto-cuneatâ, cornéâ, purpureo-nigricante radiatâ, versus umbones medio angulatâ, squamiferâ, squamis brevibus, undatis.*

THE NARROWED PINNA. Shell narrowly wedge-shaped, horny, rayed with purple-black, angled in the middle towards the umboes, scaled, scales short, waved.

LAMARCK, Anim. sans vert. vol. vii. p. 62.

Hab. Moluccas.

The scales of this species are short, characterized by a transversely waved form of growth.

Species 52. (Mus. Cuming.)

PINNA STRANGEI. *Pinn. testâ triangulâ, latè flabellatâ,*

subirregulari, livido-nigrâ, purpureo tinctâ, radiatâ liratâ, liris numerosis, subacutis, versus marginem plus minus obsoletis, latere antico ventricoso, rugoso. latè validè plicato-corrugato.

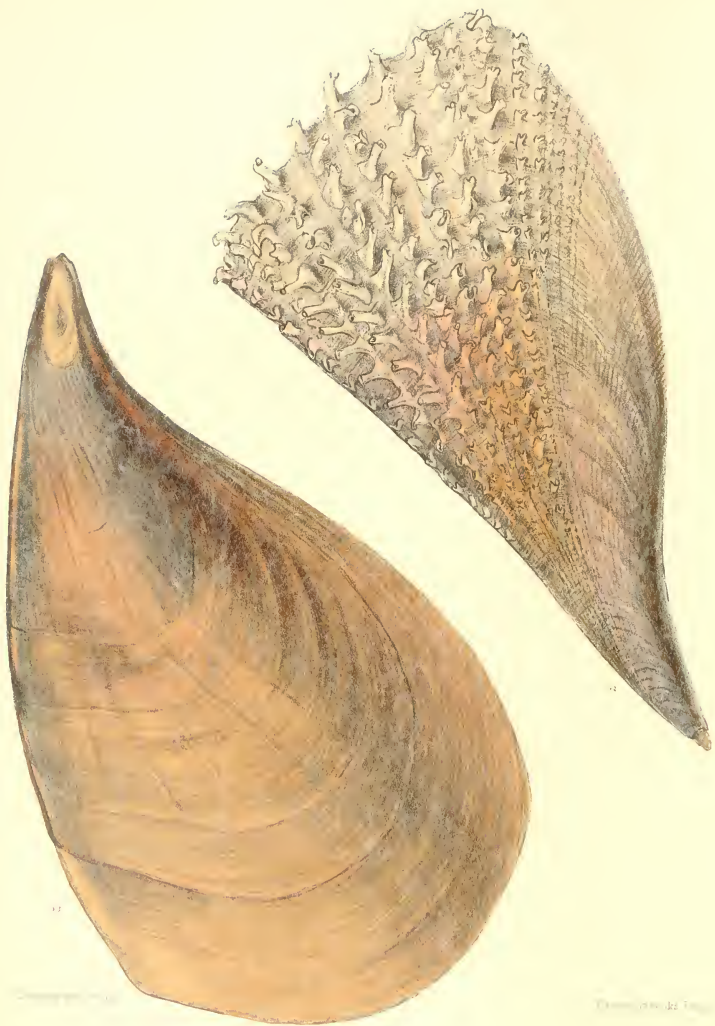
STRANGE'S PINNA. Shell triangular, broadly fan-shaped, somewhat irregular, livid-black, tinged with purple, radiately ridged, ridges numerous, rather sharp, more or less obsolete towards the margin, anterior side ventricose, rough, broadly, strongly, plicately wrinkled.

HANLEY, Pro. Zool. Soc. 1858.

Hab. Moreton Bay.

A bold characteristic species, of a broad, unceath, triangular, fan-like growth, rayed with narrow and rather sharp ridges. The anterior side of the shell is wrinkled with strong broad folds.

August, 1858.



P I N N A .

PLATE XXVIII.

Species 52. (Mus. Cuming.)

PINNA RAMULOSA. *Pinn. testē trigonā, margine postico recto, antico flexuoso-rotundato, tenui, semipellucido-corneo, radiata lirata, liris conspicuè squamatis, squamis tubulosis, acutè erectis, irregularibus, latere antico mutico.*

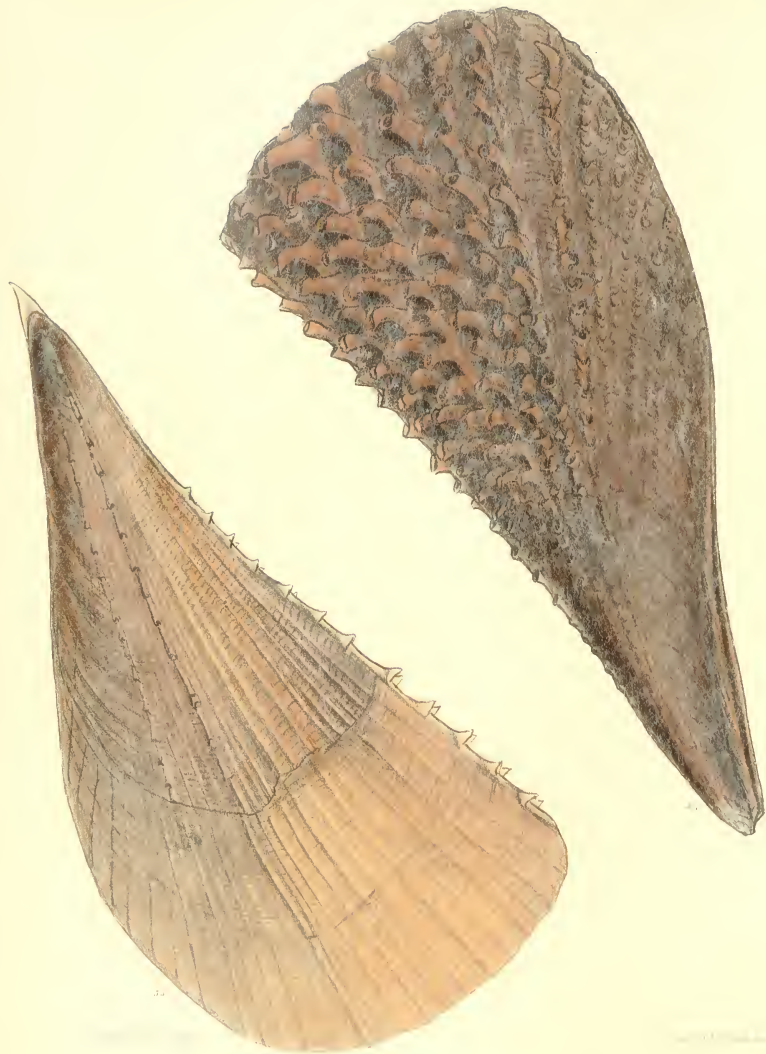
THE BRANCHED PINNA. Shell triangular, straight at the posterior edge, flexuously rounded at the anterior, thin, semitransparent-horny, radiately ridged, ridges conspicuously scaled, scales tubular, sharply erect, irregular, anterior side smooth.

Hab. West Indies.

A light, transparent-horny shell, profusely beset with erect, spouted scales, variously directed.

Fig. 53. (Mus. Cuming.)

The shell here figured, *Pinna ingens* of Pennant, Brit. Zool. vol. iv. p. 115, and Lamarck, Anim. sans vert. vol. vii. p. 66, proves to be a smooth state of the British *P. pectinata*, and presents a remarkable instance of variation in growth. It is of a dull, nebulous, horny colour, without a vestige of the scales which characterize the type of the species; it has, however, the radiating posterior ridges. It appears to be uniformly of large size, and is more rounded.



PINNA.

PLATE XXIX.

Species 54. (Mus. Cuming.)

PINNA MAURA. *Pinna* *costis* *oblonga*, *tubulata*, *foveo-angulata*, *olivaceo-tincta*, *longitudinaliter radiatim costata*, *costis* *parvis*, *obtusis*, *subobliteratis*, *posteri* *spinescentibus*, *spinae* *foricatis*, *tubulosae*, *subserreis*, *anteriori* *subnudae*.

THE MAJOR PINNA. Shell oblong, swollen, brown-black, tinged with olive, longitudinally radiately ribbed, ribs small, obtuse, somewhat obliterated, posteriorly full of scales, scales arched, tubular, somewhat recurved, anteriorly nearly smooth.

SOWERBY, Pro. Zool. Soc. 1835, p. 84.

Hab. Panama (from muddy banks); Cuming.

This shell is of a peculiar bistre-brown colour, changing into dark greenish-olive, and the spines are rather close-set and of unusually regular, recurved, tubular growth.

Fig. 55. (Mus. Cuming.)

The shell here figured is an accidental repetition of the spined variety of *P. Chenuitzi* represented at Plate 1. Fig. 1 a.



PINNA.

PLATE XXX.

Species 56. (Mus. Cuming.)

PINNA REGIA. *Pinna testâ oblongo-trigona, lateribus subincurvis, cornâ, fumeo-purpureo profusè nebulosâ, obsolete latè costatâ, costis superficialibus, squamis brevissimis perparcis asperatis.*

THE ROYAL PINNA. Shell oblong-triangular, sides slightly incurved, horny, profusely clouded with smoky-purple, obsolete broadly ribbed, ribs superficial, roughened with a few very short scales.

HANLEY, Pro. Zool. Soc. 1858.

Hab. Anaboyna.

Of a glossy, horny substance, richly mottled with smoky-purple, and roughened with extremely short scales.

Species 57. (Mus. Cuming.)

PINNA NOBILIS. *Pinna testâ trigono-fabelliformi, semi-pellucido-rufescente, versus umbones olivaceo-cinereâ, radiatum costatâ et densè echinato-squamosâ, subtabulosis, erecto-recurreis, squamis variè divergentibus, lutescentibus.*

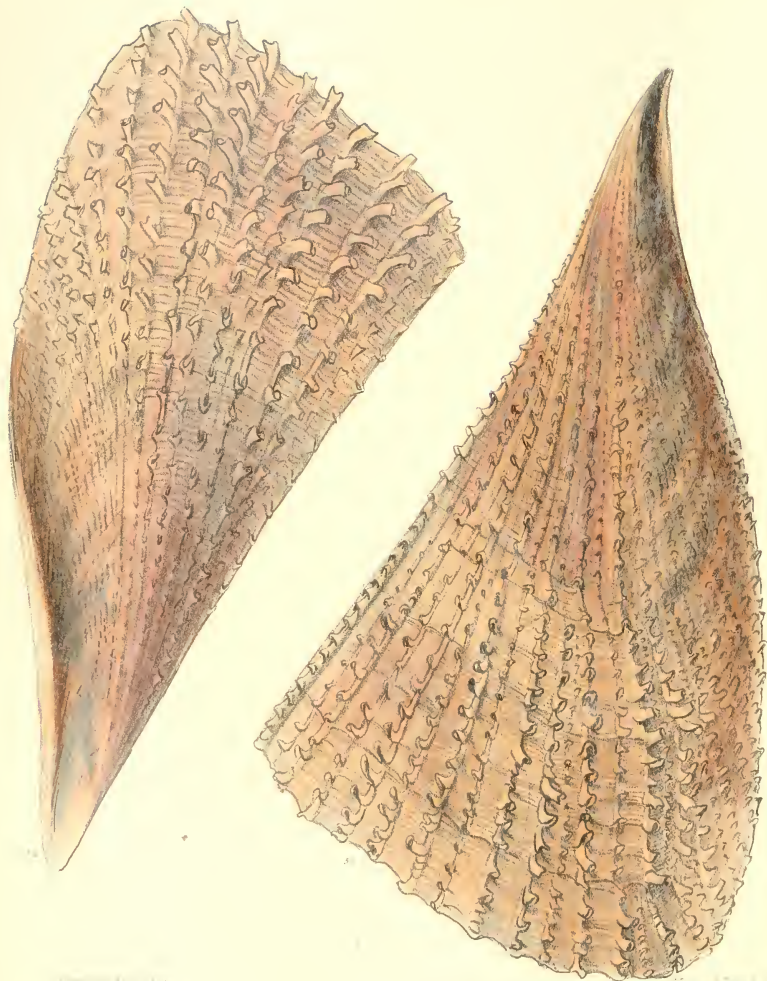
THE NOBLE PINNA. Shell triangularly fan-shaped, semi-transparent reddish, olive-ash towards the umbones, radiately ribbed and densely prickly-scaled, somewhat tubular, erectly recurved, scales variously diverging; yellowish.

LINNEUS, Syst. Nat. p. 1160.

Hab. Adriatic.

Distinguished by its very dense armature of diverging tubular scales, of a yellowish colour upon a transparent reddish ground.

August, 1858.



Pinna (L.) L.

Pinna (L.) L.

PINNA.

PLATE XXXI.

Species 57. (Mns. Cuming.)

PINNA LANCEOLATA. *Pinna, testâ sublanceolato-fabelliformi, refescente-olivaceâ, medio et posticè radiatum costellatâ, anticè ferè nuda, costellis squamatis, squamis regularibus, subbulosis, recurvis.*

THE LANCEOLATE PINNA. Shell lanceolately fan-shaped, reddish-olive, radiately ribbed in the middle and on the posterior side, almost smooth on the anterior, ribs scaled, scales regular, somewhat tubular, recurved.

SOWERBY, Pro. Zool. Soc. 1835 p. 84.

Hab. Near Puerto Potrero (dredged from sandy mud, at a depth of thirteen fathoms); Cuming.

The scales of this species, of a recurved tubular form, are set with somewhat more than usual regularity, but on the anterior side of the shell they almost disappear.

Species 59. (Mns. Cuming.)

PINNA ASSIMILIS. *Pinna, testâ trigono-fabellatâ, anticè tumidâ, subrotundatâ, cinereo-cornâ, undique radiatum liratâ, liris profusè squamatis, squamis peculiariter irregularibus.*

THE ALLIED PINNA. Shell triangularly fan-shaped, anteriorly swollen and somewhat rounded, ash-horny, everywhere rayed with ridges, ridges profusely scaled, scales peculiarly irregular.

HANLEY, Pro. Zool. Soc. 1858.

Hab. Raine's Island, Torres Straits; Lieut. Ince.

A dull ash-horny species, characterized by a singular irregularity in the development of the scales, with which it is rayed throughout.

August, 1858.



L. ...

...

PINNA.

PLATE XXXII.

Species 60. (Fig. 60 and 61, Mus. Cuming.)

PINNA MYSTRIX. *Pinna testâ latè caneforni, tenuiculâ, inflatâ, posticè subquadratâ, corneâ, livido-purpurascens et nigro-fusco variegatâ, multicostatâ, costis parvis, squamatis, squamis subangustâ tubulosis, erectis, irregularibus, costarum interstitiis latis, plano-concavis, lamellis incrementi subconspicuis.*

THE PORCUPINE PINNA. Shell broadly wedge-shaped, rather thin, inflated, posteriorly somewhat square, horny, variegated with livid-purple and black-brown,

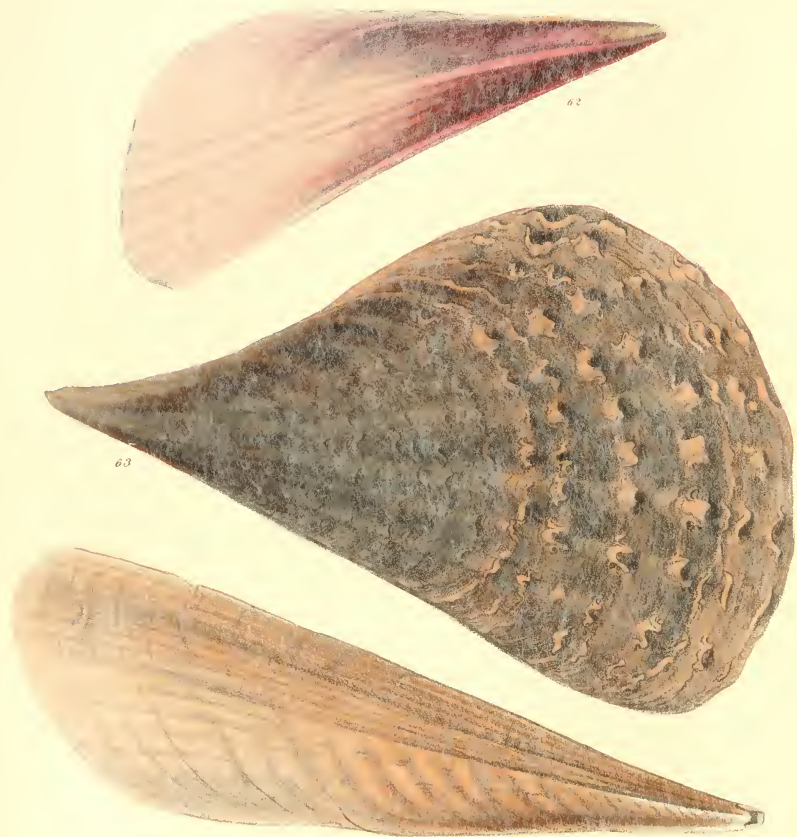
many-ribbed, ribs small, squamate, scales rather slenderly tubular, erect, irregular, interstices between the ribs flatly concave, with the lamellae of growth rather conspicuous.

HANLEY, *Proc. Zool. Soc.* 1858, p. 226.

Hab. Amboyna.

This very beautiful species, which I had regarded as a spined variety of *P. Strangei*, has been described by Mr. Hanley as a distinct species; and I think rightly so.

February, 1859.



P I N N A .

PLATE XXXIII.

Species 62. (Mus. Cuming.)

PINNA SANGUINOLENTA. *Pinna testâ obliquè trigonâ, subangustâ, levigatâ, cornes, obscure costatâ, anticè subcorrugatâ; pallidâ, versus umbones cupreo-sanguineo tinctâ.*

THE BLOOD-STAINED PINNA. Shell obliquely triangular, rather narrow, smooth, horny, obsolete ribbed, anteriorly faintly wrinkled; pale, stained towards the umbones with coppery blood-red.

Hab. —?

Chiefly distinguished by its blood-stained colouring, which has a peculiar metallic hue.

Species 63. (Mus. Cuming.)

PINNA FIMBRIATULA. *Pinna testâ latè rhombiformi, marginè rotundatâ, radiatim costatâ, costis amplis autem obscuris, subdistantibus, paulo unctis, squamulis, squamis atrinque peculiariter fimbriatulis; lutescente-cornuâ, livido-olivaceâ, interdum nigrescente tinctâ.*

THE FURBLOWED PINNA. Shell broadly fan-shaped, rounded at the margin, radiately ribbed, ribs large but obscure, rather distant, a little waved, scaled, scales peculiarly furbelowed on each side; yellowish-horny, stained with livid-olive, sometimes blackish.

Hab. Japan.

The scales of this species present the peculiarity of being furbelowed with a recurved curl on either side.

Species 64. (Mus. Cuming.)

PINNA STUTCHBURI. *Pinna testâ elongato-trigonâ, perangustâ, medio angulato-carinatâ, obscure radiatim costatâ, levigatâ, anticè subampliter obliquè plicato-corrugatâ; lutescente-spadiceâ, versus umbones obscure olivaceo maculatâ.*

STUTCHBURY'S PINNA. Shell elongately triangular, very narrow, angularly keeled down the middle, obscurely radiately ribbed, smooth, anteriorly rather largely obliquely plicately wrinkled; yellowish-fawn, sometimes obscurely spotted with olive.

Hab. Moreton Bay, Australia; Stutchbury.

A characteristic Australian species, of narrow angularly keeled growth, broadly plicately wrinkled down the anterior slope. I name it in memory of the collector, Mr. Henry Stutchbury, a resident of the town of Bristol, who has just departed this life, after spending many years in the successful pursuit and study of natural history.

February, 1859.



P I N N A .

PLATE XXXIV.

Species 65. (Mus. Brit.)

PINNA SERRATA. *Pinn. testā oblongo-flabelliformi, margine subquadrata, pelliculo-cornuā aut vitreā, radiatim lirata, liris numerosissimis, densè minutè squamatis, anticè decussatim corrugato-striatā, margine dorsali acutè serrato-squamato.*

THE SERRATED PINNA. Shell oblong-fan-shaped, rather square at the margin, transparent-horny or glassy, radiately ridged, ridges very numerous, densely minutely scaled, anteriorly decussately wrinkle-striated; dorsal margin sharply serrately scaled.

SOLANDER, Sowerby's Genera of Shells.

Hab. West Indies.

This little species is especially distinguished by the profusion of its serrated sculpture of minute scales.

Species 66. (Mus. Brit.)

PINNA CAROLINENSIS. *Pinn. testā oblongo-flabelliformi, margine rotundatā, solidiusculā, subinflatā, olivaceā, radiatim costatā, costis validis, subdistantibus, fortiter squamatis, squamis versus marginem tubulosis et recurvis, costarum interstitiā concavis.*

THE CAROLINA PINNA. Shell oblong-fan-shaped, rounded at the margin, rather solid, a little inflated, olive, radiately ribbed, ribs strong, rather distant, strongly scaled, scales towards the margin tubular and recurved, interstices between the ribs concave.

HANLEY, Pro. Zool. Soc. 1858, p. 225

Hab. South Carolina.

A shell of large size and rather rough growth, in which the ribs are rather distant, and armed with spines, which towards the margin are recurved and tubular.

February, 1859.

PINNA.

	Plate	Species	Plate	Species
<i>aculeato-squamosa</i> , Chemnitz	VI.	10	<i>nobilis</i> , Linnæus	XXX.
<i>alta</i> , Sowerby	VI.	11	<i>nigra</i> , Chemnitz	III.
<i>angustana</i> , Lamarck	XXVII.	51	<i>nigripina</i> , Lamarck	III.
<i>assiniulis</i> , Hanley	XXXI.	59	<i>Nuttalli</i> , Conrad	IV.
<i>atro-purpurea</i> , Sowerby	XXII.	41	<i>papyracea</i> , Chemnitz	VIII.
<i>attenuata</i> , Reeve	XXIV.	46	<i>pectinata</i> , Linnæus	XXII.
<i>bicolor</i> , Chemnitz	IX.	17	<i>peruila</i> , Chemnitz	XII.
<i>bullata</i> , Swinson	IX.	16	<i>Philippiensis</i> , Hanley	XI.
<i>Caroliensis</i> , Hanley	XXXIV.	66	<i>penna</i> , Reeve	XXI.
<i>Chemnitzii</i> , Hanley	I.	1	<i>ramulosa</i> , Reeve	XXXVIII.
<i>Cuningii</i> , Hanley	XVI.	29	<i>regia</i> , Hanley	XXX.
<i>deltodes</i> , Menke	XXI.	40	<i>rigida</i> , Dillwyn	V.
<i>dolabrata</i> , Lamarck	IX.	17	<i>rotundata</i> , Linnæus	II.
<i>D'Orbigny</i> , Hanley	XXVI.	49	<i>rudis</i> , Linnæus	X.
<i>electrica</i> , Reeve	XIV.	25	<i>rugosa</i> , Sowerby	XXVI.
<i>euglypta</i> , Hanley	XX.	37	<i>Rumphii</i> , Hanley	V.
<i>fimbriatula</i>	XXXIII.	63	<i>sacata</i> , Linnæus	IV.
<i>flabellum</i> , Lamarck	X.	18	<i>sanguinolenta</i> , Reeve	XXXIII.
<i>fumata</i> , Hanley	XV.	27	<i>seminuda</i> , Lamarck	II.
<i>Gouldii</i> , Hanley	XI.	21	<i>semicostata</i> , Conrad	XVI.
<i>Hanleyi</i> , Reeve	VIII.	15	<i>serra</i> , Reeve	XXIII.
<i>hand-ignobilis</i> , Chemnitz	X.	18	<i>serrata</i> , Solander	XXXIV.
<i>hystrix</i> , Hanley	XXXII.	60	<i>squamosa</i> , Gmelin	II.
<i>incurvata</i> , Chemnitz	V.	8	<i>squamifera</i> , Sowerby	VII.
<i>inflata</i> , Chemnitz	III.	5	<i>squamosissima</i> , Philippi	II.
<i>ingens</i> , Pennant	XXVIII.	53	<i>Strangei</i> , Hanley	XXXVII.
<i>Japonica</i> , Hanley	XXV.	47	<i>Stutchburii</i> , Reeve	XXXIII.
<i>lanceolata</i> , Sowerby	XXXI.	58	<i>subviridis</i> , Reeve	XVII.
<i>lurida</i> , Reeve	XIII.	24	<i>truncata</i> , Philippi	XIX.
<i>madida</i> , Reeve	XVII.	31	<i>tuberculosa</i> , Sowerby	XXV.
<i>marina</i> , Chemnitz	II.	3	<i>vespertina</i> , Reeve	XXIII.
<i>Maura</i> , Sowerby	XXIX.	54	<i>vexillum</i> , Born	XIX.
<i>Menkei</i> , Hanley	XVIII.	34	<i>virgata</i> , Menke	XXIV.
<i>mutricata</i> , Linnæus	XIII.	23	<i>Zebbensis</i> , Reeve	XIV.
<i>mutica</i> , Reeve	XVIII.	33	<i>Zelænica</i> , Gray	VII.

ERRATUM.

Plate XXII. Sp. 42, *P. pectinata*, dele synonym *P. inflata*, Chemnitz.

MONOGRAPH
OF THE GENUS
P E R N A.

His well-proportioned beard made rough and rugged.
Like to the summer's corn by tempest lodged."

Shakespeare.



2.



3.



Small Shell



Small Shell

PERNA.

PLATE I.

Genus PERNA, Lamarck.

Testa glauco-alba, fibro-laminaris, subquadrata, umbonibus parvis, sæpè terciautibus et aduacis. Cardo latus, marginalis, sulcis parallelis ligamentum excipientibus. Læuena pro bysso infra carlinis extremotem posticum. Impressio muscularis obliqua, distincta.

Shell flat, fibro-laminar, nearly equi-oval, umbones small, often terminal and hooked. Hinge broad, marginal, with parallel grooves receiving the ligament. Opening for the byssus beneath the posterior extremity of the hinge. Muscular impression oblique, distinct.

The shells assembled under the head of *Perna* are characterized by a special construction of the hinge, and like the *Acicula*, they attach themselves by a tough, bristly byssus. The hinge is in the form of a broad, marginal plate cut across with regular parallel grooves, and the intermediate ridges do not interlock with each other like teeth, but press in contact, leaving the cavities between them for the reception of the ligament.

The shells of *Perna* have a strong affinity with those of *Mollus*, in respect of their winged and laminar growth, but they altogether differ in the arrangement of the hinge and byssus. They are chiefly from the Eastern seas. A few are from the West Indies and the Pacific islands.

Species 1. (Mus. Cuming.)

PERNA LOBATA. *Perna testâ subquadrata, utrinque conuero-compressa, medio longitudinaliter lobata, concentricè radè laminatâ; purpurascens-albâ.*

THE LOBED PERNA. Shell somewhat square, conuery compressed on each side, longitudinally lobed in the middle, concentrically rudely laminated; purplish-white.

Hab. —?

Of a contracted trapezoid form, with the laminae pressed into a central lobe projecting longitudinally.

Species 2. (Mus. Cuming.)

PERNA PECTINATA. *Perna testâ suborbiculari, pectinatâ, tenuiculâ, concentricè nitidè laminatâ, laminais fimbriato-squamatis, umbonibus arcuatis, aduacis; sordidè olivaceâ.*

THE PECTINATE PERNA. Shell somewhat orbicular, pectinate, rather thin, concentrically neatly laminated,

laminae fimbriately scaled, umbones arched, hooked; dull-olive.

Hab. —?

Distinguished by a neat sculpture of flattened, overlapping, concentric frills of scales.

Species 3. (Mus. Cuming.)

PERNA CUMINGII. *Perna testâ suborbiculari, latere antico basalè producto, crassiusculâ, concentricè radè laminatâ, radiatius sulcatâ, laminais subfimbriatis; violaceo-purpureâ, fusco tinctâ.*

CUMING'S PERNA. Shell somewhat orbicular, basal anterior side produced, rather thick, concentrically rudely laminated, radiately grooved, laminae slightly frilled; violet-purple, tinged with brown.

Hab. Australia.

This fine species has probably been confounded with *P. ephippium*, but it is well distinguished by its radiating grooves, which impart a frilled character to the concentric laminae.

Species 4. (Mus. Cuming.)

PERNA NUCLEUS. *Perna testâ subquadrato-ovali, concentricè laminatâ, laminais ad marginem striato-fimbriatis, umbonibus arcuatis, aduacis; sordidè olivaceâ.*

THE HARD-CRUSTED PERNA. Shell somewhat squarely ovate, concentrically laminated, laminae towards the margin striately frilled, umbones arched, hooked; dull-olive.

LAMARCK, Anim. sans vert. vol. vii. p. 78.

Hab. —?

Less fimbriated than the preceding species, with the base broader, and the umbones still more sharply hooked.

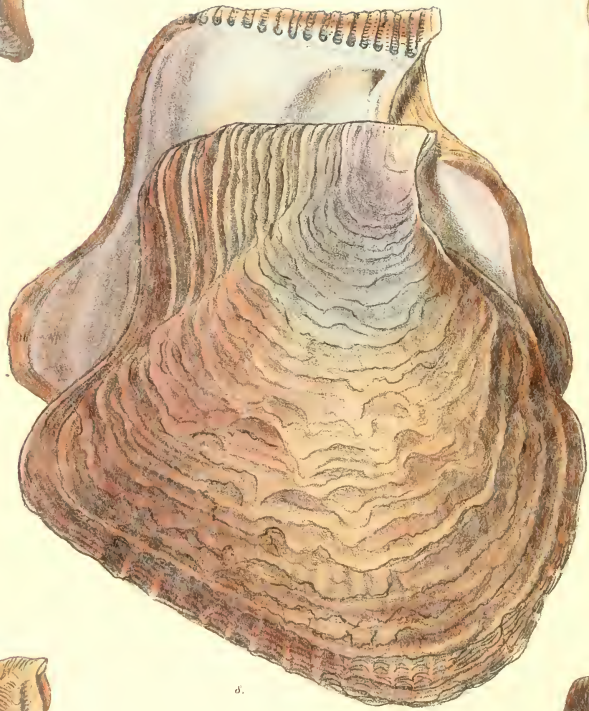
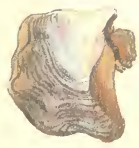
Species 5. (Mus. Cuming.)

PERNA CAUDATA. *Perna testâ obliquè ovatâ, crassiusculâ, posticè longitudinaliter lobatâ, radiatius striatâ; lutescentè-albâ, purpurascens-striatâ.*

THE TAILED PERNA. Shell obliquely ovate, rather thick, posteriorly longitudinally lobed, radiately striated; yellowish-white, tinged with purple.

Hab. —?

Of a solid radiate growth, produced obliquely into a rude, longitudinal lobe.



P E R N A .

PLATE II.

Species 6. (Mus. Cuming.)

PERNA QUADRANGULARIS. *Perna. testâ subquadratâ, rudè angulatâ, posticè concavo-impressâ, versus cardinem lævigatâ, deinde obscurè tenuè concentricè laminatâ; purpureo-nigrescente.*

THE SQUARE PERNA. Shell somewhat square, rudely angled, posteriorly concavely impressed, smooth towards the hinge, then obscurely, thinly, concentrically laminated; purple-black.

Hab. ———?

A dark-purple species, of marked quadrangular growth, conspicuously concavely impressed beneath the area of the byssus.

Species 7. (Mus. Cuming.)

PERNA LINGUEFORMIS. *Perna. testâ longitudinali, versus cardinem irregulariter concentricè laminatâ, deinde lævi; sordide albâ.*

THE TONGUE-SHAPED PERNA. Shell longitudinal, irregularly concentrically laminated towards the hinge, then smooth; dead white.

Hab. Society Islands.

Of a longitudinal flexuous tongue-shape and dead white hue.

Species 8. (Mus. Cuming.)

PERNA EPHIPIUM. *Perna. testâ subtrigono-orbiculari, planâ, compressè laminatâ, lamina ferè obsolete, laterè antico antriformi, concaviusculo; æneo-rufescente.*

THE SADDLE PERNA. Shell somewhat triangularly orbicular, flat, compressly laminated, laminae almost obsolete, anterior side ear-shaped, rather concave; coppery-red.

Ostrea ephippium, LINNÆUS, Syst. Nat. p. 1149.

Perna ephippium, LANARCK.

Hab. Honduras.

This species, which appears to be the old type of the genus, is characterized by its flat, coppery-red aspect, the laminae being compressed or caked together so as to be almost obsolete. The anterior side of the shell is, moreover, of a peculiar concave ear-shape.

Species 9. (Mus. Cuming.)

PERNA LATICOSTATA. *Perna. testâ longitudinali, flexuosa, tri-quadrilateratâ et conspicuè concentricè laminatâ, deinde lævi; sordide albâ, purpureo-nigrescente versus extremitatem sinistram.*

THE BROAD-RIBBED PERNA. Shell longitudinal, flexuous, three- or four-ribbed and conspicuously concentrically laminated, then smooth; dead white, tinged towards the extremity with purple-black.

Hab. ———?

Of a somewhat squarer longitudinally flexuous form than the preceding species, rudely rayed with three or four broad ribs.

Species 10. (Mus. Cuming.)

PERNA VITREA. *Perna. testâ subquadrato-orbiculari, tenui, lævigatâ, vix laminatâ; nitente-castaneâ.*

THE GLASSY PERNA. Shell somewhat squarely orbicular, thin, smooth, scarcely laminated; shining-chestnut. *Hab.* Red Sea.

Unlike most species of the genus, this is of comparatively thin substance, and of a shining, dark chestnut-red colour.



11.



12.



13.



14.

Woods Hole, Mass.



15.

Vincent Brooks Imp.

P E R N A .

PLATE III.

Species 11. (Mus. Cuming.)

PERNA ANOMIOTIDES. *Perna. testâ obliquè longitudinali, tenui, subopacâ, concentricè peculiariter fimbriatolaminatâ; lutescente-albâ.*

THE ANOMIA-LIKE PERNA. Shell obliquely longitudinal, thin, rather transparent, concentrically peculiarly fimbriately laminated; yellowish-white.

Hab. California.

A delicate yellowish-white semitransparent shell, in which the concentric laminae are curiously fimbriated in a blistered-like manner.

Species 12. (Mus. Cuming.)

PERNA AUSTRALICA. *Perna. testâ obliquè fâbellatâ, tenui, subpellucidâ, liris superficialiis serratis irregulariter densè radiatâ; rufescente-albâ.*

THE AUSTRALIAN PERNA. Shell obliquely fan-shaped, thin, rather transparent, densely irregularly rayed with serrated superficial ridges; reddish-white.

Hab. Australia.

Broadly obliquely fan-shaped, of thin, transparent substance, peculiarly sculptured with irregularly flexuous delicately serrated superficial ridges.

Species 13. (Mus. Cuming.)

PERNA CALIFORNICA. *Perna. testâ obliquè trigonâ vel fâbellatâ, tenuiculâ, levi; lutescente-albâ, livido-purpureo nebulatâ.*

THE CALIFORNIAN PERNA. Shell obliquely triangular or fan-shaped, rather thin, smooth; yellowish-white, clouded with livid purple.

CONRAD, Journ. Acad. Nat. Sci. Phil. vol. vii. p. 25. pl. 19. f. 13.

Hab. California; Conrad. Honduras; Dyson.

Chiefly distinguished by its *Pedum*-like form, and clouded livid-purple colouring.

Species 14. (Mus. Cuming.)

PERNA SERRATULA. *Perna. testâ trigono-orbiculari, tenui, planâ, laminiis tenuibus serratalis densè concentricè radiatâ; sordidè albâ.*

THE FINELY-SERRATED PERNA. Shell triangularly orbicular, thin, flat, densely concentrically rayed, with finely serrated laminae; dead white.

Hab. Island of St. Vincent; Guilding. Philippine Islands; Cuming.

Well characterized by the delicately serrated laminae with which the whole surface is closely sculptured.

Species 15. (Mus. Cuming.)

PERNA MARSUPIUM. *Perna. testâ orbiculari, solidiusculâ, rudè concentricè laminatâ; sordidè albâ, purpurascente tinctâ.*

THE PURSE PERNA. Shell orbicular, rather solid, rudely concentrically laminated; dead white, tinged with purple.

LAMARCK, Anim. sans vert. vol. vii. p. 77.

Hab. Philippine Islands.

Of a simply rounded form, of rude, rather solid substance, indistinctly roughly laminated.



16.



17.



18.



19.

P E R N A .

PLATE IV

Species 16. (Mus. Cuming.)

PERNA COSTELLANA. *Perna testâ elongato-fimbriatâ, radiatâ fuscato-âurâ concentricè laminatâ, lamina subrotatis, subfimbriatis, anticâ alâ, nigricante-purpureo-lividâ.*

THE FINELY-FIMBRIED PERNA. Shell elongately fan-shaped, radiately flexuously ribbed, concentrically laminated, laminae rather distant, sharp; fimbriated; dead white, tinged with dark purple.

CONRAD, Journ. Acad. Nat. Sci. Phil. vol. vii. p. 246.

Hab. Society Islands.

The laminae of this species are frilled with small serrate points.

Species 17. (Mus. Cuming.)

PERNA LINGOIDES. *Perna testâ subelongato-fimbriatâ, concentricè fimbriato-lamulatâ, lamina planatis, subrotatis; purpurascens.*

THE LIMA-LIKE PERNA. Shell somewhat elongately fan-shaped, concentrically fimbriately laminated, laminae flattened, rather obsolete; purplish.

Hab. Moluccas.

Allied to the preceding species in having the laminae festooned with small points, but differing in substance and general character.

Species 18. (Mus. Cuming.)

PERNA FIMBRIATA. *Perna testâ elongato-oblongâ, tenuiculâ, compressâ, concentricè fimbriato-squamatâ, squamis versus marginem subproductis; anticâ alatâ, alâ medio concavâ et obscure livatâ; nigricante-purpureâ.*

THE FRILLED PERNA. Shell elongately oblong, rather thin, compressed, concentrically fimbriately scaled, scales towards the margin rather produced; anteriorly winged, wing concave in the middle and obscurely ridged; blackish-purple.

Hab. Moluccas.

A thin, dark-purple shell, in which concentric frills of produced scales form rather a conspicuous character.

Species 19. (Mus. Cuming.)

PERNA PATIBULUM. *Perna testâ elongatâ, anticâ elongato-alatâ, plano-laminatâ, lamina obscuris, alâ medio serrato-sulcatâ; semipellucido-purpureâ.*

THE GIBBET PERNA. Shell elongated, anteriorly elongately winged, flatly laminated, laminae obscure, wing serrately grooved in the middle; semitransparent purple.

Hab. — ?

Chiefly distinguished by its elongately produced wing, of which the middle webbed portion is serrately grooved.



P E R N A .

PLATE V.

Species 20. (Mus. Cuming.)

PERNA RUDES. *Perna, testâ subflexuoso-elongatâ, rudè laminatâ, umboibus rostratis, purpureo-fuscâ.*

THE RUDE PERNA. Shell somewhat flexuously elongated, rudely laminated, umboes beaked, purple-brown.

Hab. — ?

Of a flexuously elongated form, composed externally of rude concentric laminae, rather barren of character.

Species 21. (Mus. Cuming.)

PERNA VULSELLA. *Perna, testâ elongato-quadratâ, linguiformai, levi, nitente, livido-fuscescente, albo radiatim lineatâ et fuscâ, umboibus parvis, adancis.*

THE VULSELLA PERNA. Shell elongately square, tongue-shaped, smooth, shining, livid-brown, radiately lined and banded with white, umboes small, hooked.

LAMARCK. *Anim. sans vert.* vol. vii. p. 78.

Hab. — ?

Distinguished by its smooth surface and white-banded painting, and by the small hooked character of the umboes.

Species 22. (Mus. Cuming.)

PERNA LEGUMEN. *Perna, testâ elongato-linguiformai, versus umboes rudè concentricè laminatâ, deinde levigatâ, irregulari; sordidè albâ.*

THE POD PERNA. Shell elongately tongue-shaped, rudely concentrically laminated towards the umboes, then smooth, irregular; dull-white.

Ostrea legumen, Gmelin, *Syst. Nat.* p. 3399.

Hab. Lord Hood's Island; Cuming.

Of a curiously elongated pinched growth, of a dead-white colour, the laminae being first arranged concentrically and afterwards irregularly blistered.

Species 23. (Mus. Cuming.)

PERNA FIMBRIATA. *Perna, testâ obliquè ovatâ, anticè latè alatâ, levigatâ, versus marginem undique fimbriatâ et subsquamatâ; intescente-albâ, versus marginem livido-purpureo lineatâ et radiatâ.*

THE FIMBRIATED PERNA. Shell obliquely ovate, anteriorly broadly winged, smooth, everywhere fimbriated and finely scaled towards the margin; yellowish-white, stained and rayed towards the margin with livid-purple.

Hab. Moluccens.

The obliquely ovate, broad-winged form of this species is peculiar, and its fimbriated sculpture is characteristic.

Species 24. (Mus. Cuming.)

PERNA ISOGNOMUM. *Perna, testâ elongatâ, plerumque subflexuosâ, depressâ, rudè laminatâ, basi anticè angustè alatâ, alâ plus minus curvatâ, posticè abruptè latè sinuatâ; purpureo-nigrâ.*

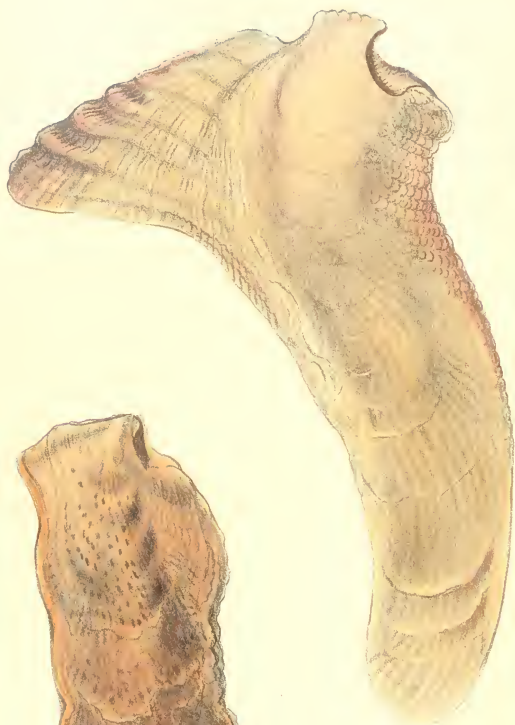
THE CARPENTER'S SQUARE PERNA. Shell elongated, generally rather flexuous, depressed, rudely laminated, base narrowly winged anteriorly, wing more or less curved, posteriorly abruptly broadly sinuated; purple-black.

Ostrea isognomum, Linnæus, *Syst. Nat.* p. 1149.

Varietates *P. fenoralis* and *canina*, Lamarck.

Hab. Philippine Islands; Cuming.

This well-known species varies in having the wing sometimes longer, with the body of the shell less elongated than in the specimen figured. Sometimes the shell is even more elongated than this, in which case the wing is almost obsolete.



26



25.



27



28

P E R N A.

PLATE VI.

Species 25. (Mus. Cuming.)

PERNA ATTENUATA. *Perna*. testâ elongatâ, rudè laminatâ, anticâ fimbriato-alatâ, versus umbones attenuatâ; purpureo-nigrâ.

THE ATTENUATED PERNA. Shell elongated, rudely laminated, anteriorly fimbriately winged, attenuated towards the umbones; purple-black.

Hab. Red Sea.

Of a narrow form, with a broad, fimbriated wing, peculiarly attenuately pressed inwards.

Species 26. (Mus. Cuming.)

PERNA VESPERTILO. *Perna*. testâ elongatâ, arcuatâ, conspicuè latè alatâ, utrinque fimbriato-sulcatâ; sordidè lutescente-albâ, ad basin subpurpurascente.

THE BAT PERNA. Shell elongated, curved, conspicuously broadly winged, fimbriately grooved on each side; dull-yellowish-white, tinged with purple at the base.

Hab. Bay of Manilla; Cuming.

The bat's-wing lobe of this species is strikingly developed. All the specimens taken by Mr. Cuming were of the same uniform dull yellowish-white colour.

Species 27. (Mus. Cuming.)

PERNA LENTIGINOSA. *Perna*. testâ elongatâ, irregulari,

tenni, subpellucido-corneâ, larigatâ, versus extremitatem laminatâ, basi angulatâ; lutescente-albâ, nitente, maculis purpureis undique lentiginosâ, ad marginem purpureo tinctâ.

THE FRECKLED PERNA. Shell elongated, irregular, thin, semitransparent-horny, smooth, laminated towards the extremity, base narrow; yellowish-white, shining, freckled throughout with purple spots, tinged with purple at the margin.

Hab. Philippine Islands; Cuming.

The freckled painting of this species is a character not observed in any other, and the narrow base is peculiar.

Species 28. (Mus. Cuming.)

PERNA SPATHULATA. *Perna*. testâ subpyriformi-ovatâ, depressiusculâ, irregulari, versus marginem rudè laminatâ; lutescente-albâ, purpureo marginatâ.

THE SPATHULATE PERNA. Shell somewhat pyriformly ovate, rather depressed, irregular, rudely laminated towards the margin; yellowish-white, edged with purple.

Hab. Island of Negros, Philippines; Cuming.

Very rudely laminated in respect of sculpture, but peculiar in form.

P E R N A.

	Plate	Species.		Plate	Species.
Anomioides, <i>Reeve</i>	III.	11	Limoides, <i>Reeve</i>	IV.	17
attenuata, <i>Reeve</i>	VI.	25	lingueformis, <i>Reeve</i>	II.	7
Australica, <i>Reeve</i>	III.	12	lobata, <i>Reeve</i>	I.	1
Californica, <i>Conrad</i>	III.	13	marsupium, <i>Lamarck</i>	III.	15
canina, <i>Lamarck</i>	V.	24	nucleus, <i>Lamarck</i>	I.	4
caudata, <i>Reeve</i>	I.	5	patibulum, <i>Reeve</i>	IV.	19
costellata, <i>Conrad</i>	IV.	16	pectinata, <i>Reeve</i>	I.	2
Cumingii, <i>Reeve</i>	I.	3	quadrangularis, <i>Reeve</i>	II.	6
ephippium (<i>Ostrea</i>), <i>Linnaeus</i>	II.	8	rudis, <i>Reeve</i>	V.	20
femoralis, <i>Lamarck</i>	V.	24	semiunda, <i>Lamarck</i>	II.	6
fimbriata, <i>Reeve</i>	IV.	18	serrata, <i>Reeve</i>	III.	14
imbricata, <i>Reeve</i>	V.	23	spathulata, <i>Reeve</i>	VI.	28
isognomum (<i>Ostrea</i>), <i>Linnaeus</i>	V.	24	vespertilio, <i>Reeve</i>	VI.	26
laticostata, <i>Reeve</i>	II.	9	vitrea, <i>Reeve</i>	II.	10
legumen (<i>Ostrea</i>), <i>Gmelin</i>	V.	22	Vulsella, <i>Lamarck</i>	V.	21
lentiginosa, <i>Reeve</i>	VI.	27			

ERRATUM.

Plate V., Species 23, for *P. fimbriata* read *P. imbricata*, *Reeve*.

MONOGRAPH

OF THE GENUS

M A L L E U S.

Fool. Canst tell how an (hammer) oyster makes his shell?

Lear. No.

Fool. Nor I neither.

Shakespeare.



MALLEUS.

PLATE I.

Genus MALLEUS, Lamarck.

Testa irregulariter, subaequicoelis, elongata, ad basin interdum utrinque lobata, umbonibus discretis. Cardio edentulus, ligamento partium externo in arcu declivi, partium interno in fossulâ unicâ centrali, lacunâ parvâ pro lysso. Impressio muscularis composita.

Shell irregular, nearly equivalve, elongated, sometimes lobed on each side, umbons divaricate. Hinge toothless, with the ligament partly external on a sloping area, partly internal within a single central pit, with a small passage for the byssus. Muscular impression compound.

The present genus was founded for the reception of two oyster-like shells of very remarkable longitudinal growth, of which the hinge portion or base is prolonged at a right angle on each side into a narrow lobe. The term *Malleus*, signifying a mallet or hammer, aptly designates this form. Curious enough, however, in none of the species since discovered, bearing the same natural affinities in other respects, is the hinge-base lobed. The *M. anatinus* may be said to be slightly lobed on one side, but the lobe is webbed, and there is therefore no outline of the hammer structure. The central hinge-cavity is constant throughout the genus, and all the species commence from the umbones with a concentric laminated plan of growth. In the small species this laminated growth soon terminates, forming a kind of nucleus, and the remaining portion of the shell is an independent, transparent deposit of simple calcareous matter, often characterized, however, apart from the body of the shell, by a different speciality of colouring.

The *Mallei* are found in both hemispheres.

Species 1. (Mus. Cuming.)

MALLEUS ALBUS. *Mall. testâ longissimâ, ad latera compressè undatâ, basi utrinque angustè lobatâ, lobis prælongis, laevigatâ, sordidè albâ.*

THE WHITE MALLEUS. Shell very long, compressly waved at the sides, base narrowly lobed on each side, lobes very long, smooth; dull white.

LAMARCK, Anim. sans vert. vol. vii. p. 91.

Ostrea Malleus-albus, Chemnitz.

Varietas *Malleus normalis*, Lamarck.

Hab. Philippine Islands; Cuming.

The shell figured by Mr. Sowerby in his 'Genera of Shells,' and by myself in 'Conchologia Systematica,' as *M. normalis*, Lamarck, is a distinct species, described in 1785 by Chemnitz, for which see *M. anatinus*.

Species 2. (Mus. Cuming.)

MALLEUS LEGUMEN. *Mall. testâ longissimâ, tenui, sub-laminatâ, ad latera rectâ, prope umbones distortè, concentricè rudè plicato-laminatâ; albâ, nucleo laminatâ purpureo.*

THE POD MALLEUS. Shell very long, thin, slightly laminated, straight at the sides, distorted near the umbones, concentrically rudely plicately laminated; white, laminated nucleus purple.

Hab. Philippine Islands; Cuming.

This singular species has a roughly laminated nucleus at the commencement of its formation, after the manner of some of the small *Perna*. The valves are then produced of a thin, semitransparent, brittle substance, into a long pod.

Species 3. (Mus. Cuming.)

MALLEUS ANATINUS. *Mall. testâ elongatâ, obliquè rudè contortâ, ad latera subundatâ, basi ad latera posticum alato-lobatâ; livido-albâ, subpellucidâ, nucleis purpureo-nigris asperâ.*

THE DUCK MALLEUS. Shell elongated, obliquely rudely twisted, somewhat waved at the sides, base wing-lobed on the posterior side; livid-white, subtransparent, sprinkled with purple-black spots.

LAMARCK, Anim. sans vert. vol. vii. p. 93.

Ostrea anatina, Gmelin.

Anas domestica, Spengler.

Ostrea figurata, Chemnitz.

Malleus normalis, Sowerby (not of Lamarck).

Hab. Moluccas.

This species may always be recognized by its purple-blotched colouring. The hinge-base is lobed on the posterior side, but the lobe is webbed, so to speak, so as to become winged.



MALLEUS.

PLATE II.

Species 4. (Mus. Cuming.)

MALLEUS REGULA. *Mall. testâ elongatâ, depressâ, interdum undato-distortâ, prope umboes concentricè lirato-laminatâ, laminais deinde irregularibus, plus minus decorticatis, basi posticè subulatâ; purpureo-nigrâ.*

THE RULE MALLEUS. Shell elongated, depressed, sometimes wave-distorted, concentrically ridge-laminated near the umboes, laminae then irregular, more or less decorticated, base slightly winged on the posterior side; purple-black.

Ostrea regula, Forskael, Descr. Anim. p. 124.

Ostrea ocrea, Martini

Fexillum Moluccanum, Chemnitz.

Ostrea Fulsella, Gmelin.

Malleus ensellatus, Lamarck.

Hab. Philippine Islands.

A purple-black, strongly laminated species, mostly decorticated, so as to expose the laminae in broken concentric ridges.

Species 5. (Mus. Cuming.)

MALLEUS VULGARIS. *Mall. testâ subelongatâ, valdè rugoso-contortâ, basi angustissimè lobatâ, lobis subulatis, praelongis; intus exclusque purpureo-nigrâ.*

THE COMMON MALLEUS. Shell somewhat elongated, very roughly contorted, very narrowly lobed at the base, lobes slightly webbed, very long; purple-black within and without.

Ostrea malleus, Linnæus, Syst. Nat. p. 1147.

Malleus vulgaris, Lamarck.

Hab. China Seas.

Distinguished from *M. albus* not only by its intense purple-black colouring, but by its very rude, roughly blistered, tumid, contorted growth.

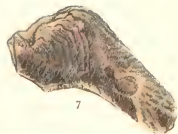
Species 6. (Mus. Cuming.)

MALLEUS DEMONIACUS. *Mall. testâ rudè lingueformi, obliquâ, concentricè lirato-laminatâ, ad basin utringue auritâ; intus purpureo-nigrâ.*

THE DEMONICAL MALLEUS. Shell rudely tongue-shaped, oblique, concentrically ridge-laminated, eared at the base; deep purple-black.

Hab. Philippine Islands.

This shell might, perchance, be regarded as the young of *M. regula*; but it is of an oblique growth, conspicuously eared on each side, the umboes and ligamentary cavity being exactly central.



MALLEUS.

PLATE III.

Species 7. (Mus. Cuming.)

MALLEUS TIGRINUS. *Mall. testā ovatā, subpectinatā, validē concentricē plicato-laminatā, deinde tenui, obliquē prolongatā; albidā, parte tenui maculis purpureis aspersā.*

THE TIGER-SPOTTED MALLEUS. Shell ovate, somewhat pectinate, strongly concentrically plicately laminated, then thin, obliquely prolonged; whitish, the thin portion sprinkled with purple spots.

Hab. Moluccas.

It is a curious typical peculiarity of the smaller species of *Malleus* assembled in this Plate that the sculptured shell is formed as a nucleus about the umbones, from which proceeds a more or less elongated, semitransparent, irregular lamina.

Species 8. (Mus. Cuming.)

MALLEUS RUFIPUNCTATUS. *Mall. testā subtrigono-ovatā, concentricē plicato-laminatā, deinde irregulariter tenui prolongatā; albidā, parte tenui lido-corneā, maculis purpurascens-rylis obscure pictā.*

THE RED-DOTTED MALLEUS. Shell somewhat triangularly ovate, concentrically plicately laminated, then irregular, thinly prolonged; whitish, thin portion livid-horny, obscurely painted with light purple-red spots.

Hab. West Columbia; Cuming.

As in the preceding species, the most characteristic feature lies in the colouring of the thin, irregular, protruding lamina.

Species 9. (Mus. Cuming.)

MALLEUS MACULOSUS. *Mall. testā trigono-quadratā, parvā, subobscure lamiatā, deinde tenui, ampliter prolongatā, tumidiusculā, pellucido-corneā, purpureo maculatā.*

THE FRECKLED MALLEUS. Shell triangularly square, small, somewhat obscurely laminated, then thin, largely prolonged, rather swollen, transparent-horny, spotted with purple.

Hab. Lord Hood's Island, Pacific Ocean; Cuming.

The thin, prolonged lamina of this shell is almost bladder-like, the sculptured nucleus having the appearance of a parasite upon it.

Species 10. (Mus. Cuming.)

MALLEUS DECURVATUS. *Mall. testā ovatā vel oblongā, prope umbones vitidē laminatā, deinde valdē rugosā; albidā, purpureo tinctā et maculatā.*

THE SHORTENED MALLEUS. Shell ovate or oblong, neatly laminated near the umbones, then very rough; whitish, stained and spotted with purple.

Lamarck, Anim. sans vert. vol. vii. p. 93.

Hab. New Holland.

Of a less delicate texture than either of the preceding species, with a rougher exterior.

Species 11. (Mus. Cuming.)

MALLEUS AQUATILIS. *Mall. testā trapezoidā, concentricē undato-plicatā, deinde tenui prolongatā, parte tenui pellucido-corneā, obscure foveatā.*

THE RIPPLED MALLEUS. Shell trapezoid, concentrically wave-plaited, then thinly prolonged, the thin portion transparent-horny, obscurely banded.

Hab. Isle of Plata, West Columbia; Cuming.

The nucleated portion of this shell is arranged in conspicuous trapezoid plaits, whilst the thin portion is obscurely banded.

Species 12. (Mus. Cuming.)

MALLEUS VESICULATUS. *Mall. testā subtrapezoidā, concentricē densē plicato-laminatā, deinde tenui prolongatā, parte tenui oblongo-quadratā, longitudinaliter lirato-striatā, tumidā, irregulariter vesiculatā; intense rufa-purpureā.*

THE BLISTERED MALLEUS. Shell somewhat trapezoid, concentrically densely plicately laminated, then thinly prolonged, the thin portion oblong-square, longitudinally ridge-striated, swollen, irregularly blistered; deep reddish-purple.

Hab. Isle of Plata, West Columbia; Cuming.

The prolonged laminar growth of this species is singularly swollen and much blistered.

Species 13. (Mus. Cuming.)

MALLEUS SOLITARIUS. *Mall. testā obliquē elongatā, tenuissimā, pellucidā, pallidē eneo-rufescente, radiatim undato-liratā.*

THE SOLITARY MALLEUS. Shell obliquely elongated, very thin, transparent; light coppery-red, radiately wave-ridged.

Hab. Grimwood's Island, Pacific Ocean; Cuming.

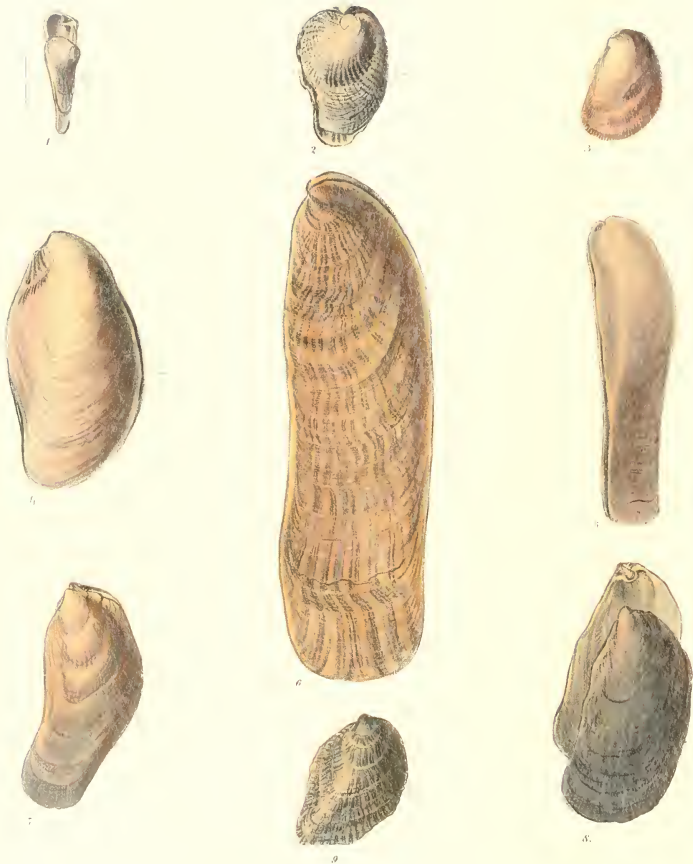
A delicate, transparent, coppery-tinged shell, not belonging to the nucleated type, which is characteristic of the other species in this Plate.

MONOGRAPH

OF THE GENUS

V U L S E L L A.

"Free from extremes of ebb and flow,
Not swelled too high, nor sunk too low,
Such shall thy life's smooth current be,
Till from time's narrow shore set free,
It mingle with the eternal sea."—*Hughes*.



VULSELLA.

PLATE I.

Genus VULSELLA, Lamour.

Testa longitudinalis, fibro-laminaris, asymmetris, subirregularis, umbonibus aequalibus. Ordo cardiacae in atriisque cala prominens, superne depressum, cum foveâ conicâ obliquè arcuatâ desuper impressum, ligamento inserto. Impressio muscularis subcentralis, versus basin distinctè imbuta.

Shell longitudinal, fibro-laminar, equivalve, somewhat irregular, umboes equal. Hinge-callosity in each valve prominent, depressed at the upper part, impressed above with an obliquely-arched conical pit enclosing the ligament. Muscular impression nearly central, distinctly marked towards the base.

The shells which constitute the genus *Vulsella* are all of a dull-brown fibrous texture, of very irregular growth, living chiefly imbedded in sponge. They present great similarity of sculpture, being mostly beset with laminae of minute crenulated scales, and the umboes are invariably attenuated and more or less hooked. The most conspicuous structure of the hinge is a central spoon-shaped pit, as in *Malleus*; but besides this, the valves incline to recede from one another at the base, so as to form a sloping area.

The list now numbers seventeen species, chiefly from the Red Sea.

Species 1. (Mus. Cuming.)

VULSELLA PHOLADIFORMIS. *Val. testa elongato-trigona, gracili, decussatim fimbriato-striatâ.*

THE PHOLAS-SHAPED VULSELLA. Shell elongately triangular, slender, decussately fimbriately striated.

Hab. Ceylon; E. L. Leyard.

Distinguished by its slenderly triangular Pholas-shape.

Species 2. (Mus. Cuming.)

VULSELLA ISOCARDIA. *Val. testâ ovata, depressâ, umbonibus intortis, concentricè squamato-laminatis, squamis crenatis; sordide albâ obscure radiatâ.*

THE ISOCARDIA VULSELLA. Shell ovate, depressed, umboes turned inwards, concentrically squamately laminated, scales crenated; dirty-white, obscurely rayed.

Hab. Red Sea.

The surface of this species is almost wholly overlaid

with a plating of finely-pointed scales, the umboes being convoluted inwards, as in *Isocardia*.

Species 3. (Mus. Cuming.)

VULSELLA TASMANICA. *Val. testâ subtrigono-ovata, rudi, distortâ, umbonibus parvis, dense squamato-striatis; ferrugineo-albâ.*

THE TASMANIAN VULSELLA. Shell somewhat triangularly ovate, rude, distorted, umboes small, densely squamately striated; rusty-white.

Hab. Tasmania.

Of very uncoath growth, closely scale-striated, and rusty-white.

Species 4. (Mus. Cuming.)

VULSELLA MYTILINA. *Val. testâ oblongo-ovata, anticè subcompressâ, solidiusculâ, obscure decussatim squamato-striatâ; ferrugineo-albâ.*

THE MYTILUS-SHAPED VULSELLA. Shell oblong-ovate, anteriorly somewhat compressed, rather solid, obscurely decussately squamately striated; rusty-white.

LAMARCK, Anim. sans vert. vol. vii. p. 268.

Hab. Red Sea; Dr. Rüppell.

More solid, and less definitely scaled than its congeners.

Species 5. (Mus. Cuming.)

VULSELLA ATTENUATA. *Val. testâ elongato-attenuatâ, ad extremitatem depresso-subquadratâ, radiatum obscure squamato-striatâ; corneo-albidâ, deinde livido-purpurascens-brunneâ.*

THE ATTENUATED VULSELLA. Shell elongately attenuated, depressly subquadratic at the extremity, radiately obscurely scale-striated; horny-white, then livid-purple-brown.

Hab. Red Sea.

The example of this species here figured may be more than ordinarily attenuated, owing to some external conditions in its situation of growth.

Species 6. (Mus. Cuming.)

VULSELLA LINGULATA. *Val. testâ elongatâ, rectâ, concen-*

trici striatâ, fuscâ, lineis fascisque pallidioribus undatim pictâ.

1111 TONGUE-SHAPED VULSELLA. Shell elongated, straight, concentrically striated, brown, painted in a waved manner with lighter bands and lines.

Mya Vulsella, Linnæus, Syst. Nat. p. 1113.

Vulsella linguata, Lamarek.

Hab. Red Sea.

This original and well-known species far transcends the remainder in size and general definition of character.

Species 7. (Fig. 7 and 8, Mus. Cuming.)

VULSELLA RUGOSA. *Val. testâ obliquè oblongâ, subarcuatâ, planulatâ, longitudinaliter rugosâ, striis transversis crenatis rugas decussantibus; purpureo-fuscâ.*

THE WRINKLED VULSELLA. Shell obliquely oblong, some-

what arched, flat, longitudinally wrinkled, with crenated transverse striae crossing the wrinkles, purple-brown.

LAMAREK, Anim. sans vert. vol. vii. p. 268.

Hab. Red Sea.

A rugose purple-brown species, having a somewhat obliquely arched growth.

Species 9. (Mus. Cuming.)

VULSELLA CRENULATA. *Val. testâ ovato-trapezoidâ, squamato-laminatâ, squamis crenulatis; sordide albâ.*

THE CRENULATED VULSELLA. Shell ovately trapezoid squamately laminated, scales crenulated—dirty-white.

Hab. Red Sea.

Very similar to *V. Isocordia* in sculpture.



10 a.



11



12.



10 b.



13 a.



13 b.



14.



15



17



16

VULSELLA.

PLATE II.

Species 10. (Fig. 10 *a* and 10 *b*, Mus. Cuming.)

VULSELLA LIMA-FORMIS. *Ful. testâ subpectinâtâ, ventricosâ, tenuissimè crenulato-squamatâ; sordidè albâ.*

THE LIMA-SHAPED VULSELLA. Shell subpectinate, ventricose, very finely crenulately squamate; dirty-white. *Hab.* Port Adelaide, South Australia.

This little species, of which Fig. 10 *b* represents a group invested with sponge, is characterized by a subpectinate articulated growth on each side of the umbos, which gives it a *Lima*-like appearance.

Species 11. (Mus. Cuming.)

VULSELLA PHASIANOPTERA. *Ful. testâ elongato-cuneiformi, versus umbones attenuatâ, densè scabroso-striatâ; fuscâ, radiis pallidis angustis subundatis viridè pictâ.*

THE PHEASANT-SHAPED VULSELLA. Shell elongately wedge-shaped, attenuated towards the umbos, densely scabrously striated; brown, neatly painted with waved narrow pale bands.

Hab. Australia.

An attenuated *Mytilus*-like form, exquisitely painted in a manner somewhat resembling that of *F. lingulata*.

Species 12. (Mus. Cuming.)

VULSELLA RUDIS. *Ful. testâ oblongo-quadratâ, obliquâ, rudî, subirregulariter laminatâ, minutissimè crenulato-squamatâ; sordidè fuscocentè.*

THE RUDE VULSELLA. Shell oblong-square, oblique, rude, somewhat irregularly laminated, very minutely crenulately sealed; dull-brown.

Hab. Swan river, Australia.

Of rude, irregular growth, yet minutely crenulately sealed, so as to give the surface a somewhat granular appearance.

Species 13. (Fig. 13 *a* and 13 *b*, Mus. Cuming.)

VULSELLA LINGUA-FELIS. *Ful. testâ ovali, medio latiusculâ, nâdique densè crenulato-squamatâ, squamis suberectis. spadiceo-fuscâ.*

THE CAT'S-TONGUE VULSELLA. Shell ovate, rather broad across the middle, densely crenulately sealed throughout, scales somewhat erect; bay-brown.

Hab. —?

This species is distinguished by its thick-set coating of comparatively erect crenulated scales. Fig. 13 *b* represents a group invested with sponge.

Species 14. (Mus. Cuming.)

VULSELLA COROLLATA. *Ful. testâ attenuato-cuneiformi,*

concentricè densè laminatis, laminais crenulato-squamatis; sordidè fuscâ.

THE FESTOONED VULSELLA. Shell attenuately wedge-shaped, concentrically densely laminated, laminae crenulately sealed; dirty-brown.

Hab. Zanzibar.

Of a characteristic *Mytilus* form, densely sculptured throughout with festoons of crenulately sealed laminae.

Species 15. (Mus. Cuming.)

VULSELLA SPONGIARUM. *Ful. testâ oblongâ, arcuatâ, ad basin latiusculâ, umbonibus divergentibus, radiatim minutissimè crenulato-squamatâ; fuscocentè.*

THE SPONGE VULSELLA. Shell oblong, arched, rather broad at the base, umbos diverging, radiately very minutely crenulately sealed; light-brown.

LAMARCK, Anim. sans vert. vol. vii. p. 268.

Hab. Swez.

Although it is a generic character of the *Vulsella* to have the umbos diverge from each other with advancing growth, they appear to be more than usually divergent in this species.

Species 16. (Mus. Cuming.)

VULSELLA HIANS. *Ful. testâ oblongo-quadratâ, subobliquâ, anticè hiante, rudè laminatâ, radiatim crenulato-squamatâ, radiis undulatis; fuscâ.*

THE GAPING VULSELLA. Shell oblong-square, rather oblique, gaping in front, rudely laminated, radiately crenulately striated, rays a little waved; brown.

LAMARCK, Anim. sans vert. vol. vii. p. 267.

Hab. Philippine Islands; Cuming.

Of somewhat rude irregularly laminated growth, gaping in front, and sometimes a little gaping behind, with the crenulated scales, which is the predominating sculpture of this genus, ranged in waving rays.

Species 17. (Mus. Cuming.)

VULSELLA TRITA. *Ful. testâ subtrigono-ovalâ, latiusculâ, solidâ, concentricè striatâ, medio lævigatâ; spadiceo-fuscâ.*

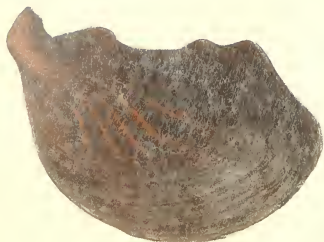
THE WORN VULSELLA. Shell somewhat triangularly ovate, rather broad, solid, concentrically striated, smooth in the middle; bay-brown.

Hab. Red Sea.

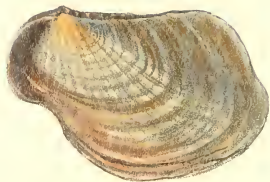
A more solid species than usual, with no perceptible indication of crenulated scales.

MONOGRAPH
OF THE GENUS
C R E N A T U L A.

"Nature never did betray
The heart that loved her; 'tis her privilege,
Through all the years of this our life, to lead
From joy to joy; for she can so inform
The mind that is within us, so impress
With quietness and beauty, and so feed
With lofty thoughts, that neither evil tongues,
Rash judgments, nor the sneers of selfish men,
Nor greetings where no kindness is, nor all
The dreary intercourse of daily life
Shall e'er prevail against us or disturb
Our cheerful faith, that all which we behold
Is full of blessings."—*Wordsworth.*



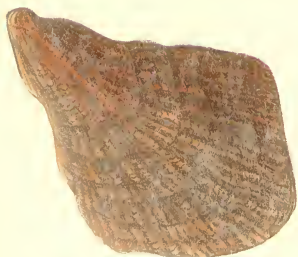
1a



2



1b



3



4

CRENATULA.

PLATE I.

Genus CRENATULA, Lamourck.

Testa tenuis, subaequalitatis, emplanata, plerumque concentricè striata, fibro-laminaris, obliqua. Cardo lateralis, linearis, marginatus, crenulatus; crevis in seriem ordinatis, callosis, subaequalibus, ligamentum excipientibus. Impressio muscularis oblonga, indistincta.

Shell thin, nearly equivalve, smooth, mostly concentrically striated, fibro-laminar, oblique. Hinge lateral, linear, marginal, crenulated; crevules set in a row, callous, rather hollow, receiving the ligament. Muscular impression oblong, indistinct.

This very characteristic genus was established about half a century ago, by Lamourck, in the 'Annales du Muséum' of Paris. It is a member of the family of *Aviculariaceae*, and is distinguished by a narrow linear hinge, presenting a row of hollow crenules or jutting cavities for the reception of the ligament. But concomitant with this are other peculiarities of not inferior importance. The shells are all of a delicate horny substance, and of a constant obliquely quadrate or obliquely ovate growth; and it is their habit to live imbedded in sponge.

All the species arc from the Red Sea except a new one, which I have the pleasure of introducing, of a very distinct typical form, from New Caledonia.

Species 1. (Fig. 1 a and 1 b, Mus. Cuming.)

CRENATULA NIGRINA. *Cren. testâ obliquè ovatâ, subundato-distortâ, anticè rotundatâ, posticè declinè-angulatâ, nigrâ, coracè, concentricè interruptè plicato-striatâ; radiis fuscescentibus distantibus undantibus subobscurè pictâ.*

THE BLACK CRENATULA. Shell obliquely ovate, somewhat wave-distorted, anteriorly rounded, posteriorly slopingly angled, black, horny, concentrically interruptedly plicately striated, rather obscurely painted with waved, distant, brownish rays.

LAMARCK, Anim. sans vert. vol. vii. p. 72.

Hab. Red Sea.

Chiefly distinguished by its painting of distant faint brown rays upon a black horny ground.

Species 2. (Mus. Cuming.)

CRENATULA VIRIDIS. *Cren. testâ transversè ovatâ, subobliquâ, convexâ, anticè rotundatâ, posticè subangulatâ-*

productâ, tenui, concentricè striatâ; viridî, pallidè radiatâ et fasciatâ.

THE GREEN CRENATULA. Shell transversely ovate, rather oblique, convex, anteriorly rounded, posteriorly angularly produced, thin, concentrically striated; green, faintly rayed and banded.

LAMARCK, Anim. sans vert. vol. vii. p. 72.

Hab. Red Sea.

A species of delicate horny substance, easily recognized by its *Anodon*-like form, and bright-green colour.

Species 3. (Mus. Cuming.)

CRENATULA AVICULARIS. *Cren. testâ trigono-stellatâ, declinè utrinque angulari, versus umbones attenuatâ, depressâ, concentricè interruptè plicato-striatâ; rufescente-nigrâ, radiis linearibus rufo-fuscis profusè pictâ.*

THE AVICULAR CRENATULA. Shell triangularly fan-shaped, slopingly angular on each side, attenuated towards the umbones, depressed, concentrically interruptedly plicately striated; reddish-black, profusely painted with linear red-brown rays.

LAMARCK, Ann. du Mus. vol. iii. pl. 2. f. 1. 2.

Hab. Red Sea.

Distinguished by its sloping, angular form, and profuse brown-royed painting.

Species 4. (Mus. Cuming.)

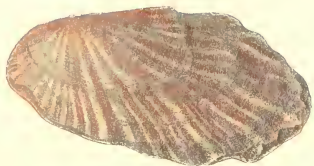
CRENATULA BICOSTALIS. *Cren. testâ subquadrato-ovatâ, anticè convexâ, rotundatâ, posticè concavâ, abbreviato-angulatâ, medio obscurè radiatum bi-tricostatâ, costa subnodosis, concentricè striatâ; nigrâ.*

THE TWO-RIBBED CRENATULA. Shell somewhat squarely ovate, anteriorly convex, rounded, posteriorly concave, shortly angled, obscurely rayed in the middle with two or three ribs, which are slightly noduled; black.

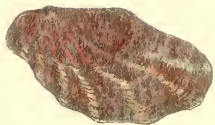
LAMARCK, Anim. sans vert. vol. vii. p. 72.

Hab. Red Sea.

In this species there is a more characteristic difference between the convex anterior portion of the shell, and the concave posterior part, which describes a more contracted angle. About the middle, radiating from the umbones, there is a faint indication of noduled ribs.



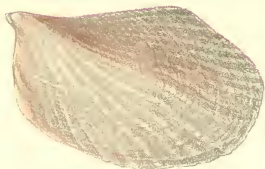
5a



5b



6



7



8

CRENATULA.

PLATE II.

Species 5. (Fig. 5 *a* and 5 *b*, Mus. Cuming.)

CRENATULA FLAMMEA. *Cren. testā transversè ovalā, subangustā, obliquā, rudē convexā, tenui, concentricè striatā; rubidā, fasciis acutè undatis pallidis varicè distantibus peculiariter obliquè lentiginosā flammata.*

THE FLAMED CRENATULA. Shell transversely ovate, rather narrow, oblique, rudely convex, thin, concentrically striated; red, flamed with variously distant zigzag pale bands, which are peculiarly obliquely freckled.

Hab. New Caledonia.

This interesting species differs materially from the Red Sea type. It is of a rather narrow transverse oval form, convex and thin, and of a dull coppery-red colour, more or less rayed with sharply zigzag bands and lines, which are curiously obliquely freckled across.

Species 6. (Mus. Cuming.)

CRENATULA PICTA. *Cren. testā transversè oblongo-quadratā, obliquè subundatā, depressā, umbonibus rostratis, concentricè interruptè plicato-striatā; rufescente-nigrā, radiis linearibus rufis-fasciis profusè pictā.*

THE PAINTED CRENATULA. Shell transversely oblong-square, obliquely slightly waved, depressed, umboes beaked, concentrically interruptedly plicately striated; reddish-black, profusely painted with red-brown linear rays.

Ostrea picta, Gmelin, Syst. Nat. n. 127.

Crenatula picta, Deshayes.

Crenatula phasianoptera, Lamarck.

Hab. Red Sea.

Except in form, there is no difference between this species and *C. avicularis*. The colouring is identical.

Species 7. (Mus. Cuming.)

CRENATULA FOLIUM. *Cren. testā transversè rhomboideā, obliquè convexā, utrinque obtusè angulatā; livido-albidā, costis nodosis opaco-albis radiatā.*

THE LEAF CRENATULA. Shell transversely rhomboid, obliquely convex, obtusely angled on each side; livid-white, rayed with opaque-white noded ribs.

GRAY, Brande's Journal, pl. 2. f. 81.

Hab. Red Sea.

Characterized by a pale-livid hue, rayed with noded ribs of opaque-white.

Species 8. (Mus. Cuming.)

CRENATULA MYTILOIDES. *Cren. testā obliquè subquadratā vel oblongā, prope umbones convexā, deinde depressā, densè concentricè striatā, laevi; purpureo-nigrā.*

THE MYTILUS-LIKE CRENATULA. Shell obliquely sub-quadrate or oblong, convex near the umboes, then depressed, densely concentrically striated, smooth; purple-black.

LAMARCK, Ann. du Mus. vol. iii. p. 30. pl. 2. f. 3, 4.

Hab. Red Sea.

Mostly somewhat distorted in form, jet-black, without any indication of rays.

MONOGRAPH

OF THE GENUS

U M B R E L L A.

A lovely dwelling by the wave
Of the blue deep which bathes Italia's shore,
Far from all sounds but rippling seas, that live
Grey rocks with foliage richly shadow'd o'er,
And sighing winds, that murmur through the wood
Fringing the beach of that Hesperian food."

Mrs. Hemans



1a.



2



3



1b

UMBRELLA.

PLATE I.

GENUS UMBRELLA, Lamarck.

Testo orbiculari, planulata, superâ convexiusculâ, vertice minime subcentrali, inferâ concaviusculâ, disco centrali, impressione musculari irregulari continud ad centrum circularitèr imbutâ.

Shell orbicular, flat, rather convex at the upper part, with a very small nearly central vertex, rather concave beneath, impressed with a central disc, having an irregular continuous muscular impression around it.

The "Chinese Parasol" of the older French naturalists being found to differ in general character from the rest of the Limpet tribes, a genus was created for its reception by Lamarck, under the title of *Umbrella*. On the discovery of the animal it was found to be a large tumid warty mass, with the shell imbedded flat upon the back.

The principal species has a wide range throughout the Eastern seas; a second species inhabits the Mediterranean; and third was collected by Mr. Cuming at the mouth of the Chiriqui river, in the Bay of Panama.

Species 1. (Fig. 1 a and 1 b, Mus. Cuming.)

UMBRELLA INDICA. *Umb. testâ subtili concaviusculâ, radiatim striatâ, albâ, medio intus è aurantio-sulphureâ, extus concentricè striatâ, margine undulatâ; carneo-albidâ, radiatim fasciatâ, fasciis fusciscentibus, epidermide plicatâ indutâ.*

THE INDIAN UMBRELLA. Shell rather concave beneath, radiately striated, white, deep orange-sulphur in the middle, concentrically striated without, waved at the margin; flesh-white, radiately banded, bands brownish, covered with a plicated epidermis.

LAMARCK, Anim. sans vert. vol. vii. p. 573.

Patella umbellata and *Sinea*, Gmelin.

Hab. Eastern seas.

Fig. 1 a in the accompanying Plate represents a specimen rather more than usually convex, in a very fresh state of preservation, being covered with an epidermis, which, on the radiating bands, is set in thick-set folds. Fig. 1 b shows the richly orange-sulphur interior of a specimen of larger and flatter growth.

Species 2. (Mus. Cuming.)

UMBRELLA MEDITERRANEA. *Umb. testâ ovatâ, tenuicollâ, depressâ, concentricè interdum rugoso-plicatâ; carneo-albidâ, subobscurè fusciscente radiatâ, subtili medio pallidè sulphureâ.*

THE MEDITERRANEAN UMBRELLA. Shell ovate, rather thin, depressed, concentrically, sometimes rugosely plicated; flesh-white, rather obscurely rayed with light-brown beneath, pale-sulphur in the middle.

LAMARCK, Anim. sans vert. vol. vii. p. 574.

Umbrella Lamarckiana, Recluz.

Hab. Mediterranean Sea.

A much less solid species than the preceding, with little appearance of radiating striae on the inner surface. M. Recluz described, in 1843, *Revue Soc. Caviérienne*, p. 169, a second species of *Umbrella* from the Mediterranean, but his views in this respect have not been confirmed.

Species 3. (Mus. Cuming.)

UMBRELLA OVALIS. *Umb. testâ ovali, tenui, subpellucidâ, planulatâ subtili aurantio-albidâ, levigatâ, extus concentricè striatâ, margine integrâ, vertice parvo; carneo-albidâ, fusciscente pallidè remotè radiatâ, epidermide tenui indutâ.*

THE OVAL UMBRELLA. Shell oval, thin, rather transparent, orange-white beneath, smooth, concentrically striated without, entire at the margin, vertex small; flesh-white, faintly distantly rayed with brown, covered with a thin epidermis.

CARPENTER, Pro. Zool. Soc. 1856, p. 161.

Hab. Mouth of the Chiriqui river, Bay of Panama; Cuming.

The specific differences in this genus are slight and variable, but the discovery in the above-named locality of a genus of so characteristic a type as *Umbrella*, hitherto known only in the eastern hemisphere, adds materially to the importance of the species.

MONOGRAPH

OF THE GENUS

P E D U M.

"O Nature! all-sufficient! over all!"
Enrich me with the knowledge of thy works!

Thomas.



1830. No. 10. 101

Printed by J. J. G. J. J. J.

P E D U M.

PLATE I.

Genus PEDUM, Brugière.

Testa longitudinalis vel conoformis, compressa, inequivalvis, subauriculata; valvâ inferiori convexiusculâ, ad latera reflectâ, prope cardinem pedunculâ sinuatâ, valvâ superiore planâ. Cardio edentibus, ligamento partim externo in fossulâ canaliformi sub arcum productam valvæ inferioris.

Shell longitudinal or wedge-shaped, compressed, inequivalve, slightly eared; lower valve rather convex, reflected at the sides, deeply sinuated near the hinge, lower valve flat. Hinge toothless, with the ligament partially external contained within a channelled pit running across a produced area of the lower valve.

The earliest publication of the shell which forms the subject of this genus was the mention of "a rare Oyster from the Indies," nearly a hundred years ago, in the 'Catalogue Raisonné' of Davia. Gmelin and Chemnitz observing, almost simultaneously, its resemblance to *Spondylus*, named it "the Spondylus-like Oyster, *Ostrea Spondyloidea*;" but Brugière, while establishing some important improvements in the classification of shells in the 'Encyclopédie Méthodique,' perceived the remarkable peculiarities of this so-called Oyster, and founded the genus *Pedum* for its special reception. Until lately this shell continued to be one of great rarity. It has now, however, been found in comparative abundance in the Red Sea, imbedded chiefly in masses of madrepora. No second species has been discovered.

The animal of *Pedum*, according to the observations of

MM. Quoy and Gaimard, made during the voyage of the 'Astrolabe,' partakes of the character of those of *Spondylus* and *Pecten*, but its shell is quite unique in structure, being slight in substance, reflected at the sides, and having, with its ligamentary area, an unusually deep sinus for the passage of the byssus.

Species 1. (Fig. a, b, c, d, e, Mus. Cuming.)

PEDUM SPONDYLOIDEUM. Ped. testâ longitudinaliter ovato-conoformi, planulatâ, superiore longitudinaliter striatâ, striis granulato-scabris; albâ, purpureo-rufâ plus minus tinctâ et transversim fasciatâ.

THE SPONDYLUS-LIKE PEDUM. Shell longitudinal or ovately wedge-shaped, flat, upper valve longitudinally striated, striae granulately scabrous; white, more or less stained and transversely banded with purple-red.

Ostrea Spondyloidea, Gmelin, Syst. Nat. 13th edit. p. 3335
Tab. Red Sea (in madrepora).

Of the specimens of this well-known and interesting shell represented in the accompanying Plate, Fig. 1 a illustrates its early stage of growth, while Fig. 1 b is a fine adult, and Fig. 1 c similarly adult, but a dwarf variety. Fig. 1 d is a characteristic white variety, almost uniformly more rounded than the typical form; and Fig. 1 e shows a mass of madrepora with a young *Pedum* in its natural habitat.

MONOGRAPH

OF THE GENUS

I A N T H I N A.

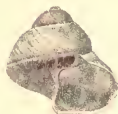
"Yet know not what we fear,
But float upon a wild and violent sea,
Each way, and move."—*Shakespeare*.



24



25



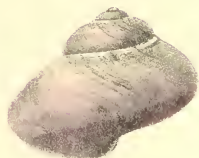
26



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30



31



32



IANTHINA.

PLATE I.

Genus IANTHINA, Lamarck.

Testa subglobose, nunc depressa nunc rotunda, rarissimè umbilicata, tenuis, subpellucida, plus minus violaceo tineta, anfractibus interdentibus laevibus, intersticia lamellato-rugosis, rugis ad peripheriam sinuatis, columellâ tenui, prolongatâ, aperturâ subangustâ, tubo simplici, medio plerumque sinuato vel emarginato.

Shell subglobose, sometimes depressed, sometimes rotund, very rarely umbilicated, thin, subtransparent, more or less stained with violet, whorls sometimes smooth, sometimes lamellately wrinkled, the wrinkles sinuating at the periphery, columella thin, prolonged, aperture rather large, lip simple, generally sinuated or notched in the middle.

The beautiful oceanic shells comprised in this monograph are not uncommon, but they have never been specially investigated, and their varieties of form have never been fairly submitted to the test of comparison. To argue that the shells of *Ianthina* are all modifications of one and the same species, varying according to sex or geographical position, simply because they are characterized by an unusual uniformity of convolution and colour, is erroneous. The specific differences of shells are often best defined where there is a marked resemblance of general character, and so it is with *Ianthina*. This mollusc, as is well known, is an inhabitant of the open sea, feeding on the gelatinous *Velutella* and other surface fry, and buoying itself on the waves by means of an agglomeration of air-bladders, beneath which are secreted the eggs. It results that the *Ianthinae* have a wide range of habitation, and few shore stations are recorded as habitats except where a temperate sea may have wafted the animal in troops upon the sands at comparatively distant intervals. Instances are known where a period of twenty years and more has elapsed before the locality has been again visited by the same mollusc. In some tropical waters, on the other hand, the *Ianthinae* have been observed in such shoals as to be deposited on the shore in a series of violet ripples.

To relate the history of *Ianthina* we must go back two centuries and a half, to the time of Fabius Colonna, a member of the illustrious house of Colonna, who wrote a special work on the purple-yielding creatures of the ocean, *De Porpurâ, etc.*, 1616, and to whom the *Ianthina*, both shell and animal, was known. Linnaeus included a species in his genus *Helix*. Lamarck observed and de-

scribed two species, founding the present genus for their reception, and ten more have been described since his time in different works by De Blainville, Leach, D'Orbigny, Monke, and others.

Owing to the gregarious habits of the *Ianthina*, their habitats are very imperfectly known. The Atlantic and Pacific Oceans lay claim to all that have been actually captured. Three species are recorded by Forbes and Hanley as having been washed upon the British shores, and I have authority for adding a fourth.

Species 1. (Fig. 1 *a* and 1 *b*, Mus. Cuming.)

IANTHINA ROSEOLA. *Ianth. testâ ovato-conicâ, spirâ subelâtâ, anfractibus convexis, obliquè plicato-striatis, spiraliter subobsoletè lineari-sulcatis; calcareo-albidâ, subopacâ, violascente tinctâ, subtus vividè violacèâ, columellâ et apertura fauce carneo-roseâ; columellâ prolongatâ, tenuè costatâ.*

THE ROSEATE IANTHINA. Shell ovately conic, spire somewhat elevated, whorls convex, obliquely plicately striated, spirally rather obsoletely linearly grooved; chalk-white, rather opaque, faintly tinged with violet, deep-violet beneath, columella and interior of the aperture tinged with flesh-rose; columella prolonged, thinly twisted.

Hab. Island of Nicobar.

The chief characteristics of this species consist in the semi-opaque chalky texture of the last whorl, which is more convex than in the nearest allied form, *I. affinis*; and in the surface being more or less obsoletely spirally linearly grooved or scratched. The roseate colouring of the aperture and columella are also peculiar. The specimens in Mr. Cuming's possession were collected at the Island of Nicobar in the voyage of the 'Galatea.'

Species 2. (Fig. 2 *a* and 2 *b*, Mus. Cuming.)

IANTHINA AFFINIS. *Ianth. testâ ovato-conicâ, spirâ subelâtâ, anfractibus declivi-convexis, subumbilicatis, superficialiter decussatim striatis; violascente-albâ, nitidiusculâ, subtus intensè violacèâ; columellâ tenuè recurvâ.*

THE ALLIED IANTHINA. Shell ovately conic, spire somewhat elevated, whorls slopingly convex, somewhat indented, superficially decussately striated; vio-

let-white, rather shining, deep-violet beneath; columella thinly recurved.

Hab. — ?

Though so very similar in form to the preceding species, there is a depression and indented character about the surface of the last whorl which appears to be constant. There is no indication of the roseate hue which tinges the aperture and columella alike in all the specimens we have seen of *I. roseola*.

Species 3. (Fig. 3 a and 3 b, Mus. Cuming.)

IANTHINA GRANDIS. *Ianth. testâ subgloboso-turbinalâ, apice depressiusculâ, anfractibus tumidis, rotundatis, de suturis declivis, ultimo gradatim descendente, oblique striatis, lineis paucis flexuoso-sulcatis spiritaliter decussatis; intus violaceâ, prope apicem albicante; columellâ tenuissimè recurvâ, deinde sinuoso-contortâ.*

THE LARGE IANTHINA. Shell somewhat globosely turbinated, rather depressed at the apex, whorls swollen, rounded, sloping from the sutures, the last whorl gradually descending, obliquely striated, decussated spirally with a few flexuously grooved lines; deep-violet, whitish near the apex; columella very thinly recurved, then sinuously twisted.

Hab. — ?

This fine species may probably be the exotic representative of our British *I. communis*, resembling it both in form and in intensity of colour. The whorls slope more from the sutures, and the last one descends more than usually below the previous whorl. The surface is moreover characterized by a distinct pattern of flexuous linear grooving.

Species 4. (Fig. 4 a and 4 b, Mus. Cuming.)

IANTHINA CASTA. *Ianth. testâ depresso-turbinalâ, anfractibus latè declivibus, deinde subangustè rotundatis, striis tenuibus impressis undique cingulatis; purpu-*

rescent-violaceâ, versus apicem coruleo-albicante; columellâ arcuatâ, reflexâ, aperturâ transversâ, medio sub-sinuatâ.

THE CHASTE IANTHINA. Shell depressly turbinated, whorls widely sloping, then narrowly rounded, encircled throughout with fine impressed striae; purplish-violet, bluish-white towards the apex; columella arched, reflected, aperture transverse, slightly sinuated in the middle.

Hab. — ?

Distinguished by a more than usually depressed form, in which the striae of growth are less conspicuously plicated, whilst the spiral impressed striae, though minute, are numerous and well defined.

Species 5. (Fig. 5 a and 5 b, Mus. Cuming.)

IANTHINA COMMUNIS. *Ianth. testâ depresso-semiglobosâ, subtus planulatâ, anfractibus declivi-convexis, subrudè decussatim striatis; supra albicante, infra purpurascete-violaceâ, circa columellam albicante; columellâ subcontorto-reflexâ, aperturâ transversâ, medio paulo sinuatâ.*

THE COMMON IANTHINA. Shell depressly semiglobose, flattish beneath, whorls slopingly convex, rather rudely decussately striated; white above, purplish-violet below, white round the columella; columella rather twistedly reflected, aperture transverse, a little sinuated in the middle.

LAMARCK, Anim. sans vert. vol. ix. p. 4.

Helix ianthina, Linnæus.

Ianthina bicolor, Menke.

Ianthina pentcephala, Péron.

Hab. Mediterranean and Atlantic.

This species is distinct from *I. fragilis* of the West Indies and Mazatlan though nearly related to it. The specimen here figured was captured by Mr. Cuming in the Atlantic.



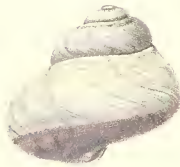
6a



7a



7b



8a



9a



9b



10a



10b



11a



11b

Species 6. (Fig. 6e and 6f, Mus. Cuming.)

IANTHINA FRAGILIS. *Ianth. testā depresso-conoidea, anfractibus subplano-declivibus, striis obliquis minutis et spiritalibus impressis, undique decussatis, supra violaceo-albicante, infra intus violaceā; columellā subrectā.*

THE FRAGILE IANTHINA. Shell depressly conoid, whorls rather flatly sloping, everywhere decussated with minute oblique and spiral impressed striae; violet-white above, deep-violet beneath; columella nearly straight.

LAMAREK, Syst. des Anim. sans vert. 1801, p. 89.

Ianthina striulata, Carpenter.

Hab. West Indies; Mazatlan; California.

Lamarek appears to have confounded two other species with this, naming it first *I. fragilis* and afterwards *I. communis*. For the second of these from the Atlantic and Mediterranean, the name *I. communis* should be retained. For the third, inhabiting our own shores, I propose to take the name *I. Britanica*, given to it, according to Mr. Jeffrey, by Dr. Leach.

Species 7. (Fig. 7a and 7b, Mus. Cuming.)

IANTHINA CERULEATA. *Ianth. testā depresso-turbinatā, spirā parvā, anfractibus declivi-convexis, obliquē subradē plicato-striatis, spiralliter densē minutē malleato-striatis; intus ceruleo-violaceā, versus apicem albicante, fasciā testā pallidā circa columellam; columellā subrectā, appresso-reflexā; aperturā transversā, medio sinuatā.*

THE BLUE-STAINED IANTHINA. Shell depressly turbinated, spire small, whorls slopingly convex, obliquely rather rudely plicately striated, spirally densely minutely indentedly striated; deep blue-violet, whitish towards the apex, with a broad pale band round the columella; columella nearly straight, appressly reflected; aperture transverse, sinuated in the middle.

Hab. — ?

The special sculpture of this species appears in the form of minute indented striae, and the colour is of a peculiar blue-stained violet.

Species 8. (Fig. 8a and 8b, Mus. Cuming.)

IANTHINA AFRICANA. *Ianth. testā subgloboso-turbinatā, ventricosā, apice subobtusā, anfractibus declivi-convexis, deinde subangulatis, spiralliter superficialiter sulcato-striatis; supra cerulescente-albidā, infra purpurascente-violaceā; columellā reflexā, arcuato-productā, labro subaenpliter sinuatā.*

THE AFRICAN IANTHINA. Shell somewhat globosely turbinated, ventricose, rather obtuse at the apex, whorls slopingly convex, then slightly angled, spi-

rally superficially groove-striated; bluish-white above; purplish-violet beneath; columella reflected, arcuately produced, lip rather largely sinuated.

Hab. Zaazibar.

Belonging to the same typical form of the genus as *I. grandis*, it is nevertheless more slopingly convex than that species, and is distinguished by a strong peculiarity of colouring. The delicate purplish-violet of the base terminates suddenly at the angle of the whorl, so as to show an unusually defined boundary.

Species 9. (Fig. 9a and 9b, Mus. Cuming.)

IANTHINA PLANOSPIRATA. *Ianth. testā depressā, anfractibus declivi-convexis, deinde subacutē rotundatis, obliquē subradē plicato-striatis; cerulescente-albā, ad peripheriam purpurascente-violaceā; columellā arcuatā, subdilato-reflexā; aperturā transversā, medio sinuatā.*

THE FLAT-SPIRED IANTHINA. Shell depressed, whorls slopingly convex, then rather sharply rounded, obliquely rather rudely plicately striated; bluish-white, purple-violet at the periphery; columella arched, somewhat dilately reflected; aperture transverse, sinuated in the middle.

ADAMS and REEVE, Moll. Voy. Samarang, p. 54, pl. 11. f. 10.

Hab. Atlantic Ocean.

Taken in the Atlantic by Sir Edward Belcher. It is less sharply angularly formed than *I. fragilis*, and is white-banded round the columella.

Species 10. (Fig. 10a and 10b, Mus. Cuming.)

IANTHINA TROCHOIDEA. *Ianth. testā pyramidaliter conicā, solidiusculā, anfractibus declivi-convexis, ultimo angulato, ad basin plano-concavo, decussatis striatis, suturis subrudibus; ceruleo-albidā, basi purpurascente-violaceā; columellā tenuē reflexā, subcontortā; aperturā ad angulum sinuatā.*

THE TROCHOID IANTHINA. Shell pyramidally conic, rather solid, whorls slopingly convex, last whorl angled, flatly convex at the base, decussately striated, sutures rather rude; bluish-white, purple-violet at the base; columella thinly reflected, slightly twisted; aperture sinuated at the angle.

Hab. — ?

Of rather solid growth, distinguished from all the other species of the genus by its regular trochoid form. The boundary of the purple colouring is as sharply defined round the basal angle as in the preceding species.



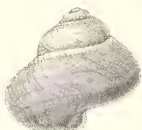
11 a.



12 a.



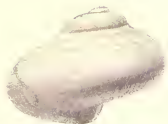
12 b.



13 a.



14 a.



14 b.



15 a.



15 b.



16 a.



16 b.

IANTHINA.

PLATE III.

Species 11. (Fig. 11 a and 11 b, Mus. Cuming.)

IANTHINA BALFOURII. *Ianth. testâ depresso-turbinatâ, spirâ parâ, infractibus declivi-convexis, concentricè plicato-corrugatis, spirâlice striatis; supra violascente-albâ, infra caeruleâ, fuscâ conspicuâ albâ circum columellam, columellâ subcylindricâ ciliatâ; apertura transversâ, sinuata sinuatâ.*

THE BELTED IANTHINA. Shell depressly turbinated, spire small, whorls slantingly convex, concentrically plicately wrinkled, spirally striated; violet-white above, blue beneath, with a conspicuous white band round the columella, which is very dark violet; aperture transverse, sinuated in the middle.

Hab. Cape of Good Hope.

This is certainly distinct from *I. fragilis*, though resembling it in general form. The surface is concentrically plicately wrinkled, and the under surface is characterized by a white band round the columella, which is prominently dark-coloured. Its nearest ally is *I. scitellæ*, represented at Fig. 15.

Species 12. (Fig. 12 a and 12 b, Mus. Cuming.)

IANTHINA INVOLUTA. *Ianth. testâ ovato-conicâ, infractibus obliquè subrotundè striatis, convexis, altimâ versus aperturam involutâ; supra violascente-albâ, operâ, infra caeruleâ; spirâlice subcylindricè striatâ, striis binis, columellâ brevi, aperturâ subarcuâculari, marginè continuo.*

THE UNROLLED IANTHINA. Shell ovately conical, whorls obliquely somewhat rudely striated, convex, last whorl unrolled towards the aperture; above violet-white, below bluish; spirally groove-striated, striae in pairs, columella short, aperture nearly orbicular, margin continuous.

Hab. —?

The detached convolution of the last whorl of this species is not a mere *lana*. Mr. Cuming possesses several specimens, all precisely agreeing in this and other specific peculiarities.

Species 13. (Fig. 13 a and 13 b, Mus. Cuming.)

IANTHINA BRITANNICA. *Ianth. testâ turbinatâ, subre-*

triciâ, infractibus subrotundè decussatim striatis, spirâ decussatâ, declivi subrotundâ, parvâ angulatâ; intusâ purpureo-fulvâ, prope apicem pallidiore. columellâ rotâ, marginè testâ reflecto et tortuosâ, aperturâ subquadratâ, medio latè sinuatâ.

THE BRITISH IANTHINA. Shell turbinated, somewhat ventricose, whorls rather roughly decussately striated, sloping at the upper part, then rounded, but little angled; deep purple-violet, paler near the apex; columella straight, thinly reflected and twisted at the edge, aperture somewhat square, broadly sinuated in the middle.

LEACH, MS. file Jeffrey in Forbes and Hanley's Brit. Moll. vol. iv. Appendix, p. 260.

Ianthina commansis, Forbes and Hanley.

Hab. Perranzabuloe, Cornwall; Cuming.

The deep-coloured ventricosely turbinated species indicated, according to Mr. Jeffrey, by Dr. Leach under the above title, and of which the specimen here figured was captured alive by Mr. Cuming off the coast of Perranzabuloe, Cornwall, must not be confounded with *I. commansis* of the Mediterranean and Atlantic, or *I. fragilis* of the West Indies and Mazatlan. Both these species are more angulated and less deeply coloured.

Species 14. (Fig. 14 a and 14 b, Mus. Cuming.)

IANTHINA DEPRESSA. *Ianth. testâ depresso-turbinatâ, spirâ brevi, planâ, infractibus declivi-convexis, obliquè plicato-corrugatis, spirâlice conspicuè subrotundè striatis, striis irregularibus, subflexuosis; supra violascente-albâ, subopacâ, infra semipellucidâ-violaceâ; columellâ costatâ-pressâ, aperturâ transversâ, cir sinuatâ.*

THE DEPRESSED IANTHINA. Shell depressly turbinated, spire short, flattened, whorls slopingly convex, obliquely plicately wrinkled, spirally conspicuously groove-striated, striae irregular, rather flexuous; violet-white, rather opaque, above semi-transparent, violet beneath; columella twistedly appressed, aperture transverse, scarcely sinuated.

Hab. —?

An elegant species, of convexly depressed form and peculiar opaque- or chalk-white violet-tinged substance.

Species 15. (Fig. 15*a* and 15*b*, Mus. Cuming.)

IANTHINA SMITHIÆ. *Ianth. testā depresso-ovalē, spirā brevī, anfractibus subangustis, decussatim striatis, vix angulatis; anfractis ultimū peripheriā violaceā, spirā et circa columellam albidā; columellā tenuē reflexā.*

SMITH'S IANTHINA. Shell depressly ovate, spire short, whorls rather narrow, decussately striated, scarcely angled; periphery of the last whorl violet, spire and around the columella whitish; columella thinly reflected.

Hab. Glamorganshire, South Wales (left alive on the sands near Penrice Castle): Mrs. Hill.

Since our figure was drawn, from a shell in Mr. Cuming's possession, unaccompanied with any information as to its locality, I had the good fortune to have my attention called to a small box in the cabinet of Mrs. New-

man Smith, containing three undoubted specimens, with the following well-authenticated memorandum of their capture:—

"About twenty-seven years since, Lady Mary Cole (then Lady M Talbot), picked up on the shore by Penrice Castle, two or three of the *Ianth. janthina*, but no more appeared there until three years ago, when many were left on the sands alive.—M. HILL.

"*Llandovery House, April 11th, 1839.*"

The three specimens accompanying this memorandum, especially characterized by the presence of a white band round the columella, being identical with the one figured from Mr. Cuming's collection, are unquestionably distinct from any hitherto described species, and leave no doubt in my mind as to their being a new and valuable addition to the British Fauna. It is with much pleasure I dedicate it to the assiduous conchologist Mrs. Newman Smith, to whom I am indebted for its discovery.



16 a



17 a



17 b



18 a



19 a



19 b



20 a



21 a



21 b



22 b

IANTHINA.

PLATE IV.

Species 16. (Fig. 16 *a* and 16 *b*, Mus. Cuming.)

IANTHINA NITIDA. *Ianth. testā subglobosa, anfractibus rotundatis; ad suturas impressa, obliquè tenè striatis, medio cauciosinuatocuneatis; purpurascete-violacè, albicæ; columella reflexa, subventralitè prolongatâ.*

THE SHINING IANTHINA. Shell somewhat globose, whorls rounded, impressed at the sutures, obliquely finely striated, canallicately sinuated in the middle; purple-tinted violet; columella reflected, somewhat twistedly prolonged.

MENKE, SYD. p. 141. Philipp, Enum. Moll. p. 164. pl. 9. f. 15.

Ianthina prolonyta, Payraudeau.

Hab. Mediterranean.

The shining surface of this species, after which character it is named, appears to be constant.

Species 17. (Fig. 17 *a* and 17 *b*, Mus. Cuming.)

IANTHINA FIRULA. *Ianth. testā globoso-conicâ, anfractibus declinata, spiriferè linearit-suturali; supra nitescente-albâ, infra intensè violacâ, roseo pallidè tinctâ; columellâ tenè reflexâ, parvâ contortâ.*

THE BUTTON IANTHINA. Shell globose-conical, whorls sloping, spirally linearly grooved; above violet-white, beneath deep violet, faintly tinged with rose; columella thinly reflected, but little twisted.

Hab. — ?

Closely allied to *I. fragilis*, but its more globose conic form and rosy colouring render it easily recognized.

Species 18. (Fig. 18 *a* and 18 *b*, Mus. Cuming.)

IANTHINA GLOBOSA. *Ianth. testā globosâ, tenui, inflatâ, spirâ brevi, subimmersâ, anfractibus ad suturas impressis, deinde rotundatis, undique decussatim striatis; cærulescente, ad basin purpureo-violacâ; columellâ tenè reflexâ, prolongatâ; aperturâ ampliâ, patulâ, medio subsinuatâ, ad basin canalliculatâ.*

THE GLOBOSE IANTHINA. Shell globose, thin, inflated. Spire short, somewhat immersed, whorls impressed at the sutures, then rounded, everywhere finely decussately striated; whitish, purple-violet at the spire and at the base; columella thinly reflected, prolonged; aperture large, open, slightly sinuated in the middle, channelled at the base.

SWAINSON, Zoological Illustrations, First Series, vol. ii. pl. 85.

Ianthina prolonyta, Blainville.

Hab. — ?

This fine species is chiefly characterized by the bold inflation of the last whorl, which almost rises into a collar at the point of conjunction of its lip with the penultimate whorl.

Species 19. (Fig. 19 *a* and 19 *b*, Mus. Cuming.)

IANTHINA DECOLLATA. *Ianth. testā globosâ, spirâ brevi, subimmersâ, anfractibus ad suturas impressis, deinde rotundatis, undique subtilitè decussatim striatis; albidâ, ad spiram basiqûe purpurascete-violacente, columellâ tenè reflexâ, superè appressâ, deinde prolongatâ; aperturâ subamplâ, medio subsinuatâ, ad basin canalliculatâ.*

THE DECOLLATED IANTHINA. Shell globose, spire short, somewhat immersed, whorls impressed at the sutures, then rounded, everywhere finely decussately striated; whitish, purple-violet at the spire and base; columella thinly reflected, appressed at the upper part, then prolonged; aperture rather large, slightly sinuated in the middle, channelled at the base.

CARPENTER, Cat. Reigen Coll. in Brit. Mus. p. 187.

Hab. Mazatlan.

Until better information is obtained on the habits of the *Ianthina*, I forbear to disregard this species; but my conviction is that it will prove to be nothing more than a variety of the preceding. There is no specific peculiarity in the apparent decollation of the apex.

Species 20. (Fig. 20 *a* and 20 *b*, Mus. Cuming.)

IANTHINA PALLIDA. *Ianth. testā globosâ, spirâ parvâ, anfractibus ad suturas plano-immersis, deinde rotundatis, undique decussatim striatis; cærulescente, ad basin purpureo-violacâ; columellâ tenuè reflexâ; aperturâ ampliâ, patulâ.*

THE PALE IANTHINA. Shell globose, spire small, whorls flatly immersed at the sutures, then rounded, everywhere decussately striated; bluish, purple-violet at the base; columella thinly reflected; aperture large, open.

HARVEY, THOMPSON, Brit. Marine Conch. p. 132. Forbes and Hanley, Brit. Moll. vol. ii. p. 553. pl. 69. f. 10, 11. *Ianthina patula*, Philippi.

Hab. Miltown Malbay, County Clare, Ireland; Harvey, Mediterranean; Philippi, Madeira; M'Andrew.

Of uniformly smaller size than *I. globosa* and less inflated form.



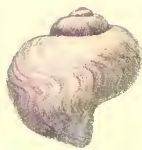
21a



22a



22b



23a



23b



24a



25b



25a



26b



27b

IANTHINA.

PLATE V.

Species 21. (Fig. 21a and 21b, Mus. Cuming.)

IANTHINA EXIGUA. *Ianth. testâ emisso-torculari, spirâ elatâ, suturis inapertis, aperturâ conici, anfractibus rotundatis, concentricis lamellato-nervosis, rugis medio sinuatis; intus rubicundâ, pellucidâ; columellâ brevissimâ, parvâ reflexâ, aperturâ parvâ, medio emarginatâ.*

THE LITTLE IANTHINA. Shell solidly turbinate-d, spire raised, with the suture immixed, sharp at the apex, whorls rounded, concentrically lamellately wrinkled, wrinkles sinuated in the middle; deep-violet, transparent; columella rather small, but little reflected; aperture small, notched in the middle.

LAMARCK, ANIM. SENS. VERT. VOL. III. P. 6.

Hab. Cornwall; Turin. *Comesata*; Shuttleworth.

This little species may be regarded as the British form of Mr. Nuttall's *I. ligula*. The surface is similarly wrinkled with fine lamellar ridges, which incline into a sinus in the middle, arising throughout the growth of the shell by the notch in the aperture; and the spire is more conically turbinate than in any other species of the genus. I cannot agree with Forbes and Haudey in quoting *I. violacea*, De Blainville, and *I. nana*, Quoy and Gaimard, as synonyms of *I. exigua*. It is, however, easier to say what those species are not, than to determine what they are.

Species 22. (Fig. 22a and 22b, Mus. Brit.)

IANTHINA UMBILICATA. *Ianth. testâ subgloboso-ovata, tenui, pellucidâ, spirâ turbinatâ, anfractibus convexis, minutissimè concentricè striatis, striis medio in variâ sinuatis; violaceis; columellâ reclinâ, tenuè reflexâ, subumbilicatâ.*

THE UMBILICATED IANTHINA. Shell somewhat globose-ovate, thin, transparent, spire turbinate, whorls convex, very minutely concentrically striated, striae sinuated in the middle into a keel; violet; columella straight, thinly reflected, slightly umbilicated.

D'ORBIGNY, MS. in Mus. Brit.

Hab. —?

This species, of which D'Orbigny's original type is in the British Museum, is much smaller than *I. exigua*. The shell is slightly umbilicated, and the fine concentric striae

incline rather to sinuate round the periphery of the last whorl into a keel.

Species 23. (Fig. 23a and 23b, Mus. Cuming.)

IANTHINA TRICOLOR. *Ianth. testâ subglobosâ, tenuissimâ, spirâ obtusè conicâ, plus minus immerâ, anfractibus subangustis, rotundatis, concentricè irregulariter plicato-striatis, striis medio sinuatis; purpurascens-violaceâ, pellucido-iridescente; columellâ vix reflexâ, subcontortâ; aperturâ parvâ, basè subcanaliculatâ.*

THE RAINBOW-COLOURED IANTHINA. Shell somewhat globose, very thin, spire obtusely conical, more or less immersed, whorls rather narrow, rounded, concentrically irregularly plicately striated, striae sinuated in the middle; purple-violet, transparently iridescent; columella scarcely reflected, rather twisted; aperture open, slightly channelled at the base.

This species is unquestionably distinct from *I. globosa*. It is of a lighter and more transparent texture, and is violet-tinged throughout, the colour being characterized by a more iridescent hue. The whorls are narrower, less globose-ly inflated, and the striae of growth are more roughly gathered into folds, inclining to a peripheral sinus.

Species 24. (Fig. 24a and 24b, Mus. Cuming.)

IANTHINA STRIOLATA. *Ianth. testâ globosâ, solidiusculâ, spirâ obtusè conicâ, plus minus immerâ, anfractibus convexis, imbricatis, spirâ peculiariter linearisulcatis, sulcis undulatis, valdè irregularibus; violascente-albâ, medio subopacâ, nitentè; columellâ sublatè reflexâ, appressâ; aperturâ mediocrî, haud sinuatâ.*

THE CHAMFERED IANTHINA. Shell globose, rather solid, spire obtusely conic, more or less immersed, whorls convex, rather swollen, spirally peculiarly linearly grooved, grooves waved, very irregular; violet-white, somewhat opaque in the middle, shining; columella rather broadly reflected, appressed; aperture middling, not sinuated.

ADAMS and REEVE, Moll. Voy. Samarang, p. 54. pl. 11. f. 9.

Hab. Pacific Ocean.

Chiefly distinguished by an irregular waved pattern of linear grooving. The shell is of rather a solid texture

for this genus, shining opaque-white, tinged with violet of a peculiarly delicate hue. There is no sinus in the aperture, and consequently no spiral sinuation of the striae of growth on the periphery.

Species 25. (Fig. 25 a and 25 b, Mus. Cuming.)

IANTHINA BIFIDA. *Ianth. testā turbinatā, spirā acuminato-conicā, anfractibus rotundatis, subangustis, concentricè densè lamellato-striatis, striis medio perobliquè sinuatis; intensè violacè; columellā tenuè reflectā, arcuatā; aperturā parvā, enormiter emarginatā.*

THE BIFID IANTHINA. Shell turbinated, spire acuminately conic, whorls rounded, rather narrow, concentrically densely lamellately striated, striae very obliquely sinuated in the middle; deep-violet; columella thinly reflected, arched; aperture small, enormously notched.

NUTTALL, Jay's Catalogue of Shells, p. 68.

Hab. Pacific Ocean (Sandwich Islands); Nuttall.

The densely set lamellar striae are less conspicuously wrinkled in this species than in its congener *I. ezigua*. Its principal characteristic is the enormous notch in the aperture, which gives the lip a bifid structure.

IANTHINA.

	Plat.	Species.		Plat.	Species.
<i>affinis, Reece</i>	I.	2	<i>grandis, Reece</i>	I.	3
<i>Africana, Reece</i>	II.	8	<i>involuta, Reece</i>	III.	12
<i>balteata, Reece</i>	III.	11	<i>iricolor, Reece</i>	V.	23
<i>bicolor, Menke</i>	I.	5	<i>nitens, Menke</i>	IV.	16
<i>bifida, Nuttall</i>	V.	25	<i>pallida, Harvey</i>	IV.	20
<i>Britannica, Leach</i>	III.	13	<i>penicephala, Péron</i>	I.	5
<i>casta, Reece</i>	I.	4	<i>planospirata, Adams and Reece</i>	II.	9
<i>caeruleata, Reece</i>	II.	7	<i>prolongata, Payraudeau</i>	IV.	16
<i>communis, Lamarck</i>	I.	5	<i>prolongata, Blainville</i>	IV.	18
<i>decollata, Carpenter</i>	IV.	19	<i>roseola, Reece</i>	I.	1
<i>depressa, Reece</i>	III.	14	<i>Smithii, Reece</i>	III.	15
<i>exigua, Lamarck</i>	V.	21	<i>striolata, Carpenter</i>	II.	6
<i>fibula, Reece</i>	IV.	17	<i>striolata, Adams and Reece</i>	V.	24
<i>fragilis, Lamarck</i>	II.	6	<i>trochoides, Reece</i>	II.	10
<i>globosa, Swinson</i>	IV.	18	<i>umbilicata, D'Orbigny</i>	V.	22

MONOGRAPH
OF THE GENUS
C O L U M B E L L A.

Mis-shapen chaos of well-seeming forms'

Shelley



1a

2b



2c

3a



3c



3c

4b



4b

COLUMBELLA.

PLATE I.

Genus COLUMBELLA, Lamarck.

Testa parviuscula, ovato-oblonga vel trigona, interdum acicularis vel fusiformis, plerumque solida, aut levigata aut costata. Columella saepe arcuata, interdum denticulata, labro plerumque incrassato, plus minus varicoso, intus denticulato.

Shell rather small, ovately oblong or triangular, sometimes acicular or fusiform, generally solid, either smooth or ribbed. Columella often arched, sometimes denticulated, lip generally thickened, more or less varicose, denticulated within.

The genus *Columbella*, as defined by the members of the Lamarckian school of conchology, is not a satisfactory one. Originally it served for the grouping of about a dozen to eighteen species, characterized in a special manner, like *C. rustica*, *mercatoria*, and *strombiformis*, by the development of a row of teeth on an inner swelling of the lip; but since Lamarck's time upwards of two hundred species of shells have come to light, of not one of which have we any knowledge of the animals, all having a more or less obvious indication of this character, extremely diverse in form and texture, and not wanting in the characteristics which usually go to determine distinct genera. Even Dr. Gray, the Messrs. Adams, and other more subtle followers of the school of De Montford, have failed to bring their analytical powers to bear on the varied forms which come under the head of *Columbella*; and the genus must still remain as a receptacle for that incongruous residuum of shells which are characterized by the presence of denticles on the inner surface of the lip.

The geographical range of the *Columbellæ* lies chiefly on the western shores of South and Central America. A few small species inhabit the West Indies, and some very characteristic forms have been collected at Australia and New Zealand: some are also from the Philippine Islands. The genus is unknown to Britain, and only one species, *C. rustica*, may be said truly to belong to the Mediterranean.

Species 1. (Fig. 1 a, b, Mus. Cuming.)

COLUMBELLA ANGULARIS. *Col. testâ oblongo-pyramidalî, pallidâ, fusco variâ, spirâ subulatâ, anfractibus decem, longitudinaliter costatis, ultimi medio gibboso-angulato, basi reflexo; aperturâ subquadratâ, canali longiusculo, lato, labro incrassato.*

THE ANGULAR COLUMBELLA. Shell oblong-pyramidal, pale, variegated with brown, spire subulate, whorls ten, longitudinally ribbed, middle of the last whorl gibbously angled, reflected at the base; aperture somewhat square, canal rather long, broad, lip thickened.

SOVERBY, Pro. Zool. Soc. 1832, p. 118.

Hab. Panama.

A single specimen only of this remarkable species was collected by Mr. Cuming, thirty years since, at the above-named locality.

Species 2. (Fig. 1 a, b, c, Mus. Cuming.)

COLUMBELLA TURRITA. *Col. testâ elongato-pyramidalâ, spirâ subulatâ, anfractibus decem, albidis, fusco reticulatis, prope suturam articulatis; aperturâ oblongâ, superne acuminatâ, subcanaliculâ, labro incrassato, peritremate albo, subreflexo, intus levi, columellâ arcuatâ.*

THE TURRETED COLUMBELLA. Shell elongately pyramidal, spire subulate, whorls ten, whitish, reticulated with brown, articulated near the suture; aperture oblong, acuminate at the upper part, somewhat channelled, lip thickened, peritreme white, a little reflected, smooth within, columella arched.

SOVERBY, Pro. Zool. Soc. 1832, p. 115.

Hab. Bay of Montijo and St. Elena, Central America (found in coarse gravel and sand, at a depth of ten fathoms); Cuming.

Of the same subulate form as the preceding species, but smooth, and rather stout, densely reticulated with brown.

Species 3. (Fig. a, b, c, Mus. Cuming.)

COLUMBELLA LANCEOLATA. *Col. testâ fusiformi-oblongâ, turrîtâ, albâ, fusco variâ, spirâ acuminato-pyramidalî, anfractibus decem ad duodecim, serie unicâ tuberculorum instructis, ultimi dorso subgibbo, parte inferiore transversim striatâ, aperturâ elongatâ, ad basin subcanaliculatâ et recurvâ, labro incrassato, varicoso, intus medio tumido et denticulato.*

THE LANCEOLATE COLUMBELLA. Shell fusiformly oblong, turreted, whitish, variegated with brown, spire acuminately pyramidal, whorls ten to twelve, furnished with a single row of tubercles, back of the last whorl

rather gibbous, lower portion transversely striated; aperture elongate, slightly channelled and recurved at the base, lip thickened, varicose, swollen and denticulated within in the middle.

SOEWERY, Pro. Zool. Soc. 1832, p. 116.

Hab. Galapagos Islands (found in coral sand, at a depth of from six to eight fathoms); Cuming.

A fine fusiform species, of solid structure, armed throughout with a row of tubercles.

Species 4. (Fig. a, b, Mus. Cuming.)

COLUMBELLA ELEGANS. *Col. testā elongato-subulatā, albā, fusco variegatā et reticulatā, epidermide tenui, fimbriatā, anfractibus undecim ad duodecim, primis paucis levibus, cæteris longitudinaliter costatis, ultimo infu spiritaliter sulcato; aperturā parviusculā, oblongā,*

columellā subarcuatā, labro incrassato, varicoso, intus validē dentato.

THE ELEGANT COLUMBELLA. Shell elongately subulate, white, variegated and reticulated with brown, covered with a thin fulvous epidermis, the first few whorls smooth, the rest longitudinally ribbed, the last spirally grooved below; aperture rather small, oblong, columella slightly arched, lip thickened, varicose, strongly toothed within.

SOEWERY, Pro. Zool. Soc. 1832, p. 114.

Hab. Guacamayo, Central America (found in sandy mud) Cuming.

This species, as its name truly denotes, is the most elegant of the genus. Of solid growth, tapering sharply to the apex, the whorls are ribbed with peculiar lightness and regularity, and the main generic character of the genus—the inner teeth of the lip—is unusually strongly developed.



5a.



5a.



6b.



7a.



8a.



8b.



7b.



9a.



9b.



5b.

COLUMBELLA.

PLATE II.

Species 5. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA HYEMARTIOSA. *Col. testâ oblongâ, levigatâ, apice acuminatâ, anfractibus septem ad octo, costânis albo maculatis, aperturâ elongatâ, flexuosâ, labio externo costâ tenuissimâ, supernâ prominente, albo, peritreme nigrâ, intus denticulatâ, columellâ multotuberculatâ.*

THE RED-SHOT FINE COLUMBELLA. Shell oblong, smooth, apex acuminate, whorls seven to eight, chestnut spotted with white, aperture elongated, flexuous, outer lip thickened without, prominent at the upper part, white, peritreme orange, denticulated within, columella one-tubercled.

SOWERBY, Pro. Zool. Soc. 1832, p. 116.

Hab. Galapagos Islands and Panama (under stones); Cuming.

Prettily characterized by an orange-red mouth, contracted and tubercled in the middle.

Species 6. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA CASTANEA. *Col. testâ ovato-oblongâ, costânet, punctatis albidis conspersâ, spirâ breviusculâ, acuminatâ, anfractibus quinque, supernâ anguliferâ, ultimo magno ad basin spiritaliter sulcato; aperturâ elongatâ, flexuosâ, peritreme aurantiâ, labio externo intus denticulatâ, interno supernâ collifero, medio albo, crosso, infra plicato-rugoso.*

THE CHESTNUT COLUMBELLA. Shell ovately oblong, chestnut, sprinkled with whitish dots, spire rather short, acuminate, whorls five, angular at the upper part, the last large, spirally grooved at the base; aperture elongated, flexuous, peritreme orange, outer lip denticulated within, inner lip callous at the upper part, white and eroded in the middle, below plicately wrinkled.

SOWERBY, Pro. Zool. Soc. 1832, p. 118.

Hab. Real Llejos, Central America.

A minutely dotted chestnut shell, peculiarly depressly-angled at the suture.

Species 7. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA MAJOR. *Col. testâ ovatâ, medio gibbosâ, castaneâ albo punctatâ et strigatâ, spirâ pyramidalâ, armiatâ, anfractibus sex ad septem, levigatis, ultimo maximo, supernâ rotundato-turgidâ, infra spiritaliter sulcato; aperturâ elongatâ, flexuosâ, albâ, supernâ angulatâ, labio externo supernâ obtusè angulato, albo, intus denticulatâ, labio columellari supernâ collifero, infra plicato-rugoso.*

THE LARGER COLUMBELLA. Shell ovate, gibbous in the

middle, chestnut dotted and striped with white, spire pyramidal, acuminate, whorls six to seven, smooth, the last very large, rotundately swollen at the upper part, spirally grooved below; aperture elongated, flexuous, white, angled at the upper part, outer lip obtusely angled at the upper part, white, denticulated within, columellar lip callous at the upper part, plicately wrinkled below.

SOWERBY, Pro. Zool. Soc. 1832, p. 119.

Hab. Island of Muerte, West Columbia (under stones); Cuming.

Closely allied to *C. Strombiformis*, from which species it chiefly differs in having the spire more acuminate.

Species 8. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA STROMBIFORMIS. *Col. testâ trigono-ovatâ, turgidâ, castaneâ albo strigatâ, spirâ breviusculâ, acutâ, anfractibus sex supernâ obtusè angulatis, suturis subimpressis; labio externo supernâ prominente, medio contracto, intus incrassato et tenuidenticulatâ.*

THE STROMBUS-SHAPED COLUMBELLA. Shell triangularly ovate, swollen, chestnut streaked with white, spire rather short, sharp, whorls six, obtusely angled at the upper part, with the sutures rather impressed; outer lip prominent at the upper part, contracted in the middle, thickened and finely denticulated within.

LAMARCK, Anim. sans vert. vol. x. p. 366.

Hab. Island of Muerte, West Columbia; Cuming.

This species has very much the appearance of the last, differing in having a sharper and less pyramidal spire sunk at the sutures.

Species 9. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA FUSCATA. *Col. testâ ovato-acuminatâ, medio ventricosâ, castaneâ albo guttatâ, epidermide fuscâ indatâ, spirâ acutâ, anfractibus septem, levigatis; aperturâ elongatâ, flexuosâ, peritreme albo aut violaceo, intus denticulatâ, columellâ infernâ denticulatâ.*

THE FUSCOUS COLUMBELLA. Shell ovately acuminate, ventricose in the middle, chestnut dotted with white, covered with a fuscous epidermis, spire sharp, whorls seven, smooth; aperture elongated, flexuous, peritreme white or violet, denticulated within, columella denticulated below.

SOWERBY, Pro. Zool. Soc. 1832, p. 117.

Hab. Panama and West Columbia (under stones); Cuming.

Of a smooth oval form, profusely white-dotted upon a dark livid-chestnut ground.



11a.



10a.



11b.



12a.



13a.



12b.



13b.



14a.



14b.



15b.

COLUMBELLA.

PLATE III.

Species 10. (Fig. g. Mus. Cuming.)

COLUMBELLA PYRAMIDATA. *Col. testâ levâ, spirâ subulâ, apice, subulâ, hinc, tridivâ, superiore, aperturâ contractâ, subulâ, spirâ, levâ, subulâ, longitudinaliter pinnatâ, fuscâ, levâ, hinc, aperturâ, levâ; labiâ exteriorâ incrassatâ, peritremâ levâ, labiâ interno levâ, pinnâ, levâ, hinc, levâ.*

THE LADDER COLUMBELLA. Shell ovate, spire subulose steep, whorls nine, livid-purple, spirally grooved, the last ventricose, spirally ridged and grooved, longitudinally plicated; yellowish, ridges finned with red; outer lip thickened, peritreme polished, emarginated within at the upper part, denticulated beneath, inner lip thin, polished, canal recessed.

SOWERBY, *Proc. Zool. Soc.* 1832, p. 113.

Hab. Gulf of Dulac, Central America.

Only a single specimen of this remarkable species has been discovered. It was dredged by Mr. Cuming in the deep-seamed locality from a sandy muddy bottom, at the depth of ten fathoms.

Species 11. (Fig. a, b, Mus. Cuming.)

COLUMBELLA SCALARINA. *Col. testâ ovatâ, longitudinaliter costatâ, spirâ pyramidalâ, albâ, intense castaneo fuscâ et varifuscâ, anfractibus sex ad septem, aperturâ abrupte angulatâ, costarum interstitiis decussatâ, aperturâ contractâ, superâ emarginatâ, peritremâ levâ denticulatâ.*

THE LADDER COLUMBELLA. Shell ovate, longitudinally finely ribbed, spire pyramidal, white, stained and broadly banded with dark-chestnut, whorls six to seven, abruptly angled at the upper part, interstices between the ribs decussate, aperture contracted, emarginated at the upper part, peritreme denticulated within.

SOWERBY, *Proc. Zool. Soc.* 1832, p. 116.

Hab. Panama (under stones), Cuming.

Densely finely flexuously ribbed throughout, the whorls being turgid and abruptly angled at the upper part.

Species 12. (Fig. a, b, Mus. Cuming.)

COLUMBELLA FASCIATA. *Col. testâ oblongâ, levâ, apice obtusâ, versus basin spirâ levâ subulâ, anfractibus*

quinque ad sex, superâ, minus incrassatâ, rufa-castanea, muscularis aperturâ albâ prominens levâ; labiâ exteriorâ subincrassatâ, levâ obsolete denticulatâ, labiâ interno levâ, excavatâ.

THE BANDED COLUMBELLA. Shell oblong, smooth, obtuse at the apex, spirally grooved towards the base, whorls five to six, concavely impressed at the upper part; reddish-chestnut, prominently sprinkled with small white spots - outer lip slightly thickened, obsoletely denticulated within, inner lip smooth, excavated.

SOWERBY, *Tankerville Catalogue*, App. p. 25.

Hab. —?

An obtuse oblong-ovate smooth shell, the pattern of which is spotted rather than banded.

Species 13. (Fig. a, b, Mus. Cuming.)

COLUMBELLA GUTTATA. *Col. testâ oblongo-pyramidalâ, levâ, albidâ, fulvo-castaneâ, guttis albis profuse sparâ, spirâ acuminatâ, anfractibus sex, planulatâ; labiâ exteriorâ, levâ, interno excavatâ.*

THE SPOTTED COLUMBELLA. Shell oblong-pyramidal, smooth, shining, fulvous-chestnut, profusely sprinkled with white spots, spire acuminated, whorls six, rather flattened, outer lip thin, inner excavated.

SOWERBY, *Thesaurus Conchylorum*, p. 131. pl. 39. f. 124

Hab. —?

Closely allied to the preceding species, but smoother and more pyramidally elongated.

Species 14. (Fig. a, b, Mus. Cuming.)

COLUMBELLA VARIA. *Col. testâ oblongâ, decussato-costatâ, apice acuminatâ, anfractibus octo ad novem, costarum albo variegatis, costis flexuosis; aperturâ parvisculâ, labiâ exteriorâ parvâ incrassatâ, vir denticulatâ.*

THE VARIABLE COLUMBELLA. Shell oblong, decussately ribbed, acuminated at the apex, whorls eight to nine, chestnut variegated with white, ribs flexuous; aperture rather small, outer lip but little thickened, scarcely denticulated.

SOWERBY, *Proc. Zool. Soc.* 1832, p. 116.

Hab. Panama (under stones), Cuming.

The sculpture of flexuous ribs which encircle this species is similar in character to that of *C. scalarina*. The shell is of a more acuminately oval form.



16a



15a



16b



17a



15a



18b



17b



13a



15b



13b

COLUMBELLA.

PLATE IV.

Species 15. (Fig. 15, Mus. Cuming.)

COLUMBELLA DORRYA. Col. testâ oblongo-pyramidali, albâ, lineis circumscriptis flexuosis confertis costulis cæcatis, antivolubus toto, lamellis, superâe largis, utriusq; latioribus apicibus, dorso prominente, utroque distinetâ; aperturae angustâ, flexuosa, albâ, peritreme testis incrassata, latâ deulcatalo, labio columbellari emarginato.

THE HUMPED COLUMBELLA. Shell oblong, pyramidal, white, covered with close-set irregular flexuous lines, whorls eight, smooth, swollen at the upper part, sides of the last whorl inflated, back prominent, suture distinct; aperture narrow, flexuous, white, peritreme thickened without, deulcated within, columellar lip excavated.

SOWERBY, Pro. Zool. Soc. 1832, p. 120.

Hab. Isle of Muerre and Bay of Guayaquil, West Columbia; Cuming.

Allied to *C. gibberula*, but of larger size, having the columella excavated in the middle.

Species 16. (Fig. a, b, Mus. Cuming.)

This shell, which partakes of the characters of *Columbella* and *Pleurostoma*, has already been described and figured under the latter genus, Pl. XII. Sp. 106, *Pleurostoma clavatum*.

Species 17. (Fig. a, b, Mus. Cuming.)

COLUMBELLA FUSIFORMIS. Col. testâ angustâ fusiformi, lasâ attenuatâ et recurvâ, spirâ acuminato-turrâ, infractibus decem ad undecim, septem prius longitudinaliter costatis, deinde levibus, superâe concavo-depressis, utriusq; tuberculato, albo, rufescente-spadiceo levigato; labio externo reflexo.

THE FUSIFORM COLUMBELLA. Shell narrowly fusiform, attenuated and recurved at the base, spire acuminately turreted, whorls ten to eleven, the first seven longitudinally ribbed, then smooth, concavely slanting at the upper part, last whorl bi-tubercled, white, freckled with reddish-fawn; outer lip reflected.

HINDS, Moll. Voy. Sulphur, pl. 10. f. 17, 18.

Hab. —?—

The longest and most fusiform species of the genus, the spire being sharply acuminately turreted, and the basal canal produced and recurved.

Species 18. (Fig. a, b, Mus. Cuming.)

COLUMBELLA RECURVA. Col. testâ oblongâ, turrâ, fulcâ, spirâ acuminato-pyramidali, infractibus decem ad undecim, sex prius longitudinaliter costatis, cæteris serie tuberculorum unâ instructis, utriusq; dorso subgibbo, parte inferiori transversim sulcatâ; apertura angustâ, canali recurvo, labio externo reflexo, valdè incrassato, intus tuberculato.

THE RECURVED COLUMBELLA. Shell oblong, turreted, fulvous, spire acuminately pyramidal, whorls ten to eleven, first six longitudinally ribbed, the rest furnished with a single row of tubercles, back of the last whorl rather gibbous, lower part transversely grooved; aperture narrow, canal recurved, outer lip reflected, very much thickened, tubercled within.

SOWERBY, Pro. Zool. Soc. 1832, p. 115.

Hab. Isle of Plata, South America (in coral sand, at depth of seventeen fathoms); Cuming.

Of more solid structure than the preceding species, less attenuated at the base.

Species 19. (Fig. a, b, Mus. Cuming.)

COLUMBELLA MACULOSA. Col. testâ subulatâ, albidâ, fulvescente-rufa irregulariter maculosâ, spirâ acuminato-pyramidali, infractibus novem ad decem, septem ad octo prius laciniatis, cæteris tuberculorum serie unâ coronatis; apertura brevi, canali subrecurvo.

THE SPOTTED COLUMBELLA. Shell subulate, whitish, irregularly spotted with fulvous-red, spire acuminately pyramidal, whorls nine to ten, the first seven or eight smooth, the rest coronated with a single row of tubercles; aperture short, canal slightly recurved.

SOWERBY, Pro. Zool. Soc. 1832, p. 116.

Hab. Guancayo, Central America (in sandy mud); Cuming.

Chiefly distinguished by its sharply acuminated spire, which is almost of *Terebra*-like proportions.



20a.



21a.



21b.



22a.



22b.



23a.



24a.



24b.



25a.



26a.

COLUMBELLA.

PLATE V.

Species 20. (Fig. a, b, Mus. Cuming.)

COLUMBELLA LARVISA. *Col. testâ trigono-ovata, laevigatâ, caroloseo-rosâ, limbo rufis angulato, spirâ brevi, rotâ, anfractibus quinque superâ depresso-retundatis, dentibus planulatis apertura angustâ, labio externo callosâ incrassato, albo, latè collato, intus denticulato.*

THE LIPPED COLUMBELLA. Shell irregularly ovate, smooth, bluish-green, encircled with red lines, spire short, sharp, whorls five, obtusely rounded at the upper part, then rather flat; aperture narrow, outer lip very much thickened, white, broadly callous, denticulated within.

SOWERBY, Genera of Shells, No. 9.

Hab. St. Elena, West Columbia; Cuming.

Chiefly distinguished by its callously thickened outer lip and peculiar painting of red lines upon a shining blue-green ground.

Species 21 (Fig. a, b, Mus. Cuming.)

COLUMBELLA ASPERSA. *Col. testâ oblongo-ovata, levi, albâ, costâso reticulatâ et sauculatâ, spirâ subacuminatâ, apice obtuso, anfractibus sex, superâ retundatis, ad basin obsolete striatis; apertura flexuosâ, labio externo medio tuberculato, denticulis fere obsolete.*

THE SPINKLED COLUMBELLA. Shell oblong-ovate, smooth, white, reticulated and spotted with chestnut, spire somewhat acuminate, apex obtuse, whorls six, rounded at the upper part, obsolete striated at the base; aperture flexuous, outer lip tubercled in the middle, teeth nearly obsolete.

SOWERBY, Thesaurus Conch. vol. i. p. 123. pl. 37. f. 79. 80.

Hab. — ?

The whorls of this species are peculiarly rounded at the upper part, giving an impressed character to the suture.

Species 22. (Fig. a, b, Mus. Cuming.)

COLUMBELLA JAVACENSIS. *Col. subfusiformi-oblongâ, laevigatâ, purpurascete-spaticâ, levigatâ, spirâ acuminatâ, suturâ distinctâ, anfractibus sex ad septem, superâ convexo-impressâ, ad basin latè sulcatâ; apertura ovata, labio externo intus denticulato, purpurascete tincto, labio columellari excavato.*

THE JAVA COLUMBELLA. Shell somewhat fusiformly oblong, smooth, purple-fawn, freckled, spire acumi-

nated, suture distinct, whorls six to seven, convexly impressed round the upper part, broadly grooved at base; aperture ovate, outer lip denticulated within, purple-stained, columellar lip excavated.

GAS-KOIN, Pro. Zool. Soc. 1848.

Hab. Java.

Shell fusiformly ovate fawn-coloured shell, tinged with light-purple.

Species 23. (Fig. a, b, Mus. Cuming.)

COLUMBELLA PAYTENSIS. *Col. testâ trigono-ovata, subventricosa, costâ, albâ punctatâ, spirâ parvâ acuminatâ, anfractibus septem, superâ depresso-angulatis; apertura oblongâ, labio externo flexuoso, subincrassatâ intus denticulato, labio columellari subincavato.*

THE PAYTA COLUMBELLA. Shell triangularly ovate, somewhat ventricose, chestnut, white-dotted, spire but little acuminate, whorls seven, compressly angled at the upper part; aperture oblong, outer lip flexuous, slightly thickened, denticulated within, columellar lip somewhat excavated.

LESSON, Voyage de la Coquille.

Columbella Paytalida, DuRoi.

Columbella sparca, Sowerby.

Hab. Inner Lobos Island, Peru (under stones); Cuming.

A minutely-dotted adust shell, rather ventricose, with the whorls narrowly depressly angled round the upper part.

Species 24. (Fig. a, b, Mus. Cuming.)

COLUMBELLA TRINGA. *Col. testâ oblongo-cylindrica, laevigatâ, albâ, maculis rufis inaequalibus flexuosis pictâ, spirâ sublongatâ, obtusâ, suturâ distinctâ, anfractibus octo ad novem, convexo-planis, ad basin sulcatâ; apertura subangustâ.*

THE RED AND WHITE COLUMBELLA. Shell oblong, cylindrical, smooth, white, painted with unequal flexuous red spots, spire rather elongated, suture distinct, whorls eight to nine, convexly flattened, grooved at the base; aperture rather narrow.

SOWERBY, Thesaurus Conch. vol. i. p. 119. pl. 37. f. 62.

Mitra tringa, Lamarek.

Hab. — ?

Very like the cylindrical forms of *Mitra*, and first described in that genus by Lamarek. The *Columbella* is however devoid of plaits.



24 a.



25 a.



26 b.



27 a.



28 a.



28 b.



27 b.



25 b.



26 a.



25 c.

COLUMBELLA.

PLATE VI.

Species 25. (Fig. a, b. Mus. Cuming.)

COLUMBELLA SPLENDIDA. *Col. testâ oblongâ, levi, aurantiacâ, maculis albis costaeisque variegatâ, spirâ breviusculâ, suturâ impressâ, anfractibus septem ad octo, brevibus, versus basin latè sulcatis; aperturâ flexuosâ, labio externo incrassato, intus denticulato.*

THE SPLENDID COLUMBELLA. Shell oblong, smooth, orange variegated with white and chestnut spots, spire rather short, with the suture impressed, whorls seven to eight, short, broadly grooved towards the base; aperture flexuous, outer lip thickened, denticulated within.

SOWERBY, *Thesaurus Conch.* vol. i. p. 120. pl. 37. f. 65, 66.

Hab. Island of Corregidor, Bay of Manila (in coarse sand, at the depth of seven fathoms); Cuming.

Characterized by a peculiar obtusely cylindrical spire, and a rudely tessellated surface.

Species 26. (Fig. a, b. Mus. Cuming.)

COLUMBELLA PAVONINA. *Col. testâ subfusiformi, basi contractâ et recurvâ, cinerascens-albâ, fulvo-castaneo oblique latistrigatâ, spirâ acuminatâ, anfractibus sex ad septem, brevibus, convexis, ad basin lineari-sulcatis; aperturâ parvisculâ, labio externo incrassato, intus denticulato.*

THE PEACOCK COLUMBELLA. Shell somewhat fusiform, contracted and recurved at the base, ash-white, obliquely broadly striped with fulvous-chestnut, spire acuminated, whorls six to seven, short, convex, linearly grooved at the base; aperture rather small, outer lip thickened, denticulated within.

HINDS, *Moll. Voy. Sulphur,* pl. 10. f. 19. 20.

Hab. — ?

Typically distinguished from any other species of the genus by its thickened fusiform shape and contracted base.

Species 27. (Fig. 27 and 28, a, b. Mus. Cuming.)

COLUMBELLA FLAVA. *Col. testâ cylindraceo-oblongâ, levi, favescente-rufâ, albo maculatâ et punctatâ, spirâ subacuminatâ, anfractibus plano-convexis, ad basin lineari-sulcatis; aperturâ parvisculâ, labio externo parum incrassato, intus denticulato.*

THE YELLOWISH COLUMBELLA. Shell cylindrically oblong, smooth, yellowish-red, spotted and dotted with white, spire somewhat acuminated, whorls flatly convex, linearly grooved at the base; aperture rather small, outer lip but little thickened, denticulated within.

Buccinum flavum, Bruguière, *Diet. No.* 53.

Columbella flavida, Lamarck.

Hab. — ?

A cylindrically oblong shell, neatly blotched and dotted with white upon a yellowish-red ground.

Species 29. (Fig. a, b. Mus. Cuming.)

COLUMBELLA CORONATA. *Col. testâ oblongo-acuminatâ, albâ, brunneo variegatâ, anfractibus septem ad octo, lævibus, tribus ultimis serie unâ tuberculorum macronatorum coronatis; labio externo intus denticulato.*

THE CORONATED COLUMBELLA. Shell oblong acuminated, white, variegated with brown, whorls seven to eight, smooth, the last three coronated with a row of pointed tubercles; outer lip denticulated within.

SOWERBY, *Pro. Zool. Soc.* 1832, p. 114.

Hab. Bay of Panama.

The variegated brown painting of this species has mostly a freckled reticulated appearance.



261.



262.



263.



264.



265.



266.



267.



268.



269.



270.

COLUMBELLA.

PLATE VII.

Species 30. (Fig. a, b, Mus. Cuming.)

COLUMBELLA HARPIFORMIS. *Col. testâ ovato-subtriangulâ, nigri, albo maculatâ, aperturâ tenui fultâ indatâ; spirâ brevi, acutâ, anfractibus sex ad septem, superiè angulatis et nodatis, costis r. nodis obliquè descendenti-bus; aperturâ elongatâ, in canalem prominentem superiè productâ, labio externo incrassato, latè inflexo, catus denticulato, ovali subrecurvo.*

THE HARP-SHAPED COLUMBELLA. Shell ovately sub-triangular, black, spotted with white, covered with a thin fulvous epidermis, spire short, sharp, whorls six to seven, angled and noded at the upper part, with ribs obliquely descending from the nodules; aperture elongated, produced at the upper part into a prominent canal, outer lip thickened, broadly reflected, denticulated within, canal slightly recurved.

SOWERBY, Pro. Zool. Soc. 1832, p. 113.

Hab. Bay of Panama (found on dead shells in ten fathoms); Cuming.

Curiously distinguished from all other species of the genus by its channel-winged aperture, which gives the shell a characteristic harp shape.

Species 31. (Fig. a, b, Mus. Cuming.)

COLUMBELLA VARICOSA. *Col. testâ oblongo-acuminatâ, fulvescente, nigro reticulatâ et punctatâ, ad suturas apaco-albâ, spirâ terribi, anfractibus sex ad septem, varicoso-costatis; aperturâ parviusculâ, labio externo superiè sinuato, catus denticulato.*

THE VARICOSE COLUMBELLA. Shell acuminately oblong, fulvous, reticulated and dotted with black, opaque white at the sutures, spire turreted, whorls six to seven, variably ribbed; aperture rather small, outer lip thickened, notched towards the upper part, denticulated within.

GASKOIN, Pro. Zool. Soc. 1848.

Hab. Payta, Peru.

Obliquely sculptured throughout with narrow ribs descending with the angular declivity of the whorls.

Species 32. (Fig. a, b, Mus. Cuming.)

COLUMBELLA RUGOSA. *Col. testâ oblongâ, medio gibbosalâ, albâ, maculis peramplis nigris finctâ, spirâ turribi, ad apicem plerumque erosa, anfractibus septem, longitudinaliter rugoso-costatis, costis superiè tuberculatis; aperturâ subapertâ.*

THE RUGOSE COLUMBELLA. Shell oblong, rather gibbous in the middle, whitish, stained with large black blotches, spire turreted, generally eroded at the apex, whorls seven, longitudinally rugosely ribbed, ribs tubercled at the upper part; aperture rather open.

SOWERBY, Pro. Zool. Soc. 1832, p. 115.

Hab. Panama and Xipixapi (under stones); Cuming.

A strongly tubercled chalk-white shell, pic'd with one or two large black blotches.

Fig. 33. (Fig. a, b, Mus. Cuming.)

This shell, though so unlike the preceding in appearance, is nevertheless a variety, in which the tubercles are modified into concentric sutural ridges.

Species 34. (Fig. a, b, Mus. Cuming.)

COLUMBELLA FLEXOSA. *Col. testâ fusiformi-oblongi, albâ, fusco densè flexuoso-reticulatâ, spirâ acuminatâ, anfractibus sex, plano-convexis; aperturâ parvâ, labio externo incrassato.*

THE FLEXUOSE COLUMBELLA. Shell fusiformly oblong, white, densely flexuously reticulated with brown, spire acuminated, whorls six, flatly convex; aperture small, outer lip thickened.

Buccinum flexuosum, Lamarck, Anim. sans vert. vol. x. p. 175.

Hab. ———?

Chiefly remarkable for its very densely netted chestnut pattern.



35a.



36a.



36b.



37a.



38a.



38b.



39a.



39b.



40b.



41.

COLUMBELLA.

PLATE VIII.

Species 35. (Fig. 35 a, b. and 36 a, b.)

COLUMBELLA OBSCURA. *Col. testâ oblongâ, levi, obscure futei, strigis longitudinalibus nigrescente-fuscis, spirâ conoidâ, anfractibus septem, superâ converâ; labio externo subincrassato, mucosâ acutiusculo, intus subdenticulato, canali brevi, subreflexo.*

THE OBSCURE COLUMBELLA. Shell oblong, smooth, obscurely fulvous, with longitudinal blackish-brown streaks, spire conoid, whorls seven, convex at the upper part; outer lip rather thickened, rather sharp at the edge, slightly denticulated within, canal short, a little reflexed.

SOWERBY, Thesaurus Conch. vol. i. p. 121. pl. 37. f. 70, 71.

Hab. North-west coast of New Holland.

The colouring of this species is peculiar, the flexuous longitudinal black-brown streaks appearing over a faint network or stained band of scorched-fulvous.

Species 37. (Fig. a, b, Mus. Cuming.)

COLUMBELLA TYLERI. *Col. testâ arato-oblongâ, levi, albâ, fusco-nigro reticulatâ et strigatâ, spirâ subobtusâ acuminatâ, anfractibus septem, ventricosiusculis; aperturâ latiusculâ, labio externo eiz incrassato, intus denticulato, columellâ arenatâ.*

TYLER'S COLUMBELLA. Shell ovately oblong, smooth, white, reticulated and streaked with rusty black, spire somewhat obtusely acuminated, whorls seven, rather ventricose; aperture rather broad, outer lip slightly thickened, denticulated within, columella arched.

GRAY, Griffith's *Cuvier's Animal Kingdom.*

Columbella Palmeriana, DuRoi.

Hab. Australia.

This species is variously mottled. In the present specimen the pattern is striped on one side and neatly tessellated on the other.

Species 38. (Fig. a, b, Mus. Cuming.)

COLUMBELLA FLUCTUATA. *Col. testâ subtrigono-ovata, crassâ, ustulato-nigrâ, lineis fusco-albidis acutè angulatis transversim fluctuatâ, spirâ conico-turritâ, anfractibus septem, superâ validè tuberculatis; aperturâ subangustâ, labio externo superâ callosissimo, medio intus denticulato.*

THE WAVED COLUMBELLA. Shell somewhat triangularly ovate, thick, scorched-black, transversely waved with sharply zigzag fulvous-white lines, spire conically turrited, whorls seven, strongly tubercled at the upper part; aperture rather narrow, outer lip callously sinuated, denticulated within in the middle.

SOWERBY, *Pro. Zool. Soc.* 1832, p. 115.

Hab. ———?

A solid strongly-tubercled shell, of a dark burnt-brown colour, picked out with fine transversely zigzag yellowish-white lines.

Species 39. (Fig. a, b, Mus. Cuming.)

COLUMBELLA SPONGIARUM. *Col. testâ ovali, medio obesâ, ad basin contractâ, levigatâ, albidâ, flavescente-lineatâ et reticulatâ, spirâ acuminatâ, rosâ, anfractibus septem ad octo, superâ subrotundatis; aperturâ angustâ, labio externo subincrassato, medio intus tumido et nitidè denticulato.*

THE SPONGE COLUMBELLA. Shell ovate, stout in the middle, contracted at the base, smooth, whitish, stained and reticulated with yellow, spire acuminated, rose-coloured, whorls seven to eight, rather rounded at the upper part; aperture narrow, outer lip slightly thickened, swollen and neatly denticulated in the middle within.

DUROIS, *Monog. du genre,* pl. 3. f. 13-16.

Hab. ———?

A very elegantly-formed shell, swollen in the middle and contracted at the base, with a very sharp spire.



41a.



41n



41b.



42a.



43a.



43b.



47b.



48a.



48b.



49b.

COLUMBELLA.

PLATE IX.

Species 40. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA BRIDGESII. *Col. testā ovatā, utrinque attenuatā, fuscescente-rufā, albipunctatā, maculatā albā amplā obliquā in medio, spirā breviusculā, acuminatā, anfractibus septem, levibus; aperturā superne angulato-angulata-angulata, intus callosa-denticulatā.*

BRIDGES' COLUMBELLA. Shell ovate, attenuated at each end, brownish-red, white-dotted, with a large, white, oblique blotch in the middle, spire rather short, acuminated, whorls seven, smooth; aperture narrow, angularly angulated at the upper part, callously denticulated within.

Hab. Panama - Bridges.

A very characteristic and pretty species, rounded in the middle, and more or less attenuated at each extremity, with the aperture angularly produced into an auricle.

Species 41. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA RETICULATA. *Col. testā ovatā, medio obesā, subangulari, spirāliter lineari-sulcatā, fusco-rufā, punctis albis promiscuè reticulatā, spirā brevi, acutā, anfractibus sex ad septem; aperturā subangustā, superne angulato-productā, intus callosa-denticulatā.*

THE RETICULATED COLUMBELLA. Shell ovate, obese in the middle, somewhat angular, spirally linearly grooved, fuscous-red, promiscuously reticulated with white dots, spire short, sharp, whorls six to seven; aperture rather narrow, angularly produced at the upper part, callously denticulated within.

LAMARCK, Anim. sans vert. vol. x. p. 270.

Hab. Brazil.

Of a solid, angularly ovate form, mostly fuscous-red, interrupted promiscuously with aggregations of white dots.

Species 42. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA PLEEI. *Col. testā subangulato-ovatā, tumida, spirāliter sulcatā, albā, fusco-rufa variegatā, spirā breviusculā, acuminatā, anfractibus sex, superne depresso-concavā; aperturā oblongā, superne sinuatā, intus callosa-denticulatā.*

PLEE'S COLUMBELLA. Shell somewhat angularly ovate, swollen, spirally grooved, white, variegated with fus-

cous-red, spire rather short, acuminated, whorls six, depressly concave round the upper part; aperture oblong, sinuated at the upper part, callously denticulated within.

KJENER, Icon. Coquilles Vivantes, p. 24. pl. 5. f. 2.

Columbella rudis, Sowerby.

Hab. Philippine Islands; Cuming.

Distinguished by a rather tumid growth, the whorls being depressly concave round the upper part.

Species 43. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA BOIVINI. *Col. testā ovatā, crassā, oeraleo-nigrā, minutē albipunctatā, spirā rudē turritā, anfractibus sex ad septem, superne tuberculatis, inferne spiritaliter sulcatis; aperturā ovatā, breviusculā, superne sinuatā, labio incrassato, intus denticulatā, denticulis purpureo-violaceis.*

BOIVIN'S COLUMBELLA. Shell ovate, thick, blue-black, minutely white-dotted, spire rudely turreted, whorls six to seven, tubercled round the upper part, spirally grooved round the lower; aperture ovate, rather short, sinuated at the upper part, lip thickened, denticulated within, denticles purple-violet.

Hab. Gulf of Nicoya, Central America; Hinds.

Of rude tuberculated growth, minutely dotted with white on a peculiarly blue-black ground, having the denticles within the aperture curiously stained with purple-violet.

Species 44. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA XIPHITELLA. *Col. testā cylindraceo-ovatā, levigatā, nitente, albā, aurantio-rufa strigatā et variegatā; aperturā oblongā, utrinque denticulatā, denticulorum intersitiis intensē purpureis.*

THE YELLOW-STREAKED COLUMBELLA. Shell cylindrical ovate, smooth, shining, white, streaked and variegated with orange-red; aperture oblong, denticulated on both sides, interstices between the denticles dark-purple.

DUROIS, Monog. du genre, pl. 9. f. 13, 14.

A delicately painted, shining, cylindrical ovate shell, curiously stained with dark-purple in the interstices between the denticles of the aperture.



45a.



46a.



46b.



47a.



48a.



48b.



49a.



50a.



50b.



51a.

COLUMBELLA.

PLATE X.

Species 45. (Fig. *v, b*, Mus. Cuming.)

COLUMBELLA JAPONICA. *Col. testā ovatā, utrinque attenuata, carnescente-albā, nigro strigatā et reticulatā, spirā acutā, suturis impressis, anfractibus sex, plano-convexis, versus basin spiritaliter lirisatis; aperturā oblongā.*

THE JAPAN COLUMBELLA. Shell ovate, attenuated at each end, bluish-white, streaked and reticulated with black, spire sharp, sutures impressed, whorls six, flatly convex, spirally grooved towards the base; aperture oblong.

Hab. Japan.

Of a peculiar blue-white hue, delicately streaked and reticulated over with black.

Species 46. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA ACICULA. *Col. testā subulatā, gracili, solidā, opaco-albo flammuloseque fuscis undique variegatā, spirā acutā, anfractibus septem, plano-convexis; aperturā poratā, labio incrassato, intus denticulato.*

THE NEEDLE COLUMBELLA. Shell subulate, slender, solid, variegated throughout with minute brown flames and opaque-white, spire sharp, whorls seven, flatly convex; aperture small, lip thickened, denticulated within.

Hab. California.

A solid, subulate shell, beautifully painted with bands of the longitudinal brown flames, relieved with opaque-white.

Species 47. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA MERCATORIA. *Col. testā ovatā, tumidiusculā, undique spiritaliter sulcatā, varicē pictā, interdum articulatā, spirā brevi, anfractibus sex, superne concavo-depressis, ad basin recurvis; aperturā oblongā, subnigustā, labio externo calloso-denticulato.*

THE COMMON COLUMBELLA. Shell ovate, rather swollen, spirally grooved throughout, variously painted, sometimes articulated, spire short, whorls six, concavely depressed round the upper part, recurved at the base; aperture oblong, rather narrow, outer lip thickened, very callously denticulated.

Volva mercatoria, Linnaeus, Syst. Nat. (Gmelin's edit.) p. 3446.

Columbella mercatoria, Lamarek.

Hab. West Indies.

This well-known species is chiefly characterized by its somewhat tumid growth and grooved sculpture, and by its painting, which is generally sparingly articulated.

Species 48. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA DECUSSATA. *Col. testā oblongā, crassā, albā, fusco-marmoratā, spirā turrilatā, anfractibus quinque, turgidiusculis, decussatim costatis; aperturā poratā, subnigustā, labio externo incrassato, depresso-angulato, intus denticulato.*

THE DECUSSATED COLUMBELLA. Shell oblong, thick, white, marbled with brown, spire turreted, whorls five, rather swollen, decussately ribbed; aperture small, rather sinuous, outer lip thickened, depressly angled, denticulated within.

SOWERBY, Thesaurus Conch. vol. i. p. 134. pl. 39. f. 133.

Hab. Australia.

The decussately ribbed sculpture of this species gives it the appearance of being granulated.

Species 49. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA MACROSTOMA. *Col. testā subacuminatoturrilatā, carnescente-albā, livido-fuscatā, spirā acutā, anfractibus octo ad novem, longitudinaliter lyrato-costatis, costis fuscis; aperturā parvisculā, intus denticulatā.*

THE LONG-MOUTHED COLUMBELLA. Shell somewhat acuminately turreted, blue-white, livid-banded, spire sharp, whorls eight to nine, longitudinally lyrate-ly ribbed, ribs brown; aperture rather small, denticulated within.

ANTON, MS. Mus. Cuming.

Hab. California.

A sharply acuminated species, lyrate-ly ribbed throughout, distinguished by a peculiar arrangement of colouring.



51. a.



51. a.



51. b.



50. b.



52. a.



52. b.



50. c.



53. a.



53. b.



55. c.

COLUMBELLA.

PLATE XI.

Species 50. (Fig. a, b, c, Mus. Cuming.)

COLUMBELLA FULGURANS. *Col. testâ ovatâ, crassiusculâ, purpureo-atrâ, albo vel punctatâ vel fulguratâ, spirâ brevi, acutâ, anfractibus sex ad septem, levibus, superne tuisidis; aperturâ oblongâ, labio externo incrassato, intus callosio-lenticulato.*

THE LIGHTNING-MARKED COLUMBELLA. Shell ovate, rather thick, purple-black, either dotted or lightning-marked with white, spire short, sharp, whorls six to seven, smooth, swollen at the top; aperture oblong, outer lip thickened, callously denticulated within.

LAMARCK, Anim. sans vert. vol. x. p. 272.

Folata flammea, var., Gmelin.

Buccinum fulgurans, Wood.

Eadem var. *Columbella punctata*, Lamarck.

Hab. Philippine Islands.

Curiously variable in marking, being sometimes boldly lightning-marked with white, and sometimes profusely dotted upon a dark purple-black ground.

Species 51. (Fig. a, b, Mus. Cuming.)

COLUMBELLA VERSICOLOR. *Col. testâ ovatâ, medio ventricosâ, pallidâ, coloribus variis pictâ, spirâ brevi, acuminatâ, anfractibus sex, transversim sulcatis, superne tuisidis; aperturâ oblongâ, flexuosâ, labio externo intus callosio-lenticulato.*

THE VARICOLOURED COLUMBELLA. Shell ovate, ventricose in the middle, pale, painted with various colours, spire short, acuminate, whorls six, transversely grooved, swollen at the upper part; aperture oblong, flexuous, outer lip callously denticulated within.

SOEWERY, Pro. Zool. Soc. 1832, p. 119.

Hab. Island of Anna, Philippine Islands; Cuming.

Chiefly remarkable in form by the swollen angularity of the upper part of the whorls.

Species 52. (Fig. a, b, Mus. Cuming.)

COLUMBELLA NITIDA. *Col. testâ oblongâ, levi, nitente, albicante, fulvo-rufescente marmoratâ, spirâ brevi, acutâ, anfractibus septem, plano-convexis; aperturâ oblongâ, angustâ, labio externo intus denticulato.*

THE SHINING COLUMBELLA. Shell oblong, smooth, shining, whitish, marbled with fulvous-red, spire short, sharp, whorls seven, flatly convex; aperture oblong, narrow, outer lip denticulated within.

LAMARCK, Anim. sans vert. vol. x. p. 271.

Columbella nitidula, Sowerby.

Hab. West Indies.

Mr. Sowerby thinks that this is the *Buccinum nitidulum* of Linnæus, but M. Deshayes does not agree with him in this opinion.

Species 53. (Fig. a, b, c, Mus. Cuming.)

COLUMBELLA LEVIGATA. *Col. testâ ovatâ, tenuiculâ, subventricosâ, levigatâ, aurantio-luteâ, fusco et roseo strigatâ et variegatâ, spirâ brevi, acutâ, anfractibus sex, convexis; columellâ subconartatâ, labio externo simplici, aperturâ ovatâ, albâ.*

THE SMOOTH COLUMBELLA. Shell ovate, rather thin, somewhat ventricose, smooth, orange-yellow, striped and variegated with brown and rose, spire short, sharp, whorls six, convex; columella somewhat twisted, outer lip simple, aperture ovate, white.

Buccinum levigatum, Linnæus, Syst. Nat. (Gmel. ed.) p. 3497.

Columbella caucina, Sowerby.

Hab. — ?

An extremely pretty, light, ventricose species, striped and variegated with fulvous-brown or delicate rose.



25a.



26a.



25b.



26b.



27a.



27b.



28a.



28b.



29a.



29b.

COLUMBELLA.

PLATE XII.

Species 54. (Fig. 54. Mus. Cuming.)

COLUMBELLA RUSTICATA. *Col. testâ oblongo-turrilatâ, laevi, subulata, epidermide marcescente et flammata, anfractibus sex, primo mucosis, ultimo anticâ sulcato; aperturâ brevissimâ, intus violascente, labio externo anticâ reflexo.*

THE RAGYF COLUMBELLA. Shell oblong, turreted, smooth, pale, marbled and flamed with brown, whorls six, flatly convex, the last grooved in front; aperture short, rather broad, interior violet, outer lip effused in front.

SOWERBY, *Thesaurus Conch.* vol. i. p. 132. pl. 39. f. 125.
Hab. Swan River.

An elegantly painted slender species, approaching some of the elongated *Buccina* in form.

Species 55. (Fig. 55. Mus. Cuming.)

COLUMBELLA FULVA. *Col. testâ ovato-subulatâ, fulvâ, epidermide minutissime reticulatâ indutâ, anfractibus sex, longitudinaliter costatis, ultimo anticâ spiritaliter striatâ, aperturâ parvâ, intus denticulatâ.*

THE FULVOUS COLUMBELLA. Shell ovately subulate, fulvous, covered with a minutely reticulated epidermis, whorls ten, longitudinally ribbed, the last spirally striated in front; aperture small, toothed within.

SOWERBY, *Pro. Zool. Soc.* 1832, p. 115.
Hab. Panama (under stones); Cuming.

A solid, conspicuously ribbed shell, of a dull-fulvous colour, with an unusually sharply acuminate spire.

Species 56. (Fig. 56. Mus. Cuming.)

COLUMBELLA ENCAUSTICA. *Col. testâ oblongo-subulatâ, solidiusculâ, fulvo-brunnâ, albo tessellato-maculatâ, spirâ acutâ, suturis impressis, anfractibus novem, longitudinaliter costatis, sutris spirâibus decussatis; apertura parvisculâ, intus denticulato-liratâ.*

THE ENCAUSTIC COLUMBELLA. Shell oblong, subulate, rather solid, fulvous-brown, tessellately blotched with white, spire sharp, sutures impressed, whorls nine, longitudinally ribbed, decussated with spiral grooves; aperture rather small, denticulately ridged within.

Hab. Gulf of California; Lieut. Shipley.

A fine, solid, sharply subulate shell, decussately ribbed and grooved throughout, conspicuously marbled with dark fulvous-brown and white.

Species 57. (Fig. 57. Mus. Cuming.)

COLUMBELLA VEXILLUM. *Col. testâ acuminato-oblongâ, subturrilatâ, flavescente, nigrovirenti-fusco longitudinaliter conspicuè strigatâ, anfractibus octo, superne tumidiusculis, longitudinaliter costatis, ultimo concavo-concavato; aperturâ parvâ, intus cœrulescente.*

THE FLAG COLUMBELLA. Shell acuminately oblong, somewhat turreted, yellowish, longitudinally conspicuously striped with dark-brown, whorls eight, somewhat swollen at the upper part, longitudinally ribbed, the last concavely contracted; aperture small, interior bluish.

Hab. Gulf of California.

Another striking new species, longitudinally ribbed, and painted in the same direction with conspicuous, flexuous, brown stripes.

Species 58. (Fig. 58 a, Mus. Cuming.)

COLUMBELLA LYKATA. *Col. testâ oblongâ, acuminatâ, fulvescente, anfractibus octo, subrotundatis, nitidè longitudinaliter costatis, costis nigro alioque articulis; aperturâ parvâ, angustâ, minutè denticulatâ.*

THE HARP-STRING COLUMBELLA. Shell oblong, acuminate, yellowish, whorls eight, somewhat rounded, neatly longitudinally ribbed, ribs articulated with black and white; aperture small, narrow, minutely denticulated.

SOWERBY, *Pro. Zool. Soc.* 1832, p. 114.

Hab. Panama (under stones); Cuming.

Remarkable for the beautiful regularity and neat articulated painting of the longitudinal ribs.

Species 59. (Fig. 58 b, Mus. Cuming.)

COLUMBELLA TERPSICHOE. *Col. testâ oblongâ, crassiusculâ, albidâ, punctis strigilisque fuscis ornatâ, anfractibus septem, longitudinaliter tenuè costatis, costis superne muricatis; aperturâ parvâ, intus denticulatâ.*

THE TERPSICHOE COLUMBELLA. Shell oblong, rather thick, white, adorned with brown dots and fine streaks, whorls seven, longitudinally finely ribbed, ribs prickly at the upper part; aperture small, denticulated within.

SOWERBY, *Genera of Shells*, f. 6.

Hab. Nevis, West Indies.

A solid, rather prickly ribbed shell, laeet with fine brown lines upon a white ground.



60



61 a



61 b



62 a



63 b



61 a



62 b



64 a



64 b



63

COLUMBELLA.

PLATE XIII.

Species 60. (Mus. Cuming.)

COLUMBELLA FESTIVA. *Col. testâ ovata, apice abbreviato-umbilicâ, medio tergitâ, palmaribus, purpureo-castaneo sphaerulata et punctatâ, albâ, ad suturas albo-flocatâ; apertura breviori, subâ, exteriorâ intus tumida et nitidâ denticulatâ.*

THE FESTIVE COLUMBELLA. Shell ovate, spire shortly conical, swollen in the middle, blotched and dotted with pale purple-chestnut, shining, flaked with white at the sutures; aperture flexuous, outer lip swollen within and neatly denticulated.

KIENER, *Coquilles vivantes*, p. 15, pl. 11. f. 4.
Hab. Anapaleo.

An elegant little shining species, richly painted with white-flaked purple-brown.

Species 61. (Mus. Cuming.)

COLUMBELLA GIBBERILLA. *Col. testâ ovato-pyramidali, spirâ subulatâ, anfractibus plano-convexis, brunneo nubescentibus, ultimo gibberato, ad utrinque latus varicoso, apicibus albis; apertura parvâ, basi denticulatâ, umbilicâ brevi, reflexâ.*

THE GIBBOS COLUMBELLA. Shell ovately pyramidal, spire subulate, whorls flatly convex, clouded with brown, the last somewhat gibbous, varicose at each side, varices white; aperture small, not denticulated, canal short, reflected.

SOWERBY, *Pro Zool. Soc.* 1832, p. 115.

Hab. Bay of Caracas and Puerto Portrero, Central America (in sandy mud, at the depth of eleven fathoms); Cuming.

A solid acuminate species, rather gibbously angled round the lower part, with a white callous varix on either side.

Species 62. (Fig. a, b, Mus. Cuming.)

COLUMBELLA CRIBRARIA. *Col. testâ oblongo-pyramidali lutescente, costis angustis-reticulatâ, basi, spirâ acuminatâ, pleurogyge denticulatâ; apertura breviusculâ, labro intus denticulatâ, superâ ânuato.*

THE SIEVE-LIKE COLUMBELLA. Shell oblong-pyramidal, yellowish, reticulated with chestnut, smooth, spire acuminate, generally decollated; aperture rather

short, lip denticulated within, notched at the upper part.

QUOY and GAIMARD, *Zool. Voy. de l'Astrolabe*, vol. ii. p. 241, pl. 30. f. 21, 22.

Hab. Panama (common under stones); Cuming.

This species, confounded originally with *Buccinum*, may be recognized by its characteristic reticulated painting.

Species 63. (Fig. a, b, Mus. Cuming.)

COLUMBELLA TUMIDA. *Col. testâ ovatâ, medio tumidâ, coruscante-albâ, epidermide floridâ indutâ, spirâ breviusculâ, acutâ, anfractibus convexis, ultimo transversim subobsoletè sulcato, suturis subantibus; labro medio et superâ incrassato, intus denticulatâ.*

THE SWOLLEN COLUMBELLA. Shell ovate, swollen in the middle, bluish-white, covered with a yellow epidermis, spire rather short, sharp, whorls convex, the last transversely rather obsoletely grooved, sutures somewhat rude; lip thickened in the middle and upper part, denticulated within.

DECIOS, *Monog. du Genre*, pl. 13. f. 13, 14.

Hab. — ?

A stout white species, faintly grooved across, covered with a light yellow epidermis.

Species 64. (Fig. a, b, Mus. Cuming.)

COLUMBELLA BICANALIFERA. *Col. testâ ovato-pyramidali, apice acutâ, basi spirâ ter sulcato, spirâ acuminatâ, anfractibus superioribus longitudinaliter costatis; pallescente-lividâ, lineis fulvo-rufescentibus longitudinaliter undatâ; apertura oblongâ, superâ in cruribus decurrente, labro incrassato, superâ mucronatâ, basi subreflexâ.*

THE TWO-CHANNELED COLUMBELLA. Shell ovately pyramidal, sharp at the apex, spirally grooved at the base, spire acuminate, uppermost whorls longitudinally ribbed; pale-livid colour, longitudinally waved with fulvous-red lines; aperture oblong, running at the upper part into a canal, lip thickened, pointed at the top, slightly reflected at the base.

SOWERBY, *Pro Zool. Soc.* 1832, p. 113.

Hab. Galapagos Islands; Cuming.

A strikingly characteristic species, distinguished by its channelled aperture and pointed extension of the lip.

Species 65. (Mus. Cuming.)

COLUMBELLA PUELLA. *Col. testâ subfusiformi, spirâ turridâ, anfractibus plano-convexis, longitudinaliter costatis, ultimo ad basin levigatâ; rufescente-aurantiâ, in medio et ad suturas albifasciatâ; aperturâ parvisculâ, utrinque denticulatâ, canali attenuato et recurvo*

THE YOUNG COLUMBELLA. Shell somewhat fusiform, spire turreted, whorls flatly convex, longitudinally ribbed, the last smooth at the base, reddish-orange, white-banded in the middle and at the sutures; aperture rather small, denticulated on both sides, canal attenuated and recurved.

SOWERBY, MS. in Mus. Cuming.

Hab. Philippine Islands.

A delicate fusiform species, contrasting curiously in form of the base with the preceding.



67 a



67 b



67 c



68



69 a



69 b



70



71



72



73

COLUMBELLA.

PLATE XIV.

Species 64. (Mus. Cuming.)

COLUMBELLA INDICA. *Col. testâ apiculato-oblongâ, subfere ovali, transverseâ sulcata-striatâ, alba, maculis albisque aereâ lineââ, interstitibus superae transverseâ, obtusâ contractâ, limbo serrato, sutura denticulatâ.*

THE INDIAN COLUMBELLA. Shell cylindrical oblong, somewhat fusiform (transversely) pro-ostriated, white, encircled with two series of oblique black spots, whorls rather concave at the upper part, than convex; lip thickened, denticulated within.

Hab. India.

Distinguished by a cylindrical fusiform growth, neatly painted with distant files of oblique black spots upon a white ground.

Species 67. (Fig. a, b, Mus. Cuming.)

COLUMBELLA POCULA. *Col. testâ ovali, utrinque subacuminatâ, transverseâ sulcatâ, fuscâ, fasciis castaneis distantibus cingulatâ, interstitibus annulis albidis striatâ, anfractibus asperâ, maculis et serratis; apertura oblongo-flexuosâ, utrinque limbo denticulatâ.*

THE VARIEGATED COLUMBELLA. Shell ovate, subacuminated at each extremity, transversely grooved, fulvous, encircled with distant chestnut bands, the interstices variegated with white spots, whorls swollen and coronated at the upper part; aperture oblong, flexuous, finely denticulated on each side.

SOVERBY, *Thesaurus Conch.* vol. i. p. 118. pl. 37. f. 51, 52.

Hab. Island of Matnog, Philippines; Cuming.

A pretty, stout, coronated species, closely transversely grooved throughout, painted with characteristic brown transverse and oblique bands.

Species 68. (Mus. Cuming.)

COLUMBELLA MISER. *Col. testâ ovato-oblongâ, albicante vel roseo-roseâ, castaneâ vicinâ maculatâ, anfractibus mucronatis, longitudinaliter costatâ, costis in anfracta albisque conâctis; apertura ovali.*

THE MISER COLUMBELLA. Shell ovately oblong, whitish or yellowish, vivily spotted with chestnut, whorls

rather convex, longitudinally ribbed, ribs obsolete on the last whorl; aperture ovate.

SOVERBY, *Thesaurus Conch.* vol. i. p. 129. pl. 38. f. 111.

Hab. ———?

Strikingly variegated with various-sized chestnut blotches.

Species 69. (Fig. a, b, Mus. Cuming.)

COLUMBELLA MENKEANA. *Col. testâ angustâ acuminatâ, levigatâ, fuscâ, fasciâ rufâ interruptâ cingulatâ; apertura brevi, canali truncato, limbo supero subimbricato, intus rix denticulatâ.*

MENKE'S COLUMBELLA. Shell narrowly acuminated, smooth, fulvous, encircled with an interrupted red band; aperture short, canal truncated, lip slightly notched at the upper part, faintly denticulated within. *Columbella acuminata*, Menke (not of Nuttall).

Hab. Australia.

This interesting Australian species has very much the appearance of a *Terebra*. It is of a bright fulvous colour, encircled beneath the suture in each whorl with an interrupted red band, the spots being sometimes arrow-headed, filleted with white.

Species 70. (Mus. Cuming.)

COLUMBELLA PHASINOLA. *Col. testâ globoso-ovalâ, rubidâ, granis albis cingulatâ, spirâ abbreviato-conicâ, suturis s'impressis; apertura coarctatâ, utrinque denticulatâ.*

THE PHEASANT COLUMBELLA. Shell globose ovate, red, encircled with white grains, spire shortly conical, sutures rather impressed; aperture contracted, denticulated on each side.

DUGLOS, *Monog. du Genre*, pl. 8. f. 13 to 16.

Hab. ———?

An obtuse subglobose shell, beaded throughout with large white grains set in a deep-red ground.

Species 71. (Mus. Cuming.)

COLUMBELLA RUGULOSA. *Col. testâ oblongo-ovalâ, crassâ, longitudinaliter plicato-rugosâ, violaceo-nigrivante, maculis albis asperâ, obscure fasciatâ, spirâ obtusâ, an-*

fractus covetzi, transversim sulcato-striatis; aperturâ parvasculâ, labro incrassata.

THE FINELY-WRINKLED COLUMBELLA. Shell oblong-ovate, thick, longitudinally plicately wrinkled, violet-black, sprinkled with white dots, obscurely banded, spire obtuse, whorls convex, transversely groove-striated; aperture rather small, lip thickened.

SOWERBY, *Thesaurus Conch.* vol. i. p. 133. pl. 39. f. 131.
Hab. Galapagos Islands.

A stout, obtuse, violet-black shell, more or less freckled with white dots, opening sometimes into a band.

Species 72. (Mus. Cuming.)

COLUMBELLA ELECTROIDES. *Col. testâ ovatâ, tenuiculâ, levigatâ, rufescente-fulvâ, prope suturas albâ, spirâ brevisculâ, suturis impressis; aperturâ ovatâ, labra tenui.*

THE AMBER COLUMBELLA. Shell ovate, rather thin, smooth, reddish-fulvous, white next the sutures, spire rather short, sutures impressed; aperture ovate, lip thin.

Hab. Bay of Guayaquil.

A delicate reddish-fulvous shell, of light substance, articulated round the upper edge of the whorls with white.

Species 73. (Mus. Cuming.)

COLUMBELLA AYARA. *Col. testâ subangustâ acuminatâ, albâ, fusca vel fulvo-aerantia maculatâ, suturis impressis, anfractibus longitudinaliter flexuoso-costatis, interstitiis striis reticulatis; aperturâ parvâ, labro varicosa.*

THE COVETOUS COLUMBELLA. Shell rather narrowly acuminated, white, blotched with brown or fulvous-orange, sutures impressed, whorls longitudinally flexuously ribbed, interstices reticulated with striæ; aperture small, lip varicose.

SAY, *Journ. Acad. Nat. Sci. Philadelphia*, vol. ii. p. 230.
Hab. Bay of Massachusetts, United States; Gould.

Always characterized by a strongly reticulated sculpture, whilst the shell is often less acuminated than the specimen here figured.



72.



74 st.



75 b



75 r



76 a



76 b



77



77 a



77 b



79

Species 74. (Mus. Cuming.)

COLUMBELLA PACIFICA. *Col. testâ acuminato-ovata, albâ, costâs foveolatâ, spirâ acutâ, anfractibus subrotundis; aperturâ parvâ, labio tenuicula.*

THE PACIFIC COLUMBELLA. Shell acuminately ovate, white, flamed with chestnut, spire sharp, whorls somewhat rounded; aperture small, lip rather thin.

GASKOIN, *Pro. Zool. Soc.*

Hab. Galapagos Islands.

An elegantly acuminated species, conspicuous, painted throughout with chestnut flames upon a smooth white ground.

Species 75. (Fig. a, b, c, Mus. Cuming.)

COLUMBELLA PARDALINA. *Col. testâ ovatâ, levi, albâ, maculis retiformibus nigris ornatâ, spirâ breviusculâ, anfractibus brevibus, ultimo magno, ad basia striato; aperturâ subangulatâ, flexuosâ, labio medio tumido et denticulato, canali brevi, lato.*

THE FANTHER COLUMBELLA. Shell ovate, smooth, white, ornamented with black net-like spots, spire rather short, whorls short, the last large, striated at the base; aperture rather narrow, flexuous, lip swollen and denticulated in the middle, canal short, broad.

LAMARCK, *Anim. sans vert.* vol. x. p. 270.

Hab. Islands of Guimaras and Ticao, Philippines; Cuming.

The painting of this species is extremely variable in pattern, but it is always a brownish-black upon a clear white ground.

Species 76. (Fig. a, b, Mus. Cuming.)

COLUMBELLA DUCLOSIANA. *Col. testâ ovatâ, utrinque acuminatâ, longitudinaliter costellatâ, saturatâ fuscâ, zonis binis pallidioribus cinctâ, intersticiis costarum transversarum striatis, partium lævigatis; aperturâ latiusculâ, flexuosâ, nigricante, utrinque denticulatâ, labio externo incrassato, canali breviter acuminato, subreflexo; epidermide crassiusculâ.*

DUCLOS' COLUMBELLA. Shell ovate, acuminated at either extremity, longitudinally finely ribbed, dark brown, encircled with two paler zones, interstices of the ribs finely striated, partially smooth; aperture rather broad, flexuous, blackish, denticulated on each side, outer lip thickened, canal shortly acuminated, somewhat reflected; epidermis rather thick.

SOWERBY, *Thes. Conch.* vol. i. p. 113. pl. 36. f. 15, 16.

Hab. Malacca, Java (found under stones); Cuming.

This species is of a distinct typical character, readily

distinguished from any other of the genus at present known.

Species 77. (Mus. Cuming.)

COLUMBELLA FABULA. *Col. testâ ovatâ, levi, pallidâ, variè reticulato-pictâ, spirâ brevi, acutâ, anfractibus medio convexo-tumidis; aperturâ oblongâ, labio tenuicula, superè submarginatâ, intus vix denticulato.*

THE LITTLE BEAN COLUMBELLA. Shell ovate, smooth, pale, variously reticulatedly painted, spire short, sharp, whorls convexly swollen in the middle; aperture oblong, lip rather thin, slightly notched at the upper part, faintly denticulated within.

SOWERBY, *Thes. Conch.* vol. i. p. 124. pl. 38. f. 86, 87.

Columbelle Fabulosa, Duclos.

Hab. Philippine Islands; Cuming.

A rather lightly convoluted shell, globose solid in the middle, more or less finely reticulated with brown.

Species 78. (Mus. Cuming.)

COLUMBELLA AUSTRALIS. *Col. testâ fusiformi-oblongâ, fulvescente, rufo reticulatâ, prope suturas albifasciatâ, rufo maculatâ, anfractibus superè impressis, deinde convexis, ultimo sulcato-striato; aperturâ oblongâ, denticulatâ.*

THE AUSTRALIAN COLUMBELLA. Shell fusiformly oblong, fulvous, reticulated with red, white-banded next the sutures, blotched with red, whorls impressed round the upper part, then convex, the last groove-striated; aperture oblong, denticulated.

GASKOIN, *Pro. Zool. Soc.*

Hab. Sydney (under stones, at low-water).

This pretty and well-defined species partakes somewhat of the characters of the Buccinoid form of *Triton*.

Species 79. (Mus. Cuming.)

COLUMBELLA ZEBRA. *Col. testâ oblongâ, subpyramidalî, levi, fulvescente, castaneo conspicuè strigatâ; aperturâ latiusculâ, labio intus subincrassato, vix denticulato.*

THE ZEBRA COLUMBELLA. Shell oblong, somewhat pyramidal, smooth, fulvous, conspicuously striped with chestnut; aperture rather broad, lip slightly thickened within, faintly denticulated.

GRAY, *Sowerby, Thes. Conch.* vol. i. p. 127. pl. 38. f. 105.

Hab. New Zealand.

A shell of simple form, void of sculpture, painted longitudinally with characteristic chestnut stripes upon a fulvous-white ground.

Columbella PL. XVI



80 a



81 a



81 b



80 b



82



83



82 a



83 a



83 b



82 b

[Faint text or signature]

COLUMBELLA.

PLATE XVI.

Species 80. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA FULVICOLA. *Col. testâ ovatâ, crassâ, levigatâ, a/bâ. fulvo-aurantiâ varioratâ, spirâ brevi, sub-obtusâ, anfractibus superâ planatis, deinde concavis, ultimo sulcato-striatis; aperturâ subangustâ, labro incrassato, denticulato.*

THE FOX COLUMBELLA. Shell ovate, thick, smooth, white, marbled with fulvous-orange, spire short, rather obtuse, whorls flat at the upper part, then convex, last whorl groove-striated; aperture rather narrow, lip thickened, denticulated.

SOWERBY, Thes. Conch. pl. 38. f. 90.

Hab. Australia.

A solid shell, marbled with fulvous-orange upon a white ground.

Species 81. (Mus. Cuming.)

COLUMBELLA MARMORATA. *Col. testâ oblongo-cylindraceâ, lævigatâ, nitentâ, fulvo-aurantiâ, albo strigatâ et punctatâ, anfractibus plano-concavis, ultimo ad basin sulcato-striatis; aperturâ subangustâ, superâ submarginatâ, labro intus denticulato.*

THE MARBLED COLUMBELLA. Shell oblong-cylindrical, smooth, shining, fulvous-orange, striped and dotted with white, whorls flatly convex, the last groove-striated at the base; aperture rather narrow, slightly notched at the upper part, lip denticulated within.

GRAY, Zoology of Beechey's Voyage, p. 129. pl. 36. f. 11.

Hab. Isle of Capul, Philippines (on the reefs); Cuming.

Of a somewhat *Mitra*-like shape, shining, fulvous-orange, promiscuously streaked and dotted with white.

Species 82. (Mus. Cuming.)

COLUMBELLA NIVEA. *Col. testâ ovatâ, spirâ acuminatâ, terribâ, nitentâ, anfractibus validè costatis, interstitiis obscure reticulato-striatis; aperturâ oblongâ, superâ submarginatâ, canali subincrassato recurvo.*

THE SNOWY COLUMBELLA. Shell ovate, with the spire acuminately turreted, white, whorls strongly ribbed, with the interstices obscurely, reticulatedly striated; aperture oblong, slightly emarginated at the upper part, canal rather thickly recurved.

SOWERBY, Thes. Conch. vol. i. p. 139. pl. 39. f. 151.

This colourless shell is not a very satisfactory species, yet it is not exactly referable to any other at present described.

Species 83. (Mus. Cuming.)

COLUMBELLA TURTRINA. *Col. testâ brevî, crassâ, sub-globosâ, albâ, aurantio-fulvâ variegatâ, anfractibus transversim sulcato-striatis; aperturâ oblongo-flexuosâ utrinque rosâ, columellâ bidenticulatâ, labro crassissimo, denticulato.*

THE TURTLE DOVE COLUMBELLA. Shell short, thick, subglobose, whitish, variegated with orange-brown, whorls transversely groove-striated; aperture oblong-flexuous, pink on each side, columella bidenticulated, lip very thick, denticulated.

LAMARCK, Anim. sans Vert. vol. x. p. 273.

Hab. Philippine Islands; Cuming.

Well distinguished by its short bulbous growth and granulated columbella with pink colouring.

Species 84. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA MITRATA. *Col. testâ ovatâ, utrinque attenuatâ, ubique densè costatâ, interstitiis versus basin funestratis, albâ, fuscis duobus latis nigris cingulatâ; aperturâ parvisculâ, intus denticulatâ.*

THE MITRE COLUMBELLA. Shell ovate, attenuated at each end, closely ribbed throughout, interstices towards the base latticed, white, encircled with two broad bands of fuscous-black; aperture rather small, denticulated within.

MENKE, Moll. Nov. Hollandiæ.

Hab. New Holland.

A stout ribbed shell, conspicuous banded with fuscous-black.

Species 85. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA OBTUSA. *Col. testâ oblongo-cylindraceâ, spirâ obtusâ, apice aculatâ, pallidâ, castaneo-rufa reticulato-maculatâ, maculis obliquè trapeziformibus, anfractibus superâ subimpressis, deinde concavis, aperturâ parvâ, subangustâ, superâ oblongâ.*

THE OBTUSE COLUMBELLA. Shell oblong-cylindrical, spire obtuse, prickly at the apex, pale, reticulatedly spotted with chestnut-red, spots obliquely trapeziform, whorls slightly impressed round the upper part, then convex; aperture small, rather narrow, notched at the upper part.

SOWERBY, Pro. Zool. Soc. 1832, p. 117.

Hab. Huahine, Society Islands; Cuming.

Of a regular cylindrical form, curiously obliquely reticulated.



86



87 a



87 b



88 a



89



90



88 b



91 a



91 b



92

Species 86. (Fig. 86 and 87, a, b, Mus. Cuming.)

COLUMBELLA PULCHELLA. *Col. testâ acuminato-cylindraceâ, pallidâ, vitente, maculis flammisque fulvo-aureantibus variegatâ, anfractibus superioribus longitudinaliter costatis, interstitiis interdum fenestralis; aperturâ parvâ, superâ emarginatâ, intus denticulatâ.*

THE BEAUTIFUL COLUMBELLA. Shell acuminately cylindrical, pale, shining, variegated with fulvous-orange spots and flames, upper whorls longitudinally ribbed, interstices sometimes latticed; aperture small, notched at the upper part, denticulated within.

SOWERBY, Thes. Conch. vol. i. p. 131. pl. 39. f. 121, 122. *Buccinum pulchellum*, Kiener.

Hab. Caffaria.

An elegantly painted species, partaking in a measure of the characters of *Triton* and *Pleurotoma*.

Species 88. (Fig. a, b, Mus. Cuming.)

COLUMBELLA INTERTEXTA. *Col. testâ aciculari, semipellucidâ, opaco-albo nudique punctatâ, flammis aurantio-fuscis ad suturas pictâ, anfractibus planoconvexis transversim minutè striatis; aperturâ parvisculâ, labro tenui, intus denticulatâ.*

THE INTERWOVEN COLUMBELLA. Shell acicular, semitransparent, everywhere dotted with opaque-white, painted with orange-brown flames at the sutures, whorls flatly convex, transversely minutely striated; aperture rather small, lip thin, denticulated within.

GASKOIN, Pro. Zool. Soc.

Hab. Australia.

An extremely delicate semitransparent shell, flaked with white dots, and painted at the sutures with orange-brown spots, descending in short flames.

Species 89. (Fig. a, b, Mus. Cuming.)

COLUMBELLA SUFFUSA. *Col. testâ oblongâ, spirâ larrinâ, albâ, punctis rufo-fuscis pictâ, anfractibus convexis, longitudinaliter costatis, interstitiis fenestralis; aperturâ parvâ, superâ emarginatâ.*

THE SUFFUSED COLUMBELLA. Shell oblong, spire turreted, white, painted with red-brown dots, whorls convex, longitudinally ribbed, interstices latticed; aperture small, notched at the upper part.

SOWERBY, Thesaurus Conch. vol. i. p. 142. pl. 49. f. 166, 167.

Hab. Pacific; Cuming.

The red-brown painting in this species, described as dots, has sometimes the form of hieroglyphic characters.

Species 90. (Mus. Cuming.)

COLUMBELLA JASPIDEA. *Col. testâ cylindraceo-oblongâ, apice mucronato, pallidâ rosâ, anfractibus convexis, confertim longitudinaliter costatis; aperturâ parvisculâ, superâ emarginatâ, intus denticulatâ.*

THE JASPER COLUMBELLA. Shell cylindrically oblong, apex pointed, pale rose-colour, whorls convex, closely longitudinally ribbed; aperture rather small, notched at the upper part, denticulated within.

SOWERBY, Thesaurus Conch. vol. i. p. 132. pl. 39. f. 125. *Hab.* Island of Ticao, Philippines (found under stones, at low-water); Cuming.

A cylindrically oblong shell, closely ribbed throughout, of a uniform pale pink.

Species 91. (Fig. a, b, Mus. Cuming.)

COLUMBELLA VARIANS. *Col. testâ ovatâ, medio ventricosâ, albâ, coloribus variis pictâ, spirâ breviter pyramidalis, anfractibus transversim sulcatis, superâ interdum nodulatis; aperturâ angustâ, flexuosâ, superâ angulatâ, intus denticulatâ.*

THE VARIABLE COLUMBELLA. Shell ovate, ventricose in the middle, whitish, painted with various colours, spire shortly pyramidal, whorls transversely grooved, sometimes noduled at the upper part; aperture narrow, flexuous, angled at the upper part, denticulated within.

SOWERBY, Pro. Zool. Soc. 1832, p. 118.

Hab. Galapagos Islands.

The painting of this little species is so variable that it cannot be specially characterized.

Species 92. (Mus. Cuming.)

COLUMBELLA DYSONI. *Col. testâ fusiformi-conicâ, lutescente-albâ, vinctis rufo-fuscis undatim strigatâ, spirâ brevi, acutâ, anfractibus undique variè spiralter sulcatâ; aperturâ elongatâ, labro plano-increscato, intus denticulatâ.*

DYSON'S COLUMBELLA. Shell fusiformly conical, yellowish-white, painted with wave stripes of red-brown spots, spire short, sharp, whorls strongly spirally grooved throughout; aperture elongated, lip flatly thickened, denticulated within.

Hab. Honduras; Dyson.

A very characteristic type of the genus, partaking of the peculiar form of *Conchelia*.



93



94 a



92 b



95 a



96 a



96 b



95 b



97 a



97 b



98

Species 93. (Mus. Cuming.)

COLUMBELLA TICAOENSIS. *Col. testā cylindraceo-ovata, ad basin restrictā, apice acutā, pallescente, castaneo ampliter sphacelatā, anfractibus plano-convexis, spiralliter striatis, suturis impressis, anfractu ultimo basi sulcato; aperturā oblongā, superne emarginatā, intus denticulatā.*

THE TICAO COLUMBELLA. Shell cylindrically ovate, restricted at the base, sharp at the apex, pale, largely blotched with chestnut whorls, flatly convex, spirally striated, sutures impressed, last whorl grooved at the base; aperture oblong, notched at the upper part, denticulated within.

SOEWERY, *Thesaurus Conch.* vol. 1. p. 134.

Hab. Island of Ticao, Philippines (in sandy mud, at a depth of seven fathoms); Cuming.

A bright, richly painted shell, rather more attenuately restricted at the base than is usual in this genus.

Species 94. (Mus. Cuming.)

COLUMBELLA CORNICULATA. *Col. testā aciculari, lævigatā, nitenti, rufo-fuscescente, varis strigatā aut marmoratā, anfractibus plano-convexis; aperturā parvā, intus denticulatā.*

THE HORNED COLUMBELLA. Shell acicular, smooth, shining, variously striped or mottled with red-brown, whorls flatly convex; aperture small, denticulated within.

Buccinum corniculatum, Lamarck, *Anim. sans vert.* vol. x. p. 175.

Columbella corniculata, Deshayes.

Buccinum Lineei, Payraudeau.

Murex conulus, Oliv.

Columbella conulus, Blainville.

Hab. Mediterranean.

A very sharp acicular shell, richly variegated in a variety of patterns with red-brown.

Species 95. (Fig. a, b, Mus. Cuming.)

COLUMBELLA SEMICONVEXA. *Col. testā ovato-subulatā, crassiusculā, lævi, pallidā, rufo-fusca longitudinaliter flammatā, anfractibus planiusculis, ad suturam convexis, obscure striatis; aperturā parvisculā, conspicuè denticulatā.*

THE SEMI-CONVEX COLUMBELLA. Shell ovately subulate, rather thick, smooth, pale, longitudinally flamed with red-brown, whorls rather flat, convex at the suture, obscurely striated; aperture rather small, conspicuously denticulated.

Buccinum semiconvexum, Lamarck, *Anim. sans vert.* vol. x. p. 171.

Columbella semiconvexa, Sowerby.

Hab. Port Lincoln, Australia.

This shell is not of the same acicular type as the preceding species, with which it has been compared, but stout and rounded. The longitudinal red-brown flames with which it is painted are very constant.

Species 96. (Fig. a, b, Mus. Cuming.)

COLUMBELLA LIGULA. *Col. testā oblongā, acuminatā lævi, albidā, caris coloribus pictā, sarpe albipunctatā, spirā productā, anfractibus planatis; aperturā oblongā, superne obsolete emarginatā, denticulatā.*

THE LITTLE TONGUE COLUMBELLA. Shell oblong, acuminate, smooth, whitish, pointed with various colours, often white-dotted, spire produced, whorls flattened; aperture oblong, obsolete notched at the upper part, denticulated.

DELOS, *Monog. du genre*, pl. 11. f. 11-16.

Hab. Island of Ticao, Philippines; Cuming.

Although extremely variable in colour, the painting is mostly characterized by a peculiar dotting and lacing of opaque-white.

Species 97. (Fig. a, b, Mus. Cuming.)

COLUMBELLA ALBINA. *Col. testā oblongo-acuminatā, lævi, ad suturam restrictā, albidā, punctis rufo-fuscis varis vittatā, anfractibus plano-convexis, ultimo ad basin sulcato; aperturā parvisculā, flexuosā, labro varicoso, intus denticulatā.*

THE WHITISH COLUMBELLA. Shell oblong, acuminate, smooth, restricted at the sutures, whitish, variously filleted with red-brown dots, whorls flatly convex, last whorl grooved at the base; aperture rather small, flexuous, lip varicose, denticulated within.

KIENER, *Coquilles vivantes*, p. 34. pl. 13. f. 4.

Hab. Island of Mindoro, Philippines; Cuming.

Very nearly allied to the preceding species, but more restricted and curved in outline.

Species 98. (Mus. Cuming.)

COLUMBELLA BUCCINOIDES. *Col. testā oblongā, lævi, picco-nigrā, prope suturam internam pallidè maculatā, anfractibus plano-convexis; aperturā ovatā, superne sinuatā, labro intus denticulatā.*

THE BUCCINUM-LIKE COLUMBELLA. Shell oblong, smooth, pitch-black, sometimes faintly spotted next the sutures, whorls slightly convex; aperture ovate, sinuated at the upper part, lip denticulated within.

SOEWERY, *Proc. Zool. Soc.* 1832, p. 114.

Hab. Aconc, Peru (found under stones, at low-water); Cuming.

This species has a peculiar slaty look, with not often any indication of light spots at the suture.



100



101



104



103 a



102



103 b



105



101



106



107

COLUMBELLA.

PLATE XIX.

Species 99. (Mus. Cuming.)

COLUMBELLA CONSPICUA. *Col. testâ pyramidalis-oblongâ, pallidâ olivacea, pallidâ, munitis spiræ-plis brunneo-interruptis circumscissâ, afractionibus plicato-areolis ad suturam emarginatâ; apertura ovata, labro supero bilobato-lanceolato, labro inferiore, canali subquadrato.*

THE SPINKLED COLUMBELLA. Shell pyramidally oblong, pale-olive, polished, encircled with opaque-white blotches interrupted with faint brown lines, whorls flatly convex, channelled at the sutures; aperture small, tinged on each side with lilac, lip varicose, canal rather produced.

GASKOIN, *Proc. Zool. Soc.* 1851, p. 11.

Hab. —?

A solid polished shell, encircled with opaque-white brown-interrupted blotches upon a dull-olive ground, while the aperture is tinged on either side with lilac.

Species 100. (Mus. Cuming.)

COLUMBELLA AUSTRINA. *Col. testâ oblongo-ovata, eluvata, nitente, afractionibus caraco latifuscatâ; apertura subquadrato-ovata, labro supero latè emarginato, intus conspicuè denticulato.*

THE SOUTHERN COLUMBELLA. Shell oblong-ovate, ivory-white, shining, last whorl encircled with a broad flesh band; aperture rather squarely ovate, lip broadly notched at the upper part, conspicuously denticulated within.

GASKOIN, *Proc. Zool. Soc.* 1851, p. 9.

Hab. Australia.

A shining ivory-white shell, broadly banded on the last whorl with soft flesh-colour, and having the lip broadly but rather superficially notched at the upper part.

Species 101. (Mus. Cuming.)

COLUMBELLA ANNULATA. *Col. testâ oblongo-ovata, levigatâ, eluvata, lineâ costarum conspicuâ medio cingulatâ, spirâ subulnari; apertura subquadrato-ovata, labro supero subemarginato, intus denticulato.*

THE RINGED COLUMBELLA. Shell oblong-ovate, smooth, ivory-white, encircled round the middle with a con-

spicuous chestnut line, spire rather obtuse, aperture somewhat squarely ovate, lip faintly notched at the upper part, denticulated within.

Hab. Australia.

Of the same typical form as the preceding species, but not of the same enamel-like substance. The conspicuous central chestnut line which encircles it appears throughout the spire in the sutures.

Species 102. (Mus. Cuming.)

COLUMBELLA CONTAMINATA. *Col. testâ fraxiformi, albâ, aurantio-fusco sphaclatâ vel brunnea, medio albifuscatâ, spirâ ovata, sutura conicalulatâ, afractionibus plinuiculis, longitudinaliter plicato-liratis, iris in auctura ultimo inferoè cranidis; apertura porciacatâ, labro incrassato, varicoso, intus denticulato, canali caudato.*

THE STAINED COLUMBELLA. Shell fusiform, white, stained with orange-brown or brown, white-banded round the middle, spire sharp, suture channelled, whorls rather flat, longitudinally plicately ridged, ridges on the last whorl disappearing towards the lower part; aperture rather small, lip thickened, varicose, denticulated within, canal caudate.

GASKOIN, *Proc. Zool. Soc.* 1851, p. 7.

Hab. —?

This species may be only a variety of *C. pella*.

Species 103. (Fig. 103 a, 103 b, and 104, Mus. Cuming.)

COLUMBELLA BLANDA. *Col. testâ ovato-pyramidalis, pallidâ, aurantio-fusco longitudinaliter undato-lineatâ et flammulatâ, lineis prope suturam dorsalem atramentariis; apertura latâ, labro supero cillioso et subemarginato, inferoè largido, intus vicè denticulato, canali latiuscato.*

THE FAIR COLUMBELLA. Shell ovately pyramidal, pale, longitudinally wave-lineated and flamed with orange-brown, lines near the dorsal suture inky-black; aperture broad, lip callous and faintly notched at the upper part, swollen at the lower, scarcely toothed within, canal rather broad.

SOEWBY, *Thesaurus Conch.* vol. i. p. 137.

Hab. —?.

An elegantly formed species, singularly characterized by the presence of an inky stain of short black lines on the back next the suture.

Species 105. (Mus. Cuming.)

COLUMBELLA UNICOLOR. *Col. testā ovatā, medio ventricosā, fulco-castaneā, laevigatā, suturā subimpressā; aperturā latiusculā, supra et infra subeffusā, labro incrassato, intus denticulato.*

THE ONE-COLOURED COLUMBELLA. Shell ovate, ventricose in the middle, fulvous-chestnut, smooth, suture rather impressed; aperture rather broad, somewhat effused above and below, lip thickened, denticulated within.

SOWERBY, Pro. Zool. Soc. 1832, p. 119.

Hab. Galapagos Islands; Cuming.

The effused contour of the aperture and outer lip of this species arises from its inclination to become notched.

Species 106. (Mus. Cuming.)

COLUMBELLA FULLA. *Col. testā acuminato-oblongā, intus extusque saturatē brunneā, columellā albā, anfractibus convexusculis, laevibus; aperturā latiusculā, labro tenui.*

THE RUSSET-BROWN COLUMBELLA. Shell acuminate oblong, dark-brown within and without, columella white, whorls slightly convex, smooth; aperture rather broad, lip thin.

GASCOIN, Pro. Zool. Soc. 1851, p. 6.

Hab. —?.

It is extremely doubtful whether this shell is correctly placed in the genus *Columbella*.

Species 107. (Mus. Cuming.)

COLUMBELLA TRIFASCIATA. *Col. testā ovatā, fulco-castaneā, zonulā fulvescente-albā medio circulatā, anfractibus convexis, laevibus; aperturā breviusculā, supra et infra effusā, intus minutē denticulatā.*

THE ONE-BANDED COLUMBELLA. Shell ovate, fulvous-chestnut, encircled round the middle with a narrow fulvous-white zone, whorls convex, smooth; aperture rather short, effused above and below, minutely denticulated within.

SOWERBY, Pro. Zool. Soc. 1832, p. 114.

Columbella nizonalis, Gray.

Hab. Valparaiso (under stones, at low-water); Cuming.

So closely allied to *C. unicolor* as to render it doubtful whether it is a distinct species.

Columbella Pl. XI.



118



109



110



111



112



113



114



115



116



117

COLUMBELLA.

PLATE XX.

Species 108. (Mus. Cuming.)

COLUMBELLA ATOMELLA. *Col. testâ cylindraceo-ovata, fulvescente-castaneâ, obscureâ faviatâ, anfractibus superne obliquè costatis; aperturâ ovatâ, labro varicosa.*

THE LITTLE-ATOM COLUMBELLA. Shell cylindrically ovate, fulvous-chestnut, obscurely banded, whorls obliquely ribbed round the upper part; aperture ovate, lip varicose.

DELOS. Monog. du Genre, pl. 11. f. 5, 6.

Hab. West Indies.

Of a livid-chestnut colour, faintly banded, with the whorls partially obliquely ribbed.

Species 109. (Fig. 109, 110, and 112.)

COLUMBELLA FUSILLA. *Col. testâ ovatâ, albâ, lineis aurantio-brunneis longitudinalibus flexuoso-undatis variè pictâ, anfractibus convexis, levibus; aperturâ parvâ, labro tenuicula, brunneo, viz denticulato.*

THE SMALL COLUMBELLA. Shell ovate, whitish, variously painted with orange-brown longitudinal flexuously waved lines, whorls convex, smooth; aperture small, lip rather thin, brown, scarcely denticulated.

SOVERBY, Pro. Zool. Soc. 1844, p. 53.

Nitidella Gouldii, Carpenter.

Hab. Island of St. Vincent, West Indies.

Chiefly distinguished by its conspicuous painting of orange-brown lines, ranged in more or less close-set longitudinal festoons.

Species 111. (Mus. Cuming.)

COLUMBELLA DECIPIENS. *Col. testâ ovatâ, albâ, punctis aurantio-fuscis sparsim promiscuè pictâ, spirâ brevisculâ, acutâ, anfractibus densè tenuiliratis, interstitiis cancellatis, liris anfractibus ultimi evanidis; aperturâ parvâ, labro carioso, superne submarginato, iatus denticulato.*

THE DECEPTIVE COLUMBELLA. Shell ovate, whitish, sparingly promiscuously painted with orange-brown dots, spire rather short, sharp, whorls closely finely ridged, interstices cancellated, ridges of the last whorl disappearing; aperture small, lip varicose, slightly emarginated at the upper part, denticulated within.

C. B. ADAMS, Contributions to Conchology, p. 58.

Hab. Jamaica - C. B. Adams.

The coloured dots of this species have a flame-like character next the sutures, and cluster into an imperfect band at the base.

Species 113. (Mus. Cuming.)

COLUMBELLA PARVA. *Col. testâ oblongâ, subheavâ, albâ, fasciâ latâ centrali nigricante-castaneâ cingulatâ, spirâ conicâ, anfractibus convexis, longitudinaliter costatis, interstitiis densè cancellatis, costis anfractibus ultimi prope labrum evanidis; aperturâ ovatâ, labro superne submarginato, iatus denticulato.*

THE LITTLE COLUMBELLA. Shell oblong, rather stout, whitish, encircled with a broad central blackish-chestnut band, spire conical, whorls convex, longitudinally ribbed, interstices densely cancellated, ribs of the last whorl disappearing near the lip; aperture ovate, lip lightly emarginated at the upper part, denticulated within.

SOVERBY, Pro. Zool. Soc. 1844, p. 52.

Hab. Monte Christi, West Columbia; Cuming.

A solid rather obese shell, densely cancellated, encircled round the middle with a broad blackish-chestnut band.

Fig. 114. (Mus. Cuming.)

The shell here figured proves to be a specimen of *Mangelia (Cythara, nonnull.)*

Species 115. (Mus. Cuming.)

COLUMBELLA DIMINUTA. *Col. testâ ovatâ, utrinque attenuatâ, albâ, sparâ fuscâ punctatâ, fasciâ nigricante ad basin, superficie omnino densè cancellatâ; aperturâ parvâ, labro latè varioso, superne emarginato.*

THE MINUTE COLUMBELLA. Shell ovate, attenuated at each end, whitish, sparingly brown-dotted, with a blackish band at the base, surface closely strongly cancellated throughout; aperture small, lip broadly varicose, notched at the upper part.

C. B. ADAMS, Cat. Shells of Panama, p. 85.

Hab. Panama; C. B. Adams.

A small, strongly marked species, rudely cancellated throughout, with a characteristic dark band at the extreme base of the shell.

Species 116. (Mus. Cuming.)

COLUMBELLA PULCHRIOR. *Col. testâ ovatâ, tenuiculâ, levigatâ, subpellucido-albâ, maculis punctisque æquidistantibus purpureo-fuscis ornatâ, anfractibus decliviter convexis; aperturâ ovatâ, labro tenuiculo, superâ subemarginato.*

THE BEAUTIFUL COLUMBELLA. Shell ovate, rather thin, smooth, subpellucid-white, ornamented with purple-brown blotches and equidistant dots, whorls slopingly convex; aperture ovate, lip rather thin, slightly notched at the upper part.

C. B. ADAMS, Cat. Shells of Panama, p. 94.

Hab. Panama (under stones, at low-water mark); C. B. Adams.

Rather an abnormal form of *Columbella*, finely dotted and blotched with chocolate-brown, the colour being rather

gathered and filed at the sutures. The dots are more minute than is represented in the accompanying figure.

Species 117. (Mus. Cuming.)

COLUMBELLA MONILIFERA. *Col. testâ oblongo-acuminatâ solidâ, undique valdè decussatim costatâ, albâ, maculis subquadratis brunneis bifasciatim cinctâ; aperturâ subangustâ, intus denticulatâ.*

THE NECKLACE COLUMBELLA. Shell oblong-acuminated, solid, strongly decussately ribbed throughout, white, encircled with two bands of somewhat square brown spots; aperture rather narrow, denticulated within.

SOWERBY, Pro. Zool. Soc. 1844, p. 53.

Hab. West Indies.

The granules formed at the points of decussation of the ribs have a delicate pearly appearance.



118.



119.



120.



121.



122.



123.



124.



125.



126.



127.

COLUMBELLA.

PLATE XXI.

Species 118. (Mus. Cuming.)

COLUMBELLA CEREALIS. *Col. testā pyramidalī-oblongā, albidā, nitente, lineis tenuibus aurantiis longitudinaliter undatis eleganter pictā, anfractibus subrotundatis, supernē tuberculato-costatis; aperturā parvā, columellā tortuosā.*

THE CORN COLUMBELLA. Shell pyramidally oblong, whitish, shining, elegantly painted with delicate longitudinally waved orange lines, whorls somewhat rounded, tubercularly ribbed at the upper part; aperture small, columella twisted.

MENKE, MS. Mus. Cuming.

Hab. —?

Chiefly characterized by the tubercularly ribbed sculpture of the whorls beneath the sutures, and by the painting of light longitudinally waved orange lines.

Species 119. (Fig. a, b, Mus. Cuming.)

COLUMBELLA CATENATA. *Col. testā oblongā, crassā, pallidā, maculis lineisque aurantiis-costaneis tessellatis bifasciatum marmoratā, spirā subconvexatā, anfractibus longitudinaliter fortiter densē costatis, ad basin strictis; aperturā parviusculā, utrinque denticulatā, labro supernē emarginatā.*

THE CHAINED COLUMBELLA. Shell oblong, thick, pale, marbled with two bands of tessellated orange-brown bands and lines, spire rather acuminate, whorls longitudinally strongly closely ribbed, contracted at the base; aperture rather small, denticulated on each side, lip notched at the upper part.

SOWERBY, Pro. Zool. Soc. 1844, p. 52.

Columbella costulata, C. B. Adams.

Hab. Jamaica.

A strongly ribbed shell, encircled with two characteristic orange-brown bands, blotched on the alternate ribs.

Species 120. (Mus. Cuming.)

COLUMBELLA LACTEA. *Col. testā ovalī vel oblongo-cylindricā, tenui, pellucidā, nitente, aurantio pallidissime tinctā et flammulatā, apice roseo; aperturā brevi, labro subincrassato, supernē emarginatā, vix denticulatā.*

THE MILKY COLUMBELLA. Shell ovate or oblong-cylindrical, thin, transparent, shining, very faintly tinged

and flamed with orange, apex pink; aperture short, lip rather thickened, notched at the upper part, scarcely denticulated.

Hab. Gulf of California; Mr. Babb, R.N.

So transparent that the columella may be seen through-out, from its commencement within the apex to the base.

Species 121. (Mus. Cuming.)

COLUMBELLA CARINATA. *Col. testā pyramidalī-ovalī, fulcā, fasciis duabus castaneis albifloccatis cingulatā, anfractibus convexis, ultimo versus aperturam conspicuē carinato; aperturā subquadratā, livido-violaceā, denticulatā, effusā, supernē sinuatā.*

THE KEEL COLUMBELLA. Shell pyramidally ovate, fulvous, encircled with two white-floccated chestnut bands, whorls convex, the last conspicuously keeled towards the aperture; aperture somewhat square, livid-violet, denticulated, effused, sinuated at the upper part.

HINDS, Moll. Voy. Sulphur, p. 39. pl. 10. f. 15, 16.

Hab. Bodegas and San Diego, California (at seven fathoms depth); Hinds.

The keel which distinguishes this species being at the back of the last whorl, is not seen in the accompanying figure, but is indicated by the sinus of the aperture.

Species 122. (Mus. Cuming.)

COLUMBELLA SANTA-BARBARENSIS. *Col. testā subfusiformi-oblongā, ventricosisculā, pallidē fulvo-olivaceā, infra suturam albimaculatā, spirā acutā, anfractibus convexis, spiraliter lineari-sulcatis; aperturā subquadratā, fauce violaceā, labro supernē emarginatā.*

THE SANTA BARBARA COLUMBELLA. Shell somewhat fusiformly oblong, rather ventricose, pale fulvous-olive, white-spotted below the sutures, spire sharp, whorls convex, spirally striately grooved; aperture somewhat square, interior violet, lip notched at the upper part.

CARPENTER, Pro. Zool. Soc. 1856, p. 208.

Hab. Santa Barbara, Upper California.

The surface of this well-marked species is not merely faintly striated, as described by Mr. Carpenter, but distinctly linearly grooved, unusually so for a *Columbella*.

Species 123. (Mus. Cuming.)

COLUMBELLA SPADICEA. *Col. testā cylindraceo-oblongā, apice acuminatā, castaneo-nigrā, zonā albā medio cingulatā, basi albā, anfractibus longitudinaliter densē costatis, costis subgranosis; aperturā parvā, subdenticulatā.*

THE BAY COLUMBELLA. Shell cylindrical oblong, acuminated at the apex, chestnut-black, encircled round the middle with a small whitish zone, base whitish, whorls longitudinally closely ribbed, ribs slightly grained; aperture small, faintly denticulated.

PHILIPPI, MS. Mus. Cuming.

Hab. Mazatlan.

A shining chestnut-black shell, discoloured specimens of which are probably of a light red or bay colour, closely ribbed throughout, encircled round the middle with a narrow white zone.

Species 124. (Mus. Cuming.)

COLUMBELLA ATRAMENTARIA. *Col. testā acuminato-ovata, crassā, medio ventricosā, caeruleo-nigrā, sparāim albipunctatā, spirāliter densē sulcato-striatā, longitudinaliter plicato-costatā, costis infernē ecanidis; aperturā ovatā, denticulatā, fovea intensē violacē, labro superiō submarginato.*

THE INKY COLUMBELLA. Shell acuminately ovate, thick, ventricose in the middle, blue-black, sparsely white-dotted, spirally densely groove-striated, longitudinally plicately ribbed, ribs fading towards the lower part; aperture ovate, denticulated, interior deep-violet, lip slightly notched at the upper part.

SOWERBY, Pro. Zool. Soc. 1844, p. 51.

Hab. Chatham Island, Galapagos.

A solid, partially ribbed, blue-black shell, obscurely

white-dotted towards the base, with the aperture deep-violet.

Species 125. (Mus. Cuming.)

COLUMBELLA LACHRYMA. *Col. testā abbreviato-fusiformi, utrinque attenuatā, nivē, aurantio-fusco pallidē tinctā, superficie omnino cancellatā, spirā conicā, densē granulatā; aperturā elongatā, angustā, labro superiō emarginato.*

THE TEAR COLUMBELLA. Shell shortly fusiform, attenuated at each extremity, snow-white, faintly stained with orange-brown, surface entirely cancellated, spire conical, densely grained; aperture elongated, narrow, lip notched at the upper part.

GASKOIN, MS. Mus. Cuming.

Hab. — ?

Of a distinct typical form, unusually attenuated towards the base, while the spire is largely conical.

Species 126. (Mus. Cuming.)

COLUMBELLA CANCELLATA. *Col. testā ovatā, medio ventricosiusculā, aurantio-carnē, apice basiue rosaceis, superficie omnino cancellatā, infra suturas granulatā; aperturā brevī, intus denticulatā, labro superiō submarginato.*

THE CANCELLATED COLUMBELLA. Shell ovate, rather ventricose in the middle, orange-flesh, apex and base pink, surface entirely cancellated, granulated below the sutures; aperture short, denticulated within, lip slightly notched at the upper part.

GASKOIN, Pro. Zool. Soc. 1851, p. 6.

Hab. West Indies.

Readily distinguished by its solid cancellated sculpture and soft orange-pink tone of colouring.



127



128



129



130



131



132



133



134



135



136

COLUMBELLA.

PLATE XXII.

Species 127. (Mus. Cuming.)

The shell here figured proves to be a variety of *C. Hindai*, Gaskoin.

Species 128. (Fig. 128 and 129, Mus. Cuming.)

COLUMBELLA PYGMAEA. *Col. testā acuminato-ovatā, albidā, nitente, maculis intensè castaneis infra suturas interruptè pictā, anfractibus superne obliquè costatis; aperturā parvā, labro parvisculā, labro incrassato, superne sub-emarginato.*

THE PIGMY COLUMBELLA. Shell acuminately ovate, whitish, shining, interruptedly painted beneath the sutures with dark-chestnut spots, whorls obliquely ribbed round the upper part; aperture rather small, lip thickened, slightly notched at the upper part.

SOWERBY, Pro. Zool. Soc. 1832, p. 119.

Columbella tenuata, Philippi.

Hab. St. Elena, West Columbia (in sandy mud, at the depth of ten fathoms); Cuming.

A pearly-ribbed shell, distinguished by a very characteristic band, next the sutures, of dark-chestnut spots.

Species 130. (Mus. Cuming.)

COLUMBELLA VENUSTA. *Col. testā ovatā, albā, lineis castaneis æquidistantibus undique cingulatā, anfractibus subrotundatis, infra suturas tuberculato-costatis; aperturā parvā, labro superne emarginato, intus denticulato.*

THE HANDSOME COLUMBELLA. Shell ovate, white, encircled throughout with equidistant chestnut lines, whorls somewhat rounded, tubercularly ribbed beneath the sutures; aperture small, lip notched at the upper part, denticulated within.

Columbella tenuata, Philippi.

Hab. ———?

A rather solid shell, well marked by its tubercularly ribbed sculpture and painting of parallel circular chestnut lines.

Species 131. (Mus. Cuming.)

COLUMBELLA MESTA. *Col. testā elongatā, fulvo-nigri-*

cante, anfractibus declivi-converis, obliquè costatis, interstitiis cancellatis, costis anfractis ultimi evanidis; aperturā parvā, labro varicoso, superne emarginato.

THE SAD COLUMBELLA. Shell elongated, fulvous-black, whorls slantingly convex, obliquely ribbed, interstices cancellated, ribs of the last whorl disappearing; aperture small, lip varicose, notched at the upper part.

C. B. ADAMS, Cat. Shells of Panama, p. 94.

Hab. Panama (about sticks and stones, in a grove of trees, a little above half-tide level); C. B. Adams.

A dark but rather delicately toned fulvous-black shell, strongly cancellated on the upper whorls, whilst towards the lower part of the last whorls only the transverse striæ are present.

Species 132. (Mus. Cuming.)

COLUMBELLA SULCOSA. *Col. testā acuminato-cylindraceā, plumbeo-nigrā, longitudinaliter obliquè costatā, costis pallidis, infra suturas granulatis, interstitiis dense cancellatis; aperturā parvā, labro superne emarginato, intus denticulato.*

THE GROOVED COLUMBELLA. Shell acuminately cylindrical, leaden-black, longitudinally obliquely ribbed, ribs pale, granulated beneath the sutures, interstices densely cancellated; aperture small, lip notched at the upper part, denticulated within.

SOWERBY, Pro. Zool. Soc. 1832, p. 118.

Hab. Annas and Lord Hood's islands; Cuming.

Of a peculiar dull leaden-black colour, with the ribs of a lighter hue, ranging across the shell in an oblique flexuous direction.

Species 133. (Mus. Cuming.)

COLUMBELLA BACCATA. *Col. testā ovatā, lævigatā, nitente, albidiā, aurantio-brunneo fasciatā et tessellatim marmoratā; aperturā subquadratā, labro superne emarginato, intus denticulato.*

THE PEARL-SET COLUMBELLA. Shell ovate, smooth, shining, whitish, banded and tessellately mottled with orange-brown; aperture rather square, lip notched at the upper part, denticulated within.

GASKOIN, Pro. Zool. Soc. 1851, p. 9.

Hab. — ?

The network painting of this species has a characteristic pearl-like appearance.

Species 134. (Mus. Cuming.)

COLUMBELLA TESSELLATA. *Col. testá ovatá, utrinque attenuatá, nigricante-olivaceá, maculis parvis subquadratis albis promiscuè tessellatá, spirá acutá, anfractibus spiráliter lineari-sulcatis, longitudinaliter costatis, costis prope labrum evanidis; aperturá parvisculá, labro superne emarginato.*

THE TESSELLATED COLUMBELLA. Shell ovate, attenuated at each end, blackish-olive, promiscuously tessellated with small, somewhat square white spots, spire sharp, whorls spirally linearly grooved, longitudinally ribbed, ribs disappearing near the lip; aperture rather small, lip notched at the upper part.

C. B. ADAMS.

Hab. — ?

Very closely allied to *C. atramentaria*.

Species 135. (Mus. Cuming.)

COLUMBELLA GOULDI. *Col. testá gracili, subfusiformi, livido-fuscá, nitente, spirá acuminatá, anfractibus declivi-convexis, dense livato-costatis, anfractu ultimo medio lævigato, ad basin spiráliter sulcato; aperturá parvâ, angustâ, labro varicoso, intus denticulato.*

GOULD'S COLUMBELLA. Shell slender, somewhat fusiform, livid-brown, shining, spire acuminated, whorls slopingly convex, closely ridge-ribbed, last whorl smooth in the middle, spirally grooved at the base; aperture small, narrow, lip varicose, denticulated within.

AGASSIZ, MS. Mus. Cuming.

Hab. New York Harbour.

Of a peculiar yellowish-livid-brown colour, shining, and sharply slenderly ribbed, the ribs gradually disappearing on the last whorl.

Species 136. (Mus. Cuming.)

COLUMBELLA DICHROA. *Col. testá subpyramidali, levigatâ, politâ, albâ, costarum-aurantiis latè longitudinaliter reticulato-striatâ; aperturâ parvâ, latiusculâ, labro vix denticulato.*

THE TWO-COLOURED COLUMBELLA. Shell subpyramidal, smooth, polished, white, longitudinally broadly net-stripped with chestnut-orange; aperture small, rather broad, lip scarcely denticulated.

SOWERBY, Pro. Zool. Soc. 1841, p. 50.

Hab. Island of St. Vincent, West Indies; Guilding.

Distinguished by a marked style of colouring, consisting of broad stripes of chestnut-orange network descending conspicuously from the apex.



138.



137.



139.



140.



141 a.



141 b.



142.



143 a.



143 b.



144.

COLUMBELLA.

PLATE XXIII.

Species 137. (Mus. Cuming.)

COLUMBELLA NIGRICANS. *Col. testā oblongā, carneo-nigricante, apice uncinatā, superficie omnino cancellatā, infra suturam granulatā; aperturā parvisculā, intus denticulatā, labro superne conspicuè emarginatā.*

THE BLACKISH COLUMBELLA. Shell oblong, blue-black, acuminate at the apex, surface entirely cancellated, granulated beneath the sutures; aperture rather small, denticulated within, lip conspicuously notched.

SOEWERY, *Pro. Zool. Soc.* 1844, p. 52.

Hab. Galapagos Islands.

Very similar in form and sculpture to Mr. Gaskoin's *C. cancellata*, from the West Indies.

Species 138. (Mus. Cuming.)

COLUMBELLA ALBINODELOSA. *Col. testā oblongo-ovata, pallidē cinerā, punctis brunneis obliquè quadratis biserialis trifasciatā, spirā acuminatā, anfractibus superne plicato-nodulosis, nodulis opaco-albis; aperturā oblongā, labro incrassato, intus denticulatā.*

THE WHITE-NODULED COLUMBELLA. Shell oblong-ovate, pale-ash, encircled with three bands of obliquely square brown spots in double rows, spire acuminate, whorls plicately noduled near the upper part, nodules opaque-white; aperture oblong, lip thickened, denticulated within.

GASKOIN, *Pro. Zool. Soc.* 1851, p. 3.

Hab. — ?

Prettily banded with three pairs of rows of obliquely square chestnut dots, the plicated nodules of the whorls below the suture being flaked with opaque-white.

Species 139. (Mus. Cuming.)

COLUMBELLA BRODERIPII. *Col. testā ovata, lavi, nitente, albidā, aurantio-castaneo variè reticulatā; aperturā oblongā, latiusculā, labro subincrassato, superne latè emarginato, intus denticulato.*

BRODERIP'S COLUMBELLA. Shell ovate, smooth, shining, whitish, variously reticulated with orange-chestnut; aperture oblong, rather broad, lip somewhat thickened, broadly notched at the upper part, denticulated within.

SOEWERY, *Pro. Zool. Soc.* 1844, p. 53.

Hab. Alboran Island.

A smooth shining species of simple character, tessellated and interlaced with delicate orange-chestnut lines.

Species 140. (Mus. Cuming.)

COLUMBELLA TENIATA. *Col. testā fusiformi-ovata, rufescente-carnē, saccalis quadratis rufis-foris tenuiatā, anfractibus plano-concavis, levibus, alutinis; aperturā parvā, labro incrassato, superne sinuata.*

THE BILLETED COLUMBELLA. Shell fusiform, ovate, reddish flesh-colour, filleted with square red-brown spots, whorls flatly convex, smooth, shining; aperture small, lip thickened, sinuated at the upper part.

ADAMS and REEVE, *Moll. Voy. Samarang*, p. 34. pl. 11. f. 19.

Hab. Borneo.

In the typical specimen of this species, figured in the *Mollusca of the Voyage of the Samarang*, there are two fillets of red-brown spots on each whorl, the lower of which is concealed in all but the last whorl.

Species 141. (Mus. Cuming.)

COLUMBELLA ORESA. *Col. testā pyramidali-ovata, carviescente-albā, aurantio-fusco tessellato-marmoratā, fasciā albā centrali, anfractibus plano-concavis, plicato-costellatis, costellis in anfractis ultimo evanidis; aperturā oblongā, labro superne emarginato, intus denticulato.*

THE STOUT COLUMBELLA. Shell pyramidally ovate, bluish-white, tessellately marbled with orange-brown, leaving a central white band, whorls flatly convex, plicately finely ribbed, ribs disappearing in the last whorl; aperture oblong, lip notched at the upper part, denticulated within.

Buccinan *obesum*, C. B. Adams, *Pro. Nat. Hist. Soc. Boston*, 1845.

Hab. — ?

Mottled with an irregular network of orange-brown, leaving a broken spiral white band in the middle.

Species 142. (Mus. Cuming.)

COLUMBELLA UNCINATA. *Col. testā trigono-ovata, Strombiformi, fulvescente-olivaceā, punctis pallidis lentiginosa, superne maculis albis lineis rufo-brunneis interruptis cingulatā, spirā breviusculā, acutā, anfractibus primis superne nodulosis, ceteris superne angulatis et*

lineari-sulcatis; aperturâ longitudinali, amplâ, fauce violaceâ, columellâ excavatâ, basis versus granulâtâ; labro superiô in canalem uncinatum porrecto, intus undique denticulato.

THE HOOKED COLUMBELLA. Shell triangularly ovate, Strombus-shaped, fulvous-olive, freckled with pale dots, encircled round the upper part with white spots, interrupted with red-brown lines, spire rather short, sharp, the first whorls noduled at the upper part, the rest angled and linearly grooved at the upper part; aperture longitudinal, large, interior violet; columella excavated, granulated towards the base, lip extended at the upper part into a hooked canal, denticulated within throughout.

OWERBY, Pro. Zool. Soc. 1832, p. 114

Hab. Island of Muerte, and Bay of Guayaquil; Cuming.

A very characteristic species, of the same peculiar type as *C. harpiformis*.

Species 143. (Fig. a, 9, Mus. Cuming.)

COLUMBELLA HINDSI. *Col. testâ oblongo-ovalâ, spiritaliter striatâ, rufescente-cinereâ, maculis saturatis obscure leniata, anfractibus superiôrè tumidiusculis; aperturâ subquadratâ, intus denticulatâ, supra et infra effusâ.*

HINDS'S COLUMBELLA. Shell oblong-ovate, spirally

striated, reddish-ash, obscurely filleted with dark spots, whorls rather swollen at the upper part; aperture somewhat square, denticulated within, effused above and below.

GASKOIN, Pro. Zool. Soc. 1851.

Hab. ———?

A dull reddish-ash shell of rather light growth, obscurely filleted with spots of a darker tone.

Species 144. (Mus. Cuming.)

COLUMBELLA DERMESTOIDES. *Col. testâ oblongo-pyramidali, lavi, nitente, fulvescente-rufâ, fasciis maculisque albicantibus cingulatâ, anfractibus subplanulatis; aperturâ parvisculâ, labro simplici, viz emarginato, intus denticulato.*

THE LEATHER-WORM COLUMELLA. Shell oblong, pyramidal, smooth, shining, fulvous-red, encircled with whitish bands and spots, whorls rather flat; aperture rather small, lip simple, scarcely emarginated, denticulated within.

OWERBY, Thesaurus Conch. vol. i. p. 131. pl. 39. f. 123.

Buccinum dermestoides, Kieuer.

Hab. West Indies.

Mottled and banded with pale fulvous-red and white, beneath a shining enamelled surface.



156 a



157



156 b



157



158



159



150



151 a



151 b



152

COLUMBELLA.

PLATE XXIV.

Species 145. (Mus. Cuming.)

COLUMBELLA ALA-PERDICIS. *Col. testā subfusiformi-turbinatā, tenuicūlā, spirā acuminatā, anfractibus convexis, levibus, ultimo inflato; albidā, maculis rufofuscis bifasciatā, fasciis interstitiis dense lentiginosā; columellā anterocentā, oblā, ad basin multiplicatā, aperturā ovatā, labro simplici.*

THE PARTRIDGE-WING COLUMBELLA. Shell fusiformly turbinated, rather thin, spire acuminated, whorls convex, smooth, last whorl inflated; whitish, encircled with two bands of red-brown spots, interstices between the bands densely freckled; columella rather excavated, white, one-plaited at the base, aperture ovate, lip simple.

Hab. — ?

An aberrant form of the genus, of light inflated growth, with no indication of any internal denticles.

Species 146. (Mus. Cuming.)

COLUMBELLA FICTA. *Col. testā ovatā, crassiusculā, spirā elatā, subobtusā, anfractibus levibus, plano-declivibus, dense subgybbosā; castaneo-olivaceā, maculis albis reticulatē flammatā; aperturā parvisculā, labro incrassato, intus denticulato.*

THE PAINTED COLUMBELLA. Shell ovate, rather thick, spire rather obtuse, whorls smooth, flatly slanting, thin, rather gibbous; chestnut-olive, reticulately flamed with white spots; aperture rather small, lip thickened, denticulated within.

Hab. — ?

A stout, brightly painted shell, marked with a few irregular flames of white network.

Species 147. (Mus. Cuming.)

COLUMBELLA PUMILIO. *Col. testā abbreviato-fusiformi, crassā, subgybbosā, spirā turritā, anfractibus supernē rudē angulatā et nodatā, nodis in anfractu ultimo tumidis, irregularibus; albidā, aurantio-fusco pallidē tinctā; aperturā angustā, labro dense varicoso, intus obtusē denticulato.*

THE DWARF COLUMBELLA. Shell shortly fusiform, thick, rather gibbous, spire turreted, whorls rudely angled and noduled, nodules on the last whorl swollen, irre-

gular; whitish, faintly tinged with orange-brown; aperture narrow, lip thickly varicose, obtusely denticulated within.

Hab. Cumana, Venezuela; Dyson.

Very closely allied to *C. rufrova*, but of shorter growth, more humped, and more irregularly noduled; and from its habitat there is also reason to believe it to be distinct.

Species 148. (Mus. Cuming.)

COLUMBELLA LIVESCENS. *Col. testā ovato-turbinatā, volidiusculā, spirā acutā, versus apicem tenuicostatā, anfractibus subobovatis, convexis, levibus; aurantio-fuscā nitente. livescente, punctis albis varioratā; columellā labiatā, aperturā parvisculā purpurascente. labro incrassato, medio subcontracto, intus denticulato.*

THE BLUSH COLUMBELLA. Shell ovately turbinated, rather solid, spire sharp, finely ribbed towards the apex, whorls rather stout, convex, smooth; orange-brown, shining, bluish, marbled with white dots; columella lipped, aperture rather small, purplish, lip thickened, slightly contracted in the middle, denticulated within.

Hab. Island of Luzon, Philippines; Cuming.

A stout, shining species, with a sharp spire finely ribbed near the apex. The colour is a mottled pattern of orange-brown, livid here and there with bluish-purple.

Species 149. (Mus. Cuming.)

COLUMBELLA SOLIDULA. *Col. testā subfusiformi, crassā, nitente, spirā acutā, anfractibus plano-declivibus, ultimo dorso juxta suturam plicato-tuberculato; albidā, maculis perpancis aurantiis et reticulā variegatā. aperturā subangustā, labro incrassato, intus denticulato.*

THE SOLID COLUMBELLA. Shell somewhat fusiform, thick, shining, spire sharp, whorls flatly slanting, the last plicately tubercled at the back next the suture; white, variegated with a few orange-brown spots and with a network; aperture rather narrow, lip thickened, denticulated within.

Hab. — ?

The specimen here figured is rather faintly coloured, and in a manner indicative of it being sometimes darker stained.

Species 150. (Mus. Cuming.)

COLUMBELLA LUTEOLA. *Col. testâ subtriangulo-ovata, tumida, spirâ brevis; luteolâ, epidermide lævigatâ indatâ, rufo ad suturas punctatâ; aperturâ oblongâ, labro tenuiculo.*

THE YELLOWISH COLUMBELLA. Shell somewhat triangularly ovate, swollen, spire short; yellowish, covered with a smooth epidermis, dotted with red at the sutures; aperture oblong, lip rather thin.

KIENER, Icon. coquilles vivantes, p. 12. pl. 4. f. 2.
Hab. — ?

Not having a specimen of *C. luteola* without its epidermis, it is impossible to say what may be the pattern of colouring of the species.

Species 151. (Mus. Cuming.)

COLUMBELLA VALIDA. *Col. testâ subgloboso-ovata, solidâ, undique validè costatâ, spirâ subobtusâ; fusciscenti-rufâ, medio albi-fasciatâ, ad basin albi-punctatâ; aperturâ parvâ, labro intus denticulato.*

THE STRONG COLUMBELLA. Shell somewhat globosely ovate, solid, everywhere strongly ribbed, spire rather

obtuse; brownish-red, white-banded round the middle, white-dotted at the base; aperture small, lip denticulated within.

Hab. Guatemala.

This species very much resembles the short globose *Mitres* in appearance.

Species 152. (Mus. Cuming.)

COLUMBELLA ZELINA. *Col. testâ cylindraceo-oblongâ, medio gibbosiusculâ, solidâ, spirâ brevi, obtusâ, lævigatâ; rufo-caeruleâ, lineis brevibus angulato-undatis obliquè variè sculptâ; aperturâ perangustâ, labro intus denticulato.*

THE RIVAL COLUMBELLA. Shell cylindrically oblong, rather gibbous in the middle, solid, spire short, obtuse, smooth; reddish-chestnut, obliquely variously scratched with short angularly waved lines; aperture very narrow, lip denticulated within.

DUCCLOS, Monog. pl. 4. f. 5, 6.
Hab. — ?

A very characteristic and rare species, at once recognizable by its singular peculiarity of marking.

Columbella Pl. XXX.



COLUMBELLA.

PLATE XXV.

Species 153. (Mus. Cuming.)

COLUMBELLA TROCHATA. *Col. testâ acuminato-oblongâ, levigatâ, spirâ graciliori, anfractibus convexis, ultimo ad basin subulato-striatis; Inteseatis, aurantio punctulatâ, maculis micis caucasio-nubris infra suturas circulatâ; aperturâ ovatâ, labro intus denticulatâ.*

THE BEEDEWED COLUMBELLA. Shell acuminate oblong, smooth spire acicular, whorls convex, the last groove-striated at the base; yellowish, finely dotted with orange, and encircled beneath the sutures with orange-shaded snow-white spots; aperture ovate, lip denticulated within.

Hab. Australia.

Distinguished by its acicular form and very peculiar marking.

Species 154. (Fig. a, b, Mus. Cuming.)

COLUMBELLA STEIGATA. *Col. testâ ovatâ, levigatâ, spirâ mediocri, anfractibus convexis; purpureo-roseo-vinacea, strigis angustis sanguineo-castaneis longitudinaliter promiscuè pictâ; aperturâ parviusculâ, labro simplici.*

THE STREAKED COLUMBELLA. Shell ovate, smooth, spire middling, whorls convex; purple-ash, longitudinally promiscuously painted with blood-stained chestnut streaks; aperture rather small, lip simple.

Hab. — ?

A smooth shell, painted with longitudinal streaks of a peculiar irregularly smeared character.

Species 155. (Mus. Cuming.)

COLUMBELLA ELATA. *Col. testâ elongatâ, subfusiformi, solidâ, spirâ prolertâ, anfractibus subangustis, longitudinaliter plicato-costatis; albâ, castaneo variè undato-lineatâ; aperturâ parvâ, columellâ tenuè labiatâ.*

THE STately COLUMBELLA. Shell elongated, somewhat fusiform, solid, spire produced, whorls rather narrow, longitudinally plicately ribbed; white, variously wave-lined with chestnut; aperture small, columella thinly lipped.

Hab. — ?

A narrow solid Mitre-like shell, conspicuously painted

with longitudinally waved chestnut lines upon a white ground.

Species 156. (Fig. a, b, Mus. Cuming.)

COLUMBELLA CUMINGII. *Col. testâ elongatâ, subcylindricâ, ad basin recurvâ, spirâ valde productâ, prope apicem minutè costatâ, anfractibus angustis, plano-convexis, spiruliter sulcato-striatis; purpureo-roseo-violaceâ, bifasciatâ rufipunctatâ; aperturâ parvâ, brevi, superne emarginatâ, labro subincrassato, intus denticulatâ.*

CUMING'S COLUMBELLA. Shell elongated, subcylindrical, recurved at the base, spire very produced, minutely ribbed near the apex, whorls narrow, flatly convex, spirally groove-striated; purple-violet, encircled with two bands of red dots; aperture small, short, notched at the upper part, lip rather thickened, denticulated.

Hab. Island of Capul, Philippines; Cuming.

A very interesting violet-coloured species, with the spire curiously produced.

Species 157. (Mus. Cuming.)

COLUMBELLA BACULUS. *Col. testâ fusiformi, solidâ, ad basin contractâ et recurvâ, spirâ acuminatâ, suturis subcanaliculatis, anfractibus plano-declinibus; albâ, aurantio vittatâ et maculatâ; aperturâ parvâ, columbellâ labiatâ.*

THE CLUB COLUMBELLA. Shell fusiform, solid, contracted and recurved at the base, spire acuminate, with the sutures slightly channelled, whorls flatly slanting; whitish, filleted and spotted with orange; aperture small, columella lipped.

Hab. China Seas.

A solid shell of good typical character, contracted and recurved at the base.

Species 158. (Fig. a, b, Mus. Cuming.)

COLUMBELLA AVENA. *Col. testâ ovatâ, spirâ breviusculâ, acuminatâ, anfractibus convexis, levigatis; albâ, aurantio nitidè reticulato-maculatâ et strigatâ; aper-*

turā pareiusculā, supernè subemarginatā, columellā excavatā, labro intus denticulato.

THE OAT COLUMBELLA. Shell ovate, spire rather short, acuminate, whorls convex, smooth; whitish, neatly reticulately blotched and streaked with orange; aperture rather small, slightly notched at the upper part, columella excavated, lip denticulated within.

Hab. Buffalo, Cape Colony.

A pretty brightly-painted shell, the pattern being developed in orange network. This and the remaining species of the Plate are enlarged, it may be observed, about a third of their natural dimensions.

Species 159. (Mus. Cuming.)

COLUMBELLA IMPOLITA. *Col. testā elongato-turrilā, spirā versus apicem plicato-costatā, anfractibus plano-convexis; fulvescente-castaneā, fasciā albā cingulatā; aperturā parvā, labro intus denticulato.*

THE UNPOLISHED COLUMBELLA. Shell elongately turreted, spire plicately ribbed towards the apex, whorls flatly convex; fulvous-chestnut, encircled with a white band; aperture small, lip denticulated within.

SOWERBY, Thesaurus Conch. vol. i. p. 132 pl. 39. f. 127.

Hab. — ?

Only a worn specimen of this is known, but it is sufficiently indicative of a distinct species.

Columbella Pl. LXVII.



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169



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171



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173



174



175

COLUMBELLA.

PLATE XXVI.

Species 160. (Mus. Cuming.)

COLUMBELLA FLAVOVISA. *Col. testā cylindraceo-ovata, inflata, subpellucida, aurantio reticulata, opaco-albo promiscue floccata, spirā subobtusā, anfractibus convexis laevibus; apertura parvisulcā, columellā crevratā, labro simplici.*

THE FLAKED COLUMBELLA. Shell cylindrically ovate-inflated, subtransparent, reticulated with orange, promiscuously flaked with opaque-white, spire rather obtuse, whorls convex, smooth; aperture rather small, columella excavated, lip simple.

Hab. Buffalo, Cape Colony.

An inflated, cylindrically ovate shell, of semitransparent substance, delicately reticulated with bright-orange, interspersed promiscuously with flakes of opaque-white.

Species 161. (Fig. a, b, Mus. Cuming.)

COLUMBELLA PERTUSA. *Col. testā subfusiformi-ovata, solidiusculā, aequique spirāliter lineari-sulcatā, sulcispertusa, lutescente-albā, castaneo peculiariter tessellatā, anfractibus superne obtusē tumidis; aperturā subangustā, labro intus denticulato.*

THE PRICKED COLUMBELLA. Shell somewhat fusiformly ovate, rather solid, spirally linearly grooved throughout, grooves pricked, yellowish-white, peculiarly tessellated with chestnut, whorls obtusely tumid round the upper part; aperture rather narrow, lip denticulated within.

Hab. Guatemala.

A rather solid shell, tessellately painted with chestnut in a manner quite characteristic.

Species 162. (Mus. Cuming.)

COLUMBELLA SAGENA. *Col. testā fusiformi-ovata, levigatā, ceræo basi sulcatā, albā, fuscato-nigro conspicue reticulatā, spirā subobtusā, anfractibus plano-convexis; aperturā subangustā, labro intus denticulato.*

THE FISHING-NET COLUMBELLA. Shell fusiformly ovate, smooth, grooved towards the base, white, conspicuously reticulated with brown-black, spire rather obtuse, whorls slightly convex; aperture rather narrow, lip denticulated within.

Hab. Japan.

Allied to *C. pardalina*, but of a different form, strongly grooved towards the base. From *C. Tyleri*, peculiar to Australia, it differs essentially in habitat.

Species 163. (Mus. Cuming.)

COLUMBELLA MULTIVOLUTA. *Col. testā acuminato-ovata, longitudinaliter obscure albicostatā, lineis nigris bifasciatis variegatā, spirā attenuatā, anfractibus numerosis; aperturā parvisulcā, columellā contractā, sulcatā, labro simplici.*

THE MANY-WHORLED COLUMBELLA. Shell acuminately ovate, longitudinally obscurely white-ribbed, variegated with two bands of black lines, spire attenuated, whorls numerous; aperture rather small, columella contracted, grooved, lip simple.

Hab. — ?

A sharply acuminated species, sculptured with opaque-white ribs, which are almost obsolete.

Species 164. (Mus. Cuming.)

COLUMBELLA COLLARIS. *Col. testā ovata, levigatā, livido-fuscā, anfractibus superne tumido-productis, ad basin sulcatis; aperturā quadrato-ovata, labro vix denticulato.*

THE COLLAR COLUMBELLA. Shell ovate, smooth, livid-brown, whorls tumidly produced round the upper part, grooved at the base; aperture squarely ovate, lip scarcely toothed.

Hab. — ?

Allied to *C. varians*, though characterized by a peculiarly produced swelling round the upper part of the whorls, whilst the shell is of a decided purple-livid colour throughout.

Species 165. (Mus. Cuming.)

COLUMBELLA CALIFORNICA. *Col. testā fusiformi-oblongā, longitudinaliter lirato-costatā, albā, lineis rufo-fuscis subtilissimè reticulatā, costis saturatioribus; aperturā subangustā, labro vix denticulato.*

THE CALIFORNIAN COLUMBELLA. Shell fusiformly oblong, longitudinally lirately ribbed, white, finely reticulated with red-brown lines, ribs dark; aperture rather narrow, lip scarcely denticulated.

Hab. California.

Somewhat allied to *C. Terpsichore*, but of a quite distinct style of painting

Species 166. (Fig. *a, b*, Mus. Taylor.)

COLUMBELLA NIVOSA. *Col. testā ovatā, medio tumidā, fulescente, punctis castaneis bifasciatā, interstitiis punctis apaco-albis lentiginosā, spirā breviusculā, anfractibus convexis, supernē obtusē tumidis; aperturā quadrato-oblongā, labro intus denticulato.*

THE SNOWY COLUMBELLA. Shell ovate, tumid in the

middle, yellowish, encircled with two bands of chestnut dots, the interstices freckled with opaque-white dots, spire rather short, whorls convex, obtusely swollen round the upper part; aperture squarely oblong, lip denticulated within.

Hab. Guatemala.

A beautifully painted species, allied to *C. carians*, freckled with chestnut network and snow-white dots.

Fig. 167. (Mus. Cuming.)

A very characteristic orange-red variety of *C. fabala* described at Plate XV. Sp. 77.



COLUMBELLA.

PLATE XXVII.

Species 168. (Mus. Cuming.)

COLUMBELLA MARGARITA. *Col. testâ ovatâ, crassiusculâ, levigatâ, nitente, sub lente punctis minutis aurantio-fuscis lentiginosâ, interdum fluctuatâ, maculis opacis albis juxta suturam cingulatâ, spirâ obtusâ; aperturâ angustâ, labro incrassato, varicoso.*

THE PEARL COLUMBELLA. Shell ovate, rather thick, smooth, shining, freckled beneath the lens with very minute red-brown dots, sometimes waved, encircled with opaque-white spots next the suture, spine obtuse; aperture narrow, lip thickened, varicose.

Hab. Sandwich Islands.

Extremely delicately painted, solid and obtuse in form, with a broad varicose lip.

Species 169. (Fig. a, b, Mus. Taylor.)

COLUMBELLA BROOKEI. *Col. testâ fusiformi, subarcuatâ, subangustâ, levigatâ, ad basin lineari-sulcatâ, tuberculata, strigis castaneis dense nudatis, ad basin nigricante; aperturâ angustâ, labro intus denticulato.*

BROOKE'S COLUMBELLA. Shell fusiform, narrow, somewhat curved, smooth, linearly grooved at the base, yellowish, densely waved with chestnut streaks, blackish at the base: aperture narrow, lip denticulated within.

Hab. Sarawak, Borneo.

An attenuately fusiform shell, somewhat curved or bent, of a very distinct typical character, which I have much pleasure in dedicating to the well-known English Rajah.

Fig. 170. (Mus. Cuming.)

This shell proves to be a variety of *C. suffusa*, described at Plate XVII. Sp. 89.

Species 171. (Mus. Cuming.)

COLUMBELLA DELICATA. *Col. testâ subcylindrico-oblongâ, levigatâ, nitente, anfractu ultimo angusto, albido, reticulâ aurantiâ delicatâ pictâ, ad suturam maculatâ; aperturâ parvâ, superne subinnatâ, labro intus denticulato.*

THE DELICATE COLUMBELLA. Shell somewhat cylin-

drically oblong, smooth, shining, last whorl narrow whitish, painted with a delicate orange network, spotted at the sutures; aperture small, slightly sinuated at the upper part, lip denticulated within.

Hab. Guatemala.

Painted throughout with a particularly delicate network somewhat after the manner of *C. cribraria*.

Species 172. (Mus. Cuming.)

COLUMBELLA BELLA. *Col. testâ fusiformi, pyramidalis, tuberculato-albâ, lineis aurantio-fuscis nudatis fusciatâ, spirâ longiusculâ, suturis impressis, anfractibus planis-convexis, ultimo ad basin contracto; aperturâ parvâ.*

THE PRETTY COLUMBELLA. Shell fusiformly pyramidal, yellowish-white, painted with bands of waved orange-brown lines, spine rather long, sutures impressed, whorls flatly convex, the last contracted at the base. Aperture small.

Hab. China.

This pyramidal species is distinguished by a very characteristic and uniform style of painting. Round the upper edge of the whorls, next the suture, are dark flames at rather distant intervals. The flames are then lighter and more numerous, and leave a conspicuous white zone.

Species 173. (Mus. Cuming.)

COLUMBELLA TUBERCULATA. *Col. testâ ovatâ, longitudinaliter obliquè costatâ, costis juxta suturam tuberculatis, albâ, superne rufo-fusciatâ, spirâ turratâ; aperturâ parvâ, superne sinuatâ, labro incrassato, intus denticulato.*

THE TUBERCLED COLUMBELLA. Shell ovate, longitudinally obliquely ribbed, ribs tubercled next the sutures, white, encircled round the upper part with a red band, spine turreted; aperture small, sinuated at the upper part, lip thickened, denticulated within.

Hab. — ?

Chiefly distinguished by its tubercularly ribbed sculpture, and very closely resembling in general aspect a well-known division of the Mitres.

Species 174. (Fig. a, b, Mus. Cuming.)

COLUMBELLA ESSINGTONENSIS. *Col. testā aciculari, clavata, lavi, politā, livido-purpurā vel albā, rufo-fasciatā, spirā acutā, anfractibus subangustis, ultimo subgibboso; aperturā parvā, superne sinuatā, labro incrassato, varicoso.*

THE ESSINGTON COLUMBELLA. Shell acicular, club-shaped, smooth, polished, livid-purple or white, banded with red, spire sharp, whorls rather narrow, the last somewhat gibbous; aperture small, sinuated at the upper part, lip thick, varicose.

Hab. Port Essington, Australia.

A rather solid, acicular, club-shaped shell, smooth and shining, with a thickened, varicose lip.

Species 175. (Mus. Cuming.)

COLUMBELLA FENESTRATA. *Col. testā ovate, subtransversis et longitudinalibus undique fenestratā, albā, pallidē rufo-fasciatā, spirā subturritā, anfractibus rotundatis, costis subtuberculatis; aperturā parviusculā, labro incrassato, intus denticulato.*

THE LATTICED COLUMBELLA. Shell ovate latticed throughout with longitudinal and transverse ribs, whitish, faintly red-banded, spire somewhat turrited, whorls rounded, with the ribs slightly tubercled, aperture rather small, lip thickened, denticulated within.

Hab. ———?

A faintly red-banded shell, roughly latticed throughout



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179



179 a



179 b



180



181



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183

COLUMBELLA.

PLATE XXVIII.

Species 176 (Mus. Cuming.)

COLUMBELLA RORIDA. *Col. testâ oblongo-ovata, pellucidâ-albâ, ritrosâ, punctis opaco-albis medio fasciatâ, anfractibus coarctis, superâe leviter concavo-impressis; aperturâ subangustâ, labro sinuipili, superâe sinuato.*

THE DEWY COLUMBELLA. Shell oblong, ovate, transparent-white, glassy, encircled round the middle with a band of opaque-white dots, whorls convex, slightly concavely impressed at the upper part; aperture rather narrow, lip simple, sinuated above.

Hab. Lord Hood's Island (found on *Arctonota margaritifera*, in coral sand, at a depth of six fathoms); Cuming.

A transparent, glassy shell, encircled round the middle with a necklace of opaque-white dots, like little pearls or dewdrops.

Species 177. (Fig. a, b, Mus. Taylor.)

COLUMBELLA CRASSILABRIS. *Col. testâ ovata, nudique leviter cancellatâ, infuscatâ, maculis rufo-fasciis sagittiformis bifasciatâ circumâ, ad basin purpureo-maculatâ, spirâ brevissimâ, ovata; aperturâ parvâ, labro crassilabro, curvato.*

THE THICK-LIP COLUMBELLA. Shell ovate, finely cancellated throughout, yellowish, encircled with two bands of red-brown arrow-headed marks, purple-spotted at the base, spire rather short, sharp; aperture small, lip very thick, varicose.

Hab. — ?

A small, stout shell, with an unusually thickened varicose lip, encircled with bands of brown arrowhead-shaped marks, with generally a conspicuous purple blotch about the base.

Species 178. (Mus. Cuming.)

COLUMBELLA FULGIDA. *Col. testâ sublongatâ, pellucidâ-albâ, fulgidâ, strigis undatis pallide aurantio-fuscis longitudinaliter pictâ, aperturâ subangustâ, labro intus denticulato.*

THE GLITTERING COLUMBELLA. Shell rather elongated, transparent-white, glittering, pointed longitudinally with faint, wavy, orange-brown streaks; aperture rather narrow, lip denticulated within.

Hab. Port Lincoln, Australia.

A narrow, glassy shell, very delicately waved with orange-brown longitudinal streaks.

Fig. 179. (Mus. Cuming.)

The shell here figured is a variety of *C. dimantina*, C. B. Adams, described at Pl. XX. Sp. 115.

Species 180 (Mus. Taylor.)

COLUMBELLA SAGITTA. *Col. testâ aciculari, pellucidâ-albâ, prope suturâs opacâ, maculis sagittiferis longitudinalibus, dentibus punctis opaco-albis cingulatâ, anfractibus planulatis, ultimo contracto; aperturâ parvâ, superâe sinuata, labro intus denticulato.*

THE ARROW COLUMBELLA. Shell acicular, transparent-white, opaque next the sutures, with longitudinal arrow-headed spots, then encircled with opaque-white dots, whorls rather flat, the last contracted; aperture small, sinuated at the upper part, lip denticulated within.

GASKOIN, Pro. Zool. Soc. 1851, p. 10.

Hab. Africa. West Indies.

It is impossible to represent the glassy texture, and partly, opaque-white dots of this beautiful species in a figure

Species 181. (Mus. Cuming.)

COLUMBELLA LUNATA. *Col. testâ ovata, medio subglobosâ, albidâ, lineis castaneis undatis subdistansibus longitudinaliter pictâ, ad basin purpureo-marginatâ; aperturâ parvâ, labro intus vix denticulato.*

THE LUNAR-MARKED COLUMBELLA. Shell ovate, somewhat globose in the middle, white, painted longitudinally with rather distant, wavy, chestnut lines, purple-edged at the base; aperture small, lip scarcely denticulated within.

Nassa lunata, Say, Journ. Acad. Nat. Sci. vol. v. p. 213. *Buccinum lunatum*, Adams.

Hab. Cape Cod, Bay of Massachusetts, United States (a few feet below low-water mark, clinging to stones, seaweed, and other shells); Gould.

The lunar spots on this shell are formed by a longitudinal striping of rather distant wavy chestnut lines upon a white ground.

Species 182. (Mus. Taylor.)

COLUMBELLA VELATA. *Col. testâ ovata, lævi, nitente, castaneo densissimè reticulatâ, anfractibus subplanulatis; aperturâ parvâ, labro intus denticulato, superâe subsinuato.*

THE VEILED COLUMBELLA. Shell ovate, smooth, shining, very densely reticulated with chestnut, whorls rather flattened; aperture small, lip denticulated within, slightly sinuated at the upper part.

Hab. — ?

A smooth shell, of simple growth, veiled, as it were, with a very close network painting of dark chestnut.



1861



1862a



1862b



1863



1864a



1864b



1865



1866a



1866b



1867

COLUMBELLA.

PLATE XXIX.

Species 183. (Mus. Cuming.)

COLUMBELLA ROSACEA. *Col. testâ ovata, crassâ, laevi, verrucis-roseis, anfractibus planulatis ultimo gibbosis, utriusq. ad basin contracto; apertura parâ, labro subvaricoso, intus denticulato, superne submarginato.*

THE PINK COLUMBELLA. Shell ovate, thick, smooth, flesh-pink, whorls flattened, the last rather gibbous, contracted at the base, aperture small, lip subvaricose, denticulated within, slightly notched at the upper part.

Hab. — ?

Of smooth solid growth, coloured throughout with flesh-rose, which is deeper towards the apex.

Species 184. (Fig. a, b, Mus. Taylor.)

COLUMBELLA LINCOLNENSIS. *Col. testâ acuminatâ, solidâ, laevi, livido-albâ, reticulâ castaneâ strigatâ, vel purpureâ obscure raris lineâ, anfractibus planulatis, ultimo ad basin contracto, labro tenui, superne emarginato, intus denticulato.*

THE LINCOLN COLUMBELLA. Shell acuminately solid, smooth, livid-white, streaked with chestnut network, or variously stained with purple-chestnut, whorls rather flattened, the last contracted at the base, lip thin, notched at the upper part, denticulated within.

Hab. Port Lincoln, Australia.

This Australian species is curiously analogous with the Mediterranean *C. caraculata*.

Species 185. (Mus. Cuming.)

COLUMBELLA ARATA. *Col. testâ fusiformi-acuminatâ, undique spirâlibus subtortâ, lutescente, maculis rufosis corrigatâ, anfractibus numerosis, convexis, ultimo ad basin contracto et recurvo; apertura parâ, columella recurvâ, labro simplici, subexpanso.*

THE PLOUGHED COLUMBELLA. Shell fusiformly acuminated, spirally grooved throughout, yellowish, variegated with red-brown spots, whorls numerous, convex, the last contracted and recurved at the base; aperture small, columella excavated, lip simple, slightly expanded.

Hab. — ?

This shell might very fairly be regarded as the type of a new genus. Its generic characters have little in common with those of *Columbella*.

Species 186. (Fig. a, b, Mus. Cuming.)

COLUMBELLA LUMBERCUS. *Col. testâ cylindraceo-aciculari, lævigatâ, nitente, roseo-fuscescente pallidâ reticulatâ, anfractibus planulatis, prope apicem longitudi-*

nally sulcatis; apertura sessilâ, columellâ excavatâ, labro simplici.

THE GRUB COLUMBELLA. Shell cylindrically acicular, smooth, shining, faintly reticulated with pink-brown, whorls rather flat, longitudinally grooved near the apex; aperture very small, columella excavated, lip simple.

Hab. Isle of Capul, Philippines; Cuming.

Of a narrow, *Terebra*-like form, marked with a faint network of pink-brown.

Species 187. (Mus. Cuming.)

COLUMBELLA SACHARATA. *Col. testâ acuminatâ, pelucido-roseâ, ad basin opaco-albâ, anfractibus convexis, lævibus, ultimo inferne contracto et sulcato; apertura ovatâ, columellâ labroque denticulatis.*

THE CANDIED COLUMBELLA. Shell acuminated, transparent-pink, opaque-white at the base, whorls convex, smooth, the last contracted at the lower part, and grooved; aperture ovate, lip and columella denticulated.

Hab. Van Diemen's Land.

Although a shell of comparatively stout growth, all the specimens I have seen are of the same uniform transparent-pink substance, white in the columella.

Fig. 188. (Mus. Taylor.)

Since describing at Plate XV. the *C. australis* of the late Mr. Gaskoin, I have had an opportunity of examining the original types of that species, now in the collection of Mr. Taylor. It will be seen, by comparing the accompanying figure with Fig. 78, that the species varies considerably.

Species 189. (Mus. Cuming.)

COLUMBELLA SUGILLATA. *Col. testâ ovatâ, livido-fuscâ vel purpurascente, spirâ turritâ, anfractibus superne tuberculato-costatis, tuberculis niveis; apertura subquadrato-ovatâ, labro subvaricoso, superne subangulato, intus denticulato.*

THE BRUISED COLUMBELLA. Shell, ovate, livid-brown or purple, spire turrited, whorls tubercularly ribbed round the upper part, tubercles white; aperture somewhat squarely ovate, lip slightly varicose, angled at the upper part, denticulated within.

Hab. China Seas.

Of a livid-brown or purplish hue, the tubercles with which it is strongly coronated throughout being tipped with white.



COLUMBELLA.

PLATE XXX.

Species 190. (Mus. Cuming.)

COLUMBELLA EMARGINATA. *Col. testâ ovatâ, subobesa, albâ, reticulâ rufi-fuscâ fasciatâ et uncinatâ, venaâ apicem spirâliter bilineatâ, spirâ breviusculâ, ovatâ, anfractibus prope apicem costellatis, dentalibus brevibus. Aperturâ parvâ, labro supero conspicuo emarginato, intus colâre denticulato.*

THE NOTCHED COLUMBELLA. Shell ovate, rather stout, shining, whitish, banded and blotched with red-brown network, spirally bilineated towards the apex, spire rather short, sharp, whorls ribbed near the apex, then smooth; aperture small, lip conspicuously notched at the upper part, strongly denticulated within.

Hab. — ?

This shell partakes very much of the characters of *C. poliochella*, but is of more solid character and more decided colouring, with a more than usual emargination of the lip.

Species 191. (Mus. Cuming.)

COLUMBELLA SCUTULATA. *Col. testâ ovatâ, fulco-castaneâ, albo prorsus tessellatâ, anfractibus longitudinaliter costatis, ultimo lævigato, ad basin sulcato; aperturâ parvâ, labro supero emarginato, intus denticulato.*

THE WROUGHT COLUMBELLA. Shell ovate, fulvous-chestnut, promiscuously tessellated with white, whorls longitudinally ribbed, the last smooth, grooved at the base: aperture small, lip notched at the upper part, denticulated within.

Hab. — ?

A very characteristic, prettily tessellated shell, allied to *C. catenata*.

Species 192. (Mus. Cuming.)

COLUMBELLA VITTATA. *Col. testâ aciculari, fulvescente, fasciâ nigricâ castaneâ cingulatâ, anfractibus plano-convexis, levibus; aperturâ parvâ, labro simplici.*

THE RIBBON-BOUND COLUMBELLA. Shell acicular, fulvous, encircled with a single broad chestnut band, whorls flatly convex, smooth; aperture small, lip simple.

Hab. Iba, Province of Zambales, Island of Luzon, Philippines; Cuming.

A very distinct species, of simple character, of which only a single specimen was collected by Mr. Cuming at the above locality.

Species 193. (Fig. a, b, Mus. Taylor.)

COLUMBELLA MINDORENSIS. *Col. testâ aciculari, ad basin vix contractâ, fulvescente, flammis castaneis longitudinalibus distantibus pictâ, anfractibus numerosis, planulatis, ultimo ad basin angulatâ et spirâliter sulcato, canali subrecurvo; aperturâ parvâ, labro carinoso.*

THE MINDORO COLUMBELLA. Shell acicular, much contracted at the base, yellowish, painted with distant longitudinal chestnut flames, whorls numerous, rather flat, the last angled and spirally grooved at the base, canal slightly recurved; aperture small, lip varicose.

GASKOIN, MS. in Mus. Taylor.

Hab. Puerto Galero, Island of Mindoro, Philippines (in coarse sand, at a depth of about twelve fathoms); Cuming.

An elegant and well-marked species, both as regards form and painting.

Species 194. (Mus. Cuming.)

COLUMBELLA SPECTRUM. *Col. testâ ovatâ, tenuiculâ, stramineâ, spirâ brevi, acutâ turrilatâ, anfractibus superne concavo-declivibus, ad angulum nodulatis, ultimo spirâliter sulcato, nodulis albidis; aperturâ ovatâ, labro simplici.*

THE GHOST COLUMBELLA. Shell ovate, rather thin, straw-coloured, spire short, sharply turreted, whorls concavely slanting round the upper part, noduled at the angle, the last spirally grooved, nodules whitish; aperture ovate, lip simple.

Hab. Island of Mindoro, Philippines; Cuming.

Chiefly distinguished by the white noduled slanting edge round the upper part of the whorls.

Species 195. (Fig. a, b, Mus. Cuming.)

COLUMBELLA PORCATA. *Col. testâ ovatâ, undique spirâliter porcatâ, intersitibus conspicuè excavatis, albâ, purpurco-rufa sulco lineatâ et uncinatâ, anfractibus con-*

April, 1859.

vezis, suturis excavatis: aperturá parvâ, intus denticulatâ.

THE RIDGED COLUMBELLA. Shell ovate, spirally ridged throughout, the interstices being conspicuously excavated, white, much stained and spotted with purple-red, whorls convex, sutures excavated; aperture small, denticulated within.

Hab. — ?

A well-defined species, strongly spirally excavately ridged throughout, and much stained with deep purple-red colouring.

Species 196. (Mus. Cuming.)

COLUMBELLA ANTILLARUM. *Col. testâ ovali, lutescente, castaneo-fusco subtilissimè reticulatâ, anfractibus sub-ventricosâ, supernè longitudinalitèr costellatâ; aperturâ parvâ, labro simplici.*

THE WEST INDIAN COLUMBELLA. Shell ovate, yellowish, finely reticulated with chestnut-brown, whorls slightly ventricose, longitudinally ribbed at the upper part; aperture small, lip simple.

Hab. Island of St. Thomas, West Indies.

The network of this species is very delicate, stretched, as it were, more transversely than usual.



197



198 a



198 b



199



200 a



200 b



201



202



203



204

COLUMBELLA.

PLATE XXXI.

Species 197. (Mus. Cuming.)

COLUMBELLA MANGELIODES. *Col. testâ fusiformi, subincurvâ, longitudinaliter rimbâ costatâ, intescente, sulcis aurantio-fuscis aspersâ, anfractibus numerosis, subconcoezis, suturis impressis, anfractu ultimo in oesthetâ productâ; aperturâ parvâ, labro varicoso, intus denticulato.*

THE MANGELIA-LIKE COLUMBELLA. Shell fusiform, rather solid, longitudinally strongly ribbed, yellowish, sprinkled with orange-brown spots, whorls numerous, flatly convex, sutures impressed, the last whorl produced into a canal; aperture small, lip varicose, denticulated within.

Hab. West Indies.

A solid shining shell, very conspicuously ribbed throughout, with a strongly varicose lip.

Species 198. (Fig. a, b. Mus. Cuming.)

COLUMBELLA GUATEMALENSIS. *Col. testâ ovatâ, subobesâ, longitudinaliter tenuicostatâ; sulcis linearibus transversis decussatâ, purpurâ et rufâ, maculis opacioribus quadratis medio cingulatâ, anfractibus convexis, superne albis; aperturâ oblongâ, labro intus denticulato.*

THE GUATEMALA COLUMBELLA. Shell ovate, rather stout, longitudinally finely ribbed, decussated with transverse linear grooves, purple and red, encircled round the middle with square opaque-white spots, whorls convex, white round the upper part; aperture oblong, lip denticulated within.

Hab. Guatemala.

Necklaced round the body-whorl with square, opaque-white spots upon a rich purple-red ground, while the upper edges of the whorls remain white.

Species 199. (Mus. Cuming.)

COLUMBELLA PELLUCIDA. *Col. testâ ovatâ, versus basin obliquè expansâ, pellucidâ, levi, aurantio-castaneo maculatâ et flammatâ, spirâ brevissimâ, acuminatâ; aperturâ ovatâ, columellâ excavatâ, labro varicoso, intus purpureo-lincto, superne unidentatâ.*

THE PELLUCID COLUMBELLA. Shell ovate, obliquely expanded towards the base, transparent, smooth, spotted and flamed with orange-chestnut, spine

rather short, acuminated; aperture ovate, columella excavated, lip varicose, purple-stained within, one-toothed at the upper part.

Hab. — ?

Rather inclined to the typical form of *Nassa*, of solid texture, yet so transparent as to allow the columella being seen throughout the shell.

Species 200. (Mus. Cuming.)

COLUMBELLA SPARSA. *Col. testâ fusiformi-ovatâ, longitudinaliter costellatâ, interstitiis cancellatis, intescente, punctis et reticulâ castaneis sparâ; aperturâ parvâ, labro varicoso, superne emarginato, intus denticulato.*

THE SPINKLED COLUMBELLA. Shell fusiformly ovate, longitudinally finely ribbed, interstices cancellated, yellowish, sprinkled with chestnut dots and network, aperture small, lip varicose, notched at the upper part, denticulated within.

Hab. — ?

Similarly sculptured and painted to *C. suffusa*, but of a shorter form.

Species 201. (Mus. Cuming.)

COLUMBELLA AGUS. *Col. testâ angustè elongatâ, versus apicem longitudinaliter minutè costellatâ, intescente, aurantio-fusco irregulariter strigatâ, anfractibus planulatis; aperturâ minutâ, columellâ subretractâ, truncatâ, labro simplicî, intus vix denticulato.*

THE NEEDLE COLUMBELLA. Shell narrowly elongated, longitudinally minutely ribbed towards the apex, yellowish, irregularly streaked with orange-brown, whorls rather flattened; aperture very small, columella slightly excavated, truncated, lip simple, scarcely denticulated within.

Hab. Isle of Capul, Philippines; Cuming.

This species, together with the *C. imbricatus* and *Cumingii*, all from the Isle of Capul, present a local type of great interest, and a good basis for a distinct subgenus.

Species 202. (Mus. Cuming.)

COLUMBELLA OBLITA. *Col. testâ acuminato-oblongâ, audyne minutè spiratiler elevato-striatâ, pellucido-*

colle strigis longitudinalibus aurantio-fuscis oblita, anfractibus superne concavo-impressis; aperturâ parvâ, columellâ excavatâ, labro simplici.

THE SMEARED COLUMBELLA. Shell acuminately oblong, minutely spirally elevately striated throughout, transparent-white, smeared with longitudinal orange-brown streaks, whorls conceavely impressed round the upper part; aperture small, columella excavated, lip simple.

Hab. Peru.

Spirally sculptured throughout with close-set raised striae, and coloured promiscuously with longitudinal smears of orange-brown.

Species 203. (Mus. Cuming.)

COLUMBELLA CAVEA. *Col. testâ ovatâ, medio obesâ, vâlidè obliquè tuberculato-castatâ, castaneâ, costis purpureis; aperturâ oblongâ, labro superne emarginato, intus denticulato.*

THE BIRD-CAVE COLUMBELLA. Shell ovate, stout in the middle, strongly obliquely tubercularly ribbed,

chestnut ribs purple; aperture oblong, lip notched at the upper part, denticulated within.

Hab. ———?

The longitudinal ribs of this species are unusually prominent and dark-coloured, giving the shell a somewhat cage-like appearance.

Species 204. (Mus. Cuming.)

COLUMBELLA TENEBRICA. *Col. testâ acuminato-ovatâ, laxi, intensè fulco-castaneâ, obscurè longitudinaliter striatâ, anfractibus subplanulatis; aperturâ parvâ, fovea nigricante-castaneâ, labro simplici.*

THE DARK COLUMBELLA. Shell acuminately ovate, smooth, dark fulvous-chestnut, obscurely longitudinally streaked, whorls rather flattened; aperture small interior blackish-chestnut, lip simple.

Hab. ———?

Allied to *C. pulla* in form and general appearance, but it will be found on examination to be obscurely striped, while it has not the white columella distinctive of that species.



266 a



265



266 b



267 a



268 a



268 b



267 b



269 a



269 b



267 c

COLUMBELLA.

PLATE XXXII.

Species 205. (Mus. Taylor.)

COLUMBELLA BIDENTATA Col. testâ oratâ, subinflatâ, pellucidâ-flavicante, punctis rufis et opaco-albis anguliculis apicatis, levigatâ, vixente, spirâ brevi, anfractibus superâ subdenticatis, deinde rotundatis, apice nigrescente: aperturâ oblongâ, utrinque denticulatâ, rotundellâ intus bidentatâ, labro superâ submarginatâ.

THE DOUBLE-TOOTHED COLUMBELLA. Shell ovate, somewhat inflated, transparent-yellow, sprinkled with angular red and opaque-white dots, smooth, shining, spire short, whorls a little slanting round the upper part, then rounded, apex blackish: aperture oblong, denticulated on both sides, columella double-toothed within, lip slightly notched at the upper part.

MENKLE, Sowerby, *Thes. Conch.* vol. i. p. 118. pl. 37. f. 53, 54.

Hab. Swan River.

This elegant species is curiously distinguished by the presence of two small teeth on the inner surface of the columella.

Species 206. (Fig. 206 and 207, Mus. Cuming.)

COLUMBELLA PICATA Col. testâ conoides, multique spiritaliter tenuispiratâ, purpureo-nigrâ vel castaneâ, punctis opaco-albis in maculis trianguliculis et in atrigis promissivis notatâ, spirâ parvâ, mucronatâ, anfractibus superâ obesè rotundatis, versus basim attenuatis: aperturâ elongatâ, angustâ, fauce carulescente, labro intus superâ subascendente, obsolete denticulatâ.

THE PIED COLUMBELLA. Shell conoid, spirally finely ridged throughout, purple-black or chestnut, marked with triangular blotches of opaque-white dots and promiscuous streaks, spire small, pointed, whorls obesely rounded at the upper part, attenuated towards the base: aperture elongated, narrow, interior bluish, lip slightly ascending at the upper part, obsolete denticulated within.

Conella picata, Swainson, *Treatise on Malacology*, p. 151. f. 17 a.

Columbella ornatata, Sowerby.

Columbella varia, Sowerby.

Hab. Australia.

The two shells represented at Fig. 206 and 209, intended to illustrate Mr. Sowerby's *C. ornatata* and *varia*, prove to be one and the same species, and the type of Mr. Swainson's genus *Conella*. The conical *Strombus*-like species, which have been confounded by some writers with

this subgeneric division of the *Columbella*, I propose to arrange under a new genus, with the name of *Meta*.

Species 207. (Fig. a, b, c, Mus. Cuming.)

COLUMBELLA PHILIPPINARUM Col. testâ conoides, crassâ, albâ, purpureo-fusca strigatâ et fuscicatâ, spirâ brevi, acutâ, anfractibus superâ gibbosè angulatis, deinde subconcavis, anfractu ultimo ad basin recurro et spiritaliter sulcato; aperturâ elongatâ, angustâ, labro subincrassato, superâ subascendente, intus obsolete denticulatâ.

THE PHILIPPINE COLUMBELLA. Shell conoid, thick, white, streaked and banded with purple-brown, spire short, sharp, whorls gibbously angled round the upper part, then slightly concave, last whorl recurved and spirally grooved at the base; aperture elongated, narrow, lip rather thickened, slightly ascending at the upper part, obsolete denticulated within.

RECLUZ, *Pro. Zool.* Soc. 1842, p. 199.

Conella Philippinarum, Adams.

Hab. Philippine Islands; Cuming.

This species would also belong to Mr. Swainson's genus *Conella*, by reason of the ascending tendency of the outer lip, as distinguished from the decided conical species which constitute *in* genus *Meta*.

Species 208. (Fig. c, d, Mus. Cuming.)

COLUMBELLA DISCOIRS Col. testâ cylindrico-conoides, levigatâ, vixente castaneâ, infernè albo-punctatâ, superâ albimaculatâ, maculis grandibus, distantibus, spirâ obtusè globosâ, apice elevato, mucronato; aperturâ elongatâ, fauce violaceâ, labro subincrassato, superâ ascendente, intus obsolete denticulatâ.

THE DIFFERING COLUMBELLA. Shell cylindrically conoid, smooth, bright-chestnut, white-dotted below, white-blotched above, blotches large and distant, spire obtusely globose, apex raised, pointed; aperture elongated, violet in the interior, lip somewhat thickened, ascending at the upper part, obsolete denticulated within.

Falata discors, Gmelin (fide Deshayes), *Syst. Nat.* p. 3455.

Buccinum punctatum, Brugnière.

Columbella semipunctata, Lamarck.

Hab. Philippine Islands; Cuming.

This fine and long-known species belongs also to the *Conella* division of *Columbella*, as well as its very near ally *C. splendidula*, and a few other species.



COLUMBELLA.

PLATE XXXIII.

Species 210. (Mus. Petit.)

COLUMBELLA VILLOSOVITRELLA. Col. testa ovata, longitudinaliter costata, luteo, albo, nigro-maculata; spiræ medio-ventraliter cylindricæ subventricosæ, utrimque triangulæ ad partem dorsalem antica costis laevibus; apertura oblonga, labio interno posticeonato subrotundo, labio externo posticeonato angulato.

THE VILLOSO-VITRELLA COLUMBELLA. Shell ovate, longitudinally ribbed, smooth, white, spotted with black, spire moderate, whorls four slightly ventricose, last whorl transversely striated in front, anterior dorsal part with ribs obsolete; aperture oblong, rather broad, peritreme yellow, outer lip posteriorly angled.

PETIT, Sowerby, Thes. Conch. vol. i. p. 113. pl. 36. f. 17, 18.

Hab. — ?

Of this species, which is unknown to me, I copy the description and figure from Mr. Sowerby's 'Thesaurus Conchyliorum,' as communicated to him by M. Petit de La Saussaye, of Paris.

Species 211. (Fig. a to d, Mus. Taylor.)

COLUMBELLA RUSTICA. Col. testâ ovata, nunc lævigatâ, nunc spiraliter striatâ, albida, rufo-fusca vel purpureo plus minus dense lineatâ vel punctulatâ, spirâ breviusculâ, conicâ, anfractibus superioribus rotundatis; apertura oblongâ, labio intus medio incrassato, denticulato, interstitialibus purpureis.

THE RUSTY COLUMBELLA. Shell ovate, sometimes smooth, sometimes spirally striated, whitish, more or less densely stained or spotted with reddish-brown or purple, spire rather short, conical, whorls stoutly rounded at the upper part; aperture oblong, lip thickened in the middle within, denticulated, interstices purple.

Folata rustica. Linnæus, Syst. Nat. p. 1190.

Hab. — ?

A very good distinguishing character of this ancient species is presented in the purple colouring in the interstices between the denticulations within the lip.

Species 212. (Mus. Norris.)

COLUMBELLA SUBULATA. Col. testâ pyramidaliter-turritâ,

lævigatâ, albida, spiræconicâ tenui versus posticam indatâ, spirâ subulata, anfractibus decem, convexiusculis, primis septem brevibus, tertio ultimoque postice transversim alatis, ultimo postice truncato, apertura sinuosa, alba, labio interno medio-incrassato, indatâ mediane incrassato. Anterioribus labio interno incrassato, elevato, canali laterali reflexo.

THE SUBULATE COLUMBELLA. Shell pyramidally turrit, smooth, whitish, covered with a thin posteriorly epidermis, spire subulate, whorls ten, rather convex, the first seven smooth, the last three posteriorly transversely striated, the last swollen posteriorly; aperture sinuous, white, outer lip thickened outwardly, thickened and denticulated within in the middle, inner lip thickened and elevated, canal short, reflected.

SOVERBY, Thesaurus Conch. vol. i. p. 140. pl. 40. f. 158, 159.

Hab. — ?

Unknown to me. Description and figure copied from 'Thesaurus Conchyliorum.'

Species 213. (Mus. Brit.)

COLUMBELLA KRAUSSII. Col. testâ ovato-oblongâ, lavi, albicante, lineis castaneis undatis longitudinaliter pictâ, anfractibus subventricosis, obsolete longitudinaliter costellatis, costellis distantibus; apertura latâ, labio simplici.

KRAUSS' COLUMBELLA. Shell ovately oblong, smooth, whitish, longitudinally painted with wavy chestnut lines, whorls slightly ventricose, obsolete longitudinally ribbed, ribs distant; aperture broad, lip simple.

SOVERBY, Thesaurus Conch. vol. i. p. 144. pl. 40. f. 180, 181.

Hab. Natal, South Africa; Dr. Krauss.

The wavy linear painting is common to several species, but this is the only one of that type known to me that is at all ribbed.

Species 214. (Mus. Brit.)

COLUMBELLA GUILDINGII. Col. testâ pyramidaliter-oblongâ, palléscente, brunneo variegatâ, spirâ emarginatâ, sub-

territâ, anfractibus longitudinaliter costatis, striis transversis decussatis; aperturâ ovali, sinuosa, labro intus tenuè denticulato.

GUILDING'S COLUMBELLA. Shell pyramidally oblong, pale, variegated with brown, spire acuminate, slightly turreted, whorls longitudinally ribbed, decussated with transverse striae, aperture ovate, sinuous, lip finely denticulated within.

SOWERBY, Thesaurus Conch. vol. i. p. 143. pl. 40. f. 175. 176.

Hab. Island of St. Vincent, West Indies; Guilding.

Of a somewhat sinuous form of convolution, closely decussated throughout.

Species 215. (Mus. Taylor.)

COLUMBELLA NUCLEUS. *Col. testâ subtrigono-ovata, spirallyter tenuisulcata, lævigatâ, fulvo-castaneâ vel roseâ, spirâ brevi, anfractibus superne obesis; aperturâ angustâ, labro intus denticulato, interstitiis purpureis.*

THE KERNEL COLUMBELLA. Shell somewhat triangularly ovate, spirally finely grooved, smooth, fulvous-brown or pinkish, spire short, whorls stout round the upper part; aperture narrow, lip denticulated within, interstices purple.

KIENER, Icon. coquilles vivantes, p. 14. pl. 3. f. 4.

Hab. —?

This is a species of somewhat doubtful character, and may prove to be a variety of *C. rustica*.



217 a



216



217 b



218 a



219 a



219 b



218 b



220 a



220 b



221

COLUMBELLA.

PLATE XXXIV.

Species 216. (Mus. Taylor.)

COLUMBELLA FORMOSA. *Col. testâ ovatâ, laevi, nitente, pallidâ concolorâ, fasciâ reticulatâ pallidâ aurantiâ medio circumdatâ, anfractibus plano-convexis; aperturâ parviscissâ, columellâ excavatâ; labro simplici.*

THE BEAUTIFUL COLUMBELLA. Shell ovate, smooth, shining, pale pink, encircled round the middle with a faint band of orange network, whorls flatly convex; aperture rather small, columella excavated, lip simple.

GASKOIN, *Pro. Zool. Soc.* 1851.

Hab. ———?

Of a beautiful transparent flesh-pink colour, extremely delicately reticulated round the middle, and at the base and sutural edges.

Species 217. (Fig. a, b, Mus. Taylor.)

COLUMBELLA MARQUESA. *Col. testâ ovatâ, laevi, tenuiculâ, pellucidâ-albâ, medio aurantio reticulato-flammâta vel lineatâ, apice rosâ, anfractibus convexis, primis paucis longitudinaliter costatis; aperturâ parvâ, labro supernè conspicuè emarginatâ.*

THE MARQUESAS COLUMBELLA. Shell ovate, smooth, rather thin, transparent-white, reticulately flamed or lined round the middle with orange, pink at the apex, whorls convex, the first few longitudinally ribbed; aperture small, lip conspicuously notched at the upper part.

GASKOIN, *Pro. Zool. Soc.* 1851. p. 11.

Hab. Marquesas Islands.

This species comes very near to *C. pulchella*, and presents the same variety of painting. Sometimes the orange-brown is disposed in reticulated bands, sometimes in lines.

Species 218. (Fig. a, b, Mus. Taylor.)

COLUMBELLA IODOSTOMA. *Col. testâ fusiformi, crassâ, medio obsâ, longitudinaliter plicato-costatâ, albâ, utriusque violacâ, aurantio-fusco variè fasciatâ, anfractibus convexis, suturis impressis, ultimo basi in canalem brevem recurvo; aperturâ brevi, utriusque denticulatâ, labro varicoso.*

THE VIOLET-MOUTH COLUMBELLA. Shell fusiform, thick, stout in the middle, longitudinally plaited or ribbed, whitish, violet at each end, variously banded with orange-brown, whorls convex, with the sutures impressed, last whorl recurved at the base into a short canal; aperture small, denticulated on each side, lip varicose.

GASKOIN, *Pro. Zool. Soc.* 1851. p. 13.

Hab. Port Essington.

Closely allied to *C. puella*, which is smoother and more variably marked.

Species 219. (Fig. a, b, Mus. Taylor.)

COLUMBELLA HIRUNDO. *Col. testâ fusiformi-clavata, solidâ, laevi, nitente, albâ, lineis aurantio-fuscis undulatis lentiginosâ, spirâ attenuato-acuminatâ, anfractibus subplanulatis, ultimo gibboso, ad basin canaliculatâ et rostratâ; aperturâ angustâ, supernè emarginatâ et utriusque unidentatâ, columellâ excavatâ, labro sub-varicoso.*

THE SWALLOW COLUMBELLA. Shell fusiformly club-shaped, solid, smooth, shining, whitish, freckled with waved orange-brown lines, spire attenuately acuminate, whorls rather flattened, the last gibbous, channeled and beaked at the base; aperture narrow, notched and one-toothed on each side at the upper part, columella excavated, lip slightly varicose.

GASKOIN, *Pro. Zool. Soc.* 1851. p. 12.

Hab. ———?

A remarkably characteristic clavate species, curiously beaked at the extremity.

Species 220. (Mus. Taylor.)

COLUMBELLA LEUCOSTOMA. *Col. testâ acuminato-ovatâ, laevi, supernè densè aurantio-reticulatâ, infernè albâ, apice pellucidâ-albâ, anfractibus convexis, ultimo ad basin coarctato et sulcato; aperturâ porrâ, columellâ excavatâ, labro vix incrassato, intus denticulatâ.*

THE WHITE-MOUTH COLUMBELLA. Shell acuminately ovate, smooth, densely orange-reticulated above, white below, transparent white at the apex, whorls convex, the last contracted and grooved at the base;

April, 1859.

Aperture small, columella excavated, lip scarcely thickened, denticulated within.

GASKOIN, *Proc. Zool. Soc.* 1851. p. 41.

Hab. ———?

In this species the upper half of the whorls is darkly stained with close orange-brown network, whilst the lower half is almost pure white, but it is only of the last whorl that the lower half is seen.

Species 221. (Mus. Taylor.)

COLUMBELLA POLITA. *Col. testâ ovatâ, solidiusculâ, leve, nitente, aurantio-castaneâ, albo hic illic sparsim ma-*

culatâ et relicto-intâ, anfractibus subobtusâ convexis. aperturâ parvâ, columellâ excavatâ, labro intus denticulato.

THE POLISHED COLUMBELLA. Shell ovate, rather solid, smooth, shining, orange-chestnut, here and there sparingly blotched and reticulated with white, whorls rather obtusely convex; aperture small, columella excavated, lip denticulated within.

Hab. ———?

This species, found in the collection of the late Mr. Gaskoin without name or particulars of habitat, is mottled in a peculiar manner with promiscuous white blotches and little patches of network.



222.



223 a



223 b



224 a



225 a



225 b



226 b



226 a



226 b



227

COLUMBELLA.

PLATE XXXV.

Species 222. (Mus. Taylor.)

COLUMBELLA EXIMIA. *Col. testâ acuminatâ, subclavatâ, lœvi, nitente, pr. lœvâ-aurantiâ, fusco tenuè reticulatâ, maculis opaco-nivæis bifasciatim cingulatâ, anfractibus planulatis, ultimo ad basin concavato et sulcato, subcarato; aperturâ lœvi, labro varicoso, superne sub-emarginato.*

THE CHOICE COLUMBELLA. Shell acuminate, somewhat club-shaped, smooth, shining, transparent-orange, finely reticulated with brown, encircled with two bands of opaque snow-white flakes, whorls rather flat, the last contracted and grooved at the base, slightly recurved; aperture small, lip varicose, faintly notched at the upper part.

Hab. — ?

Of a particularly rich golden transparent colour, encircled with two characteristic necklaces of opaque-white spots

Species 223. (Fig. a, b, Mus. Taylor.)

COLUMBELLA ALBUGINOSA. *Col. testâ ovatâ, lœvi, nitente, pelliculo-albâ, aurantio-fusca nudiq. nitidè reticulatâ, reticulâ bifasciatim saturatiore, anfractibus plano-concavis, ultimo subconorto et sulcato; aperturâ parvâ, labro simplici, superne subemarginato.*

THE WHITE-EYED COLUMBELLA. Shell ovate, smooth, shining, transparent-white, neatly reticulated throughout with orange-brown, the network darker, in two bands, whorls flatly convex, the last somewhat twisted and grooved; aperture small, lip simple, slightly notched at the upper part.

Hab. — ?

Painted throughout with a particularly neat network of orange-brown, which in the last whorl is darker above and below.

Species 224. (Mus. Taylor.)

COLUMBELLA TENXIS. *Col. testâ acuminato-ovatâ, lœvi, albâ, aurantio-fusca irregulariter flammulatâ, anfractibus concavis, ultimo ventricoso, tenuè inflato, obsolete angulato, ad basin sulcato; aperturâ subexpansâ, labro simplici, superne sinuato.*

THE THIN COLUMBELLA. Shell acuminately ovate, smooth,

whitish, irregularly flamed with orange-brown, whorls convex, the last whorl ventricose and thinly inflated, obsoletely angled, grooved at the base; aperture a little expanded, lip simple, sinuated at the upper part.

GASKOIN, *Pro. Zool. Soc.* 1851, p. 2.

Hab. — ?

Of a more inflated growth than usual, boldly striped with longitudinal orange-brown flames.

Species 225. (Fig. a, b, Mus. Taylor.)

COLUMBELLA TAYLORIANA. *Col. testâ ovatâ, dorso subgibbosâ, solidâ, lœvigatâ, nitente, pelliculo-albâ, aurantio-rufescente maculatâ et tenuè reticulatâ, spirâ subobtusâ, anfractibus plano-concavis, ultimo ad basin sulcato; aperturâ quadrato-ovatâ, columellâ subexcavatâ, labro parâ incrassato, superne emarginato, intus denticulato.*

TAYLOR'S COLUMBELLA. Shell ovate, rather gibbous at the back, solid, smooth, shining, transparent-white, finely reticulated and blotched with orange-chestnut, spire rather obtuse, whorls flatly convex, the last grooved at the base; aperture squarely ovate, columella slightly excavated, lip but little thickened, notched at the upper part, denticulated within.

Hab. North-west Australia.

An interesting species, of which the late Mr. Gaskoin had received several specimens from North-west Australia. I have much pleasure in naming it after Thomas Lombe Taylor, Esq., of Starston, to whom we are indebted for the preservation intact of several of the genera of shells which Mr. Gaskoin had collected with so much intelligent research, and which in Mr. Taylor's cabinet are now still more materially enriched.

Species 226. (Fig. a, b, Mus. Taylor.)

COLUMBELLA BIFLAMMATA. *Col. testâ cylindraceo-ovatâ, lœvigatâ, nitente, albâ, aurantio-fusco nudiq. densè flammulatâ, spirâ subobtusâ, anfractibus concavis; aperturâ parvâ, columellâ subexcavatâ, labro varicoso, superne subemarginato, intus denticulato.*

THE DOUBLE-FLAMED COLUMBELLA. Shell cylindrically ovate, smooth, shining, whitish, densely flamed

throughout with orange-brown, spire rather obtuse, whorls convex; aperture small, columella slightly excavated, lip varicose, faintly notched at the upper part, denticulated within.

Hab. ———?

Encircled with two bands of longitudinal orange-brown flames, quite peculiar and uniform in character.

Species 227. (Mus. Cuming.)

COLUMBELLA NUX. *Col. testā cylindraceo-ovatā, levigatā, nitente, pellucido-olivaceā, luteo tinctā, maculis parvis albidis fasciatim cingulatā, spirā breviusculā, apice*

acuminatā, anfractibus convexis, ultimo obliquè expanso; aperturā ovatā, labro simplici superiù subemarginato.

THE NUT COLUMBELLA. Shell cylindrically ovate, smooth, shining, transparent-olive, yellow-stained, encircled with two rows of small whitish spots, spire rather short, acuminate at the apex, whorls convex, the last obliquely expanded; aperture ovate, lip simple, faintly notched at the upper part.

Hab. Port Adelaide, New Holland.

Of a semitransparent, livid, yellowish-olive colour, showing a faint band of interrupted spots next the suture and round the middle of the last whorl.



COLUMBELLA.

PLATE XXXVI.

Species 228. (Mus. Taylor.)

COLUMBELLA INTERRUPTA. *Col. testā ovatā, utriusque attenuatā, subfusculā, albā, maculis castaneo-fuscis crescentiforibus confusis, spirā subterrito, anfractibus solo superne cingulatis, ultimo versus basin profunde fissis, sulcatis. apertura subangustā, labro supero subconspicuo, intus denticulato.*

THE INTERRUPTED COLUMBELLA. Shell ovate, attenuated at both ends, rather solid, white, encircled with a band of crescent-shaped chestnut-brown spots, spire somewhat turreted, whorls encircled with a groove round the upper part, the last deeply linearly grooved towards the base; aperture rather narrow, lip slightly notched at the upper part, denticulated within.

GASKOIN, *Proc. Zool. Soc.* 1851, p. 3.

Hab. —?

Conspicuously encircled round the upper portion of each whorl with a band of crescent-shaped brown spots, while the shell is more than usually linearly grooved.

Species 229. (Fig. *a, b*, Mus. Taylor.)

COLUMBELLA GALAXIAS. *Col. testā fusiformi-ovatā, solidiusculā, laevigatā, nitentē, spirā subobtusā, anfractibus plano-convexis, albā, fuscā castaneo-fuscā interruptā superne cingulatā, deinde reticulatā; apertura parvā, utriusque denticulatā, labro subvaricoso.*

THE MILKY-WAY COLUMBELLA. Shell fusiformly ovate, rather solid, smooth, shining, spire rather obtuse, whorls flatly convex, whitish, encircled round the upper part with an interrupted band of chestnut-brown, and then reticulated; aperture small, denticulated on each side, lip somewhat varicose.

Hab. —?

A subtransparent shell, filleted with a broken, linear, red band, and sprinkled with opaque-white pearly spots.

Species 230. (Mus. Taylor.)

COLUMBELLA CITHARA. *Col. testā subquadrato-ovatā, solidulā, albā, castaneo-reticulatā, prope suturas nigricante et albimaculatā, spirā brevisculā, anfractibus superne plicato-liratis, infra spiritaliter sulcatā; apertura angustā, labro supero angulato-producto et emarginato, intus tenuē denticulato.*

THE HARP COLUMBELLA. Shell somewhat squarely ovate, rather solid, whitish, reticulated with chestnut, blackish, and white-blotched next the sutures, spire rather short, whorls plicately ridged round the upper part, spirally grooved below; aperture narrow, lip angularly produced and notched at the upper part, finely denticulated within.

Hab. —?

An elegantly-formed harp-shaped shell, approaching to *C. fluctuata*, but differing obviously enough in all particulars.

Species 231. (Fig. 231 *a*, Mus. Taylor.)

COLUMBELLA CREPUSCULUM. *Col. testā subulatā, solidiusculā, laevigatā, albā, castaneo subtiliter reticulatā, prope suturas nigricante et albimaculatā, spirā obovata, anfractibus plano-convexis, nitentibus, ultimo parvo, ad basin sulcato et recurvo; apertura parvā, labro varicoso, intus subtiliter denticulato.*

THE TWILIGHT COLUMBELLA. Shell subulate, rather solid, smooth, whitish, finely reticulated with chestnut, blackish, and white-spotted next the sutures, spire acuminate, whorls flatly convex, shining, the last small, grooved and recurved at the base; aperture small, lip varicose, finely denticulated within.

Hab. —?

The pattern of this species is a delicate white-punctured network upon a dull orange-brown ground.

Species 16. (Fig. 231 *b*, Mus. Taylor.)

COLUMBELLA FUSILLUS. *Col. testā subulatā, solidiusculā, lutescente-albā, varicillo-fusco tenuē sulcatā, prope suturas maculatā; apertura parvā, labro varicoso, inferne fissis marginali.*

THE LITTLE SPINDLE COLUMBELLA. Shell subulate, rather solid, yellowish-white, faintly waved with orange-brown, spotted next the sutures; aperture small, lip varicose, brown-spotted at the lower part.

Hab. —?

The last whorl of this species is unusually small and contracted, and the lip is marked with a characteristic blotch of colour at the base.

Species 232. (Fig. a, b, Mus. Taylor.)

COLUMBELLA ALABASTRUM. *Col. testā fusiformi, subpyramidalī, marmoreo-albā, prope suturas opacā, maculis castaneis distantibus sparsim notatā, anfractibus plurimis, ultimo ad basin contracto, contorto et sulcato; aperturā parvā, labro carinoso.*

THE ALABASTER COLUMBELLA. Shell fusiform, somewhat pyramidal, marble-white, opaque next the sutures, sparingly marked with distant chestnut blotches, whorls flattened, last whorl contracted at the base, twisted and grooved; aperture small, lip varicose.

Hab. — ?

The substance of this very interesting species has the

appearance of alabaster or white marble, a portion of which is polished, while the rest is rough and opaque.

Species 233. (Mus. Taylor.)

COLUMBELLA PLURISULCATA. *Col. testā subulatā, undique spiritaliter sulcatā, anfractibus convexis; aperturā parvā, labro superne subaequalisato.*

THE MANY-GROOVED COLUMBELLA. Shell subulate, spirally grooved throughout, whorls convex; aperture small, lip faintly notched at the upper part.

Hab. — ?

Characteristically grooved throughout, but not included in this genus without considerable doubt as to the correctness of assigning it a place amongst the *Columbelle*.



233a



234



235b



236a



237



238



239b



239a



239c



240

COLUMBELLA.

PLATE XXXVII.

Species 234. (Mus. Taylor.)

COLUMBELLA NUBIFLATA. *Col. testâ oblongo-ovata, laevigatâ, lateribus-âlbâ, aurantio-fusco variè marmoratâ, apice rosâo, anfractibus convexis, apertura parâ, labro superne emarginato, intus prominente dentato.*

THE CLOUDED COLUMBELLA. Shell oblong-ovate, smooth, yellowish-white, variously mottled with orange-brown, apex violet-tinged, whorls convex; aperture small, lip notched at the upper part, prominently toothed within.

Hab. — ?

Rather obscurely clouded in respect of colouring, which inclines towards the base to form a fine network.

Species 235. (Fig. a, b, Mus. Taylor.)

COLUMBELLA SCALPTA. *Col. testâ ovata, pellucido-aurâ, lineis pallidis angularibus transversim notatâ, spirâ brevi, anfractibus longitudinaliter plicato-costatis; apertura parâ, oblongo-sinuosâ, labro incrassato, superne emarginato, intus denticulato.*

THE SCRATCHED COLUMBELLA. Shell ovate, transparent golden-yellow, marked transversely with angular pale lines, spire short, whorls longitudinally plicately ribbed; aperture small, oblong, sinuous, lip thickened, notched at the upper part, denticulated within.

Hab. — ?

A very striking species, of pellucid golden-yellow texture, marked transversely with light sharply-angled lines, like scratches.

Species 236. (Fig. a, b, Mus. Cuming.)

COLUMBELLA DORMITOR. *Col. testâ cylindrico-conoidâ, undique spiratiler striatâ et sulcatâ, violacâ, spirâ brevi, subulatâ; apertura oblongâ, angustâ, labro subincrassato, superne subemarginato, intus denticulato.*

THE SLEEPER COLUMBELLA. Shell cylindrically conoid, spirally ridged and grooved throughout, violet, spire short, rather obtuse; aperture oblong, narrow, lip rather thickened, faintly notched at the upper part, denticulated within.

SOWERBY, Thesaurus Conch. vol. i. p. 145. pl. 40. f. 173.

Hab. Island of St. Vincent, West Indies; Guilding.

This little species, of a distinctly typical ovaloid form, may be regarded as a characteristic example of Mr. Swainson's genus *Conella*.

Species 237. (Fig. a, b, Mus. Taylor.)

COLUMBELLA OCELLATA. *Col. testâ subulatâ, undique longitudinaliter plicato-costellatâ, albâ, aurantio-fusco lineâ et ocellatâ, spirâ turritâ, anfractibus plano-convexis, angustis, ultima ad basin sulcato et recurvo; apertura parâ, labro validè varicoso, intus denticulato.*

THE EYED COLUMBELLA. Shell subulate, longitudinally plicately ribbed throughout, whitish, stained and ocellated with orange-brown, spire turreted, whorls flatly convex, narrow, last whorl grooved, and recurved at the base; aperture small, lip strongly varicose, denticulated within.

Hab. — ?

Finely longitudinally ridged throughout and marked with eye-like points dipping at rather distant intervals from the sutures.

Species 238. (Mus. Cuming.)

COLUMBELLA PELAGIA. *Col. testâ subulatâ, longitudinaliter subtuberculato-costatâ, albâ, aurantio-fusco marmoratâ, spirâ turritâ, anfractibus angustis; apertura parâ, labro validè varicoso, superne emarginato, intus denticulato.*

THE DEEP SEA COLUMBELLA. Shell subulate, longitudinally somewhat tubercularly ribbed, white, marbled with orange-brown, spire turreted, whorls narrow; aperture small, lip strongly varicose, notched at the upper part, reticulated within.

Hab. — ?

Conspicuously marbled with orange-brown so as to leave a central white band and a series of white sutural spots.

Species 239. (Fig. a, b, Mus. Cuming.)

COLUMBELLA CHOAYA. *Col. testâ ovata, laevigatâ, later-*

COLUMBELLA.—PLATE XXXVII.

ente, castaneo-fusco lentiginosâ, spirâ obtusâ, anfractibus convexis; aperturâ parvâ, labro simplici, supernè subemarginato

THE COFFEE-BERRY COLUMBELLA. Shell ovate, smooth, yellowish, freckled with chestnut-brown, spire obtuse, whorls convex; aperture small, lip simple, faintly notched at the upper part.

Hab. Auckland, New Zealand.

A small olive-brown shell, mottled with somewhat obscure waved marks of chestnut-brown.

Species 240. (Mus. Taylor.)

COLUMBELLA LENTIGINOSA. *Col. testâ ovatâ, undique*

longitudinaliter costatâ, olivaceo-nigrâ, punctis albis bifasciatim lentiginosâ, anfractibus convexis, ultimo ad basin sulcato; aperturâ oblongâ, labro supernè emarginato, intus denticulato.

THE FRECKLED COLUMBELLA. Shell ovate, longitudinally ribbed throughout, olive-black, freckled with two bands of white dots, whorls convex, the last grooved at the base; aperture oblong, lip notched at the upper part, denticulated within.

HINDS, Moll. Voy. Sulphur.

Hab. Morton Bay, Australia (dredged in six fathoms water); Strange.

A dark olive-chestnut species, freckled in a characteristic manner with white dots, mostly disposed into two bands.

COLUMBELLA.

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reticulata, <i>Lamarck</i>	IX.	41		225
rorida, <i>Reeve</i>	XXVIII.	176		204
rosacea, <i>Reeve</i>	XXX.	183		224
ruda, <i>Sowerby</i>	IX.	42		59
rugosa, <i>Sowerby</i>	VII.	32		134
rugulosa, <i>Sowerby</i>	XIV.	71		93
rustica (<i>Falata</i>), <i>Linnæus</i>	XXXIII.	211		24
saccharata, <i>Reeve</i>	XXIX.	187		173
sagena, <i>Reeve</i>	XXVI.	162		63
sagitta, <i>Gaskoin</i>	XXVIII.	180		83
Sauta-Barlæarensis, <i>Carpenter</i>	XXI.	122		2
scalarina, <i>Sowerby</i>	III.	11		37
scalpta, <i>Reeve</i>	XXXVII.	235		142
seutulata, <i>Reeve</i>	XXX.	191		105
semiconvexa (<i>Bacrinosa</i>), <i>Lam.</i>	XXVIII.	95		107
<i>senipectolata</i> , <i>Lamarck</i>	XXXII.	208		107
solidula, <i>Reeve</i>	XXIV.	149		151
spaldia, <i>Philippi</i>	XXI.	123		14
sparsa, <i>Reeve</i>	XXXI.	200		206
spectrum, <i>Reeve</i>	XXX.	194		91
splendidula, <i>Sowerby</i>	VI.	25		31
spongianum, <i>Duclos</i>	VIII.	39		182
spurea, <i>Sowerby</i>	V.	23		130
strigata, <i>Reeve</i>	XXVIII.	154		51
Strombiformis, <i>Lamarck</i>	II.	8		57
subulata, <i>Sowerby</i>	XXXIII.	212		192
suffusa, <i>Sowerby</i>	XXVII.	89		80
sugillata, <i>Reeve</i>	XXIX.	189		44
sulcosa, <i>Sowerby</i>	XXII.	132		79
tæniata, <i>Adams and Reeve</i>	XXXIII.	140		XXIV.
tæniata, <i>Philippi</i>	XXII.	130		152
Tayloriana, <i>Reeve</i>			XXXV.	
tenebrica, <i>Reeve</i>			XXXI.	
tennis, <i>Gaskoin</i>			XXXV.	
Terpsichore, <i>Sowerby</i>			XII.	
tessellata, <i>C. B. Adams</i>			XXII.	
Ticonis, <i>Sowerby</i>			XVIII.	
tringa, <i>Sowerby</i>			V.	
tuberculata, <i>Reeve</i>			XXVII.	
tumida, <i>Duclos</i>			XIII.	
turturina, <i>Lamarck</i>			XVI.	
turrita, <i>Sowerby</i>			I.	
Tyleri, <i>Gray</i>			VIII.	
uncinata, <i>Sowerby</i>			XXIII.	
unicolor, <i>Sowerby</i>			XIX.	
unifasciata, <i>Sowerby</i>			XIX.	
unizonalis, <i>Gray</i>			XIX.	
valida, <i>Reeve</i>			XXIV.	
varia, <i>Sowerby</i>			III.	
varia, <i>Sowerby</i>			XXXII.	
varians, <i>Sowerby</i>			XVII.	
varicosa, <i>Gaskoin</i>			VII.	
velata, <i>Reeve</i>			XXVIII.	
venusta, <i>Reeve</i>			XXII.	
versicolor, <i>Sowerby</i>			XI.	
vexillum, <i>Reeve</i>			XII.	
viitata, <i>Reeve</i>			XXX.	
vulpecula, <i>Sowerby</i>			XVI.	
xiphitella, <i>Duclos</i>			IX.	
zebra, <i>Gray</i>			XV.	
zolina, <i>Duclos</i>			XXIV.	

ERRATUM.

Sp. 128. *Delete* synonym *C. tæniata*, *Philippi*

MONOGRAPH

OF THE GENUS

M E T A.

'Shrin'd in the midst, majestic Nature stands,
Extends o'er earth and sea her hundred hands
Tower upon tower her beamy forehead crests,
And births unnumber'd milk her hundred breasts."

Darwin



META.

PLATE I.

Genus META, Reeve.

*Testa conoidea, versus basin regulariter attenuata, spirâ br-
viusculâ, plerumque superficialiter canaliculatâ. Aper-
tura elongata, angusta, fauce prope marginem radia-
tim liratâ, iris brevibus.*

Shell conoid, regularly attenuated towards the base, spire rather short, generally superficially channelled. Aperture elongated, narrow, interior radiately ridged near the margin, ridges short.

The shells for which I here introduce a new genus are exactly intermediate in character between Mr. Swainson's two genera *Stromboidea* and *Conella*; but they constitute a group of better definition, and consequently higher rank in the system, than either. *Stromboidea*, on the one side, represented by the Linnæckian *Strombi urceus* and *gibberula*, and *Conella* on the other, of which the *Columbella semipunctata* and *pictata* may be quoted as types, can only be regarded as subgenera of the parent groups, whilst the six species which I associate together under the head of *Meta* are distinguished by an assemblage of characters peculiarly their own. There must necessarily be intermediate links on the confines of all genera, and in the present there is a species, *M. ovaloides*, with the lip ascending upon the penultimate whorl, which might with equal propriety be placed among the *Conellæ*. In the other species of *Meta* this character, which is one of the typical features of *Conella*, is wanting.

The form of *Meta* is that of a solid cone, but the lip is sculptured within with short radiating ridges, such as in *Columbella* are developed as teeth, and in *Strombus* as more extended ridges. There is also a peculiarity, so far as the species are at present known, in the style of painting.

The only information possessed relative to the habitat of the species, is that one is from South Africa.

Species 1. (Mus. Cuning.)

META MACROSTOMA. *Met. testâ subangustâ conoicâ, spirâ cylindricâ, apice obtusè elatâ, anfractibus superne spirâriter lineari-sulcatâ, deinde levibus, cito fortius salcatâ et liratâ; aurantio-fuscâ, albo variè nebulatâ, apice rosaceo; apertura elongatâ, fauce radiatim liratâ.*

THE LARGE-MOUTH META. Shell rather narrowly conoid,

spire cylindrical, obtusely raised at the apex, whorls spirally linearly grooved at the upper part, then smooth, soon more strongly grooved and ridged; orange-brown, variously clouded with white, apice pink; aperture elongated, radiately ridged within.

Conus macrostoma, Anton?, MS. in Mus. Cuning.

Hab. —?

This species, which has I believe been described by M. Anton as a *Conc*, very much resembles Mr. Broderip's *Conus conicus*; but it may readily be distinguished from that shell by the radiating ridges of the aperture, which constitutes its claim to a place in the present genus.

Species 2. (Fig. 2 a, Mus. Taylor. Fig. 2 b, Mus. Cuning.)

META OVULOIDES. *Met. testâ cylindrico-oblongâ, spirâ obtusè elatâ, anfractibus superne spirâriter striatâ, deinde levibus, ad basin pauciliratis; fulvo-castaneâ, albido punctatâ et variegatâ, apice albâ; apertura angustâ, fauce radiatim liratâ, labro subinflexo, superne ascendente.*

THE OVULOID META. Shell cylindrically oblong, spire obtusely raised, whorls spirally striated round the upper part, then smooth, sparsely ridged at the base; fulvous-chestnut, dotted and variegated with white; aperture narrow, radiately ridged within, lip rather inflected, ascending at the upper extremity.

Conella ovaloides, C. B. Adams, MS. in Mus. Cuning.

Hab. —?

The lip of this species ascends at the upper extremity on the penultimate whorl, after the manner of *Columbella semipunctata*, *pictata*, and *ovulata*, which are types of Mr. Swainson's *Conella*, and it may be therefore regarded as the intermediate link between that genus and the present, of which *M. Dupontæ* is the type.

Species 3. (Fig. 3 a, b, Mus. Cuning.)

META CERO-NULLI. *Met. testâ conoicâ, versus basin contracto-attenuatâ, spirâ subelatâ, acutâ, anfractibus superne angustatis, ad basin pauciliratis; fulvo-aurantâ, albo conspicuè eleganter maculatâ et reticulatâ; apertura subangustâ, fauce radiatim liratâ.*

THE MATCHLESS META. Shell conoid, contractedly at-

tenuated towards the base, spire somewhat raised, sharp, whorls angled at the upper part, sparsely ridged at the base; fulvous-orange, conspicuously elegantly blotched and reticulated with white; aperture rather narrow, interior radiately ridged.

Hab. — ?

An elegantly formed and very characteristic species, painted not much unlike the *Conus cedo-nulli*.

Species 4. (Fig. a, b, Mus. Cuming.)

META CONIFORMIS. *Met. testā conoideā, spirā subamplā, elatā, superficialiter canaliculatā, anfractibus supernè subacutè angulatis, deinde levibus, ad basin fortiter liratis; albā, purpureo-castaneo undique inconditè reticulatā; aperturā subangustā, fauce violascente, parum liratā.*

THE CONE-SHAPED META. Shell conoid, spire rather large, raised superficially channelled, whorls rather sharply angled at the upper part, then smooth, strongly ridged at the base; white, confusedly reticulated throughout with purple-chestnut; aperture rather narrow, interior pale-violet, but little ridged.

SOWERBY, Thesaurus Conch. vol. i. p. 122. pl. 37. f. 77, 78 (misprinted *C. corniformis*).

Hab. — ?

This species may be distinguished without difficulty by its more fusiformly conoid shape and confused pattern of painted network.

Species 5. (Mus. Cuming.)

META DUBIA. *Met. testā ovato-conicā, solidiusculā, spirā superficialiter canaliculatā, anfractibus supernè obtusè*

angulatis, ad basin liratis; rosaceo-aurantiā, fuscā favescente, albo marmoratā, supernè et medio cingulatā, apice rosaceo; aperturā subangustā, fauce parum liratā.

THE DOUBTFUL META. Shell ovately conical, rather solid, spire superficially channelled, whorls obtusely angled at the upper part, ridged at the base; roseate-orange, encircled above and round the middle with a white-marbled brownish band.

Strombus dubius, Sowerby, Thesaurus Conch. vol. i. pl. 7. f. 80.

Hab. — ?

Distinguished by a delicate yellowish-roseate hue and central marbled band.

Species 6. (Fig. c, d, Mus. Cuming.)

META DUPONTIÆ. *Met. testā abbreviato-conicā, supernè tumidiusculā, spirā brevi, anfractibus supernè obtusè angulatis, levibus, ad basin pauciliratis; aurantiā, olivaceo luctā, maculis albis subamplis fasciatim reticulatā, apice rosaceo; aperturā oblongā, fauce parum liratā.*

DUPONT'S META. Shell shortly conical, rather swollen at the upper part, spire short, whorls obtusely angled at the upper part, smooth, sparsely ridged at the base; orange, tinged with olive, reticulated with bands of rather large white spots, apex pink; aperture oblong, interior but little ridged.

Conus Dupontie, Kiener, Icon. Coquilles vivantes.

Hab. Ichabo, South Africa.

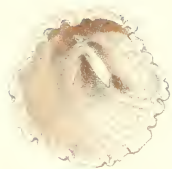
The painting of this species is very similar in character to that of *M. cedo-nulli*, but the form is well distinguished by its broader and more swollen aspect round the base of the spire.

MONOGRAPH

OF THE GENUS

C A L Y P T R Æ A.

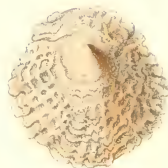
"But that I am forbid
To tell the secrets of my prison-house,
I could a tale unfold."—*Shakespeare.*



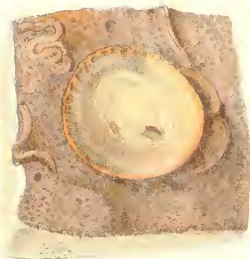
2a.



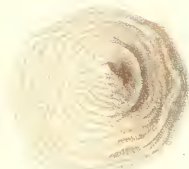
2b.



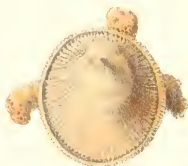
2c.



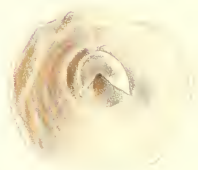
3b.



3a.



4.



4b.

CALYPTRÆA.

PLATE I.

Genus CALYPTRÆA, Lamarek.

Testa globoso-conica, tenuis, irregularis, vertice plerumque rostrata, pelliculo-alba, radiatim dense minutissimè striata, appendice internâ obliquâ, semi-infundibuliformi; interstitium valvæ basalem formans.

Shell globose conical, thin, irregular, generally beaked at the top, transparent-white, radiately densely very minutely striated, with an internal, oblique, semi-funnel-shaped appendage; sometimes forming a basal plate.

When M. Deshayes, in his edition of the 'Animaux sans Vertèbres' of Lamarek, came to examine the Cup-and-Saucer and Slipper Limpets, comprised respectively in the genera *Calyptrea* and *Crepidula*, he found them to be so nearly allied to each other as to desire that they should be united into a single genus, after the manner of *Helix* and *Caracolla*. "There exists a certain number of particular forms," said M. Deshayes, "to serve for grouping them in sections, but the internal appendage, which in some *Calyptrææ* is funnel-shaped, passes insensibly into the trochiform appendage of others, and into the septum of *Crepidula*; and the two genera must therefore be united." "This conclusion," continues the learned editor, "which we have in some degree foreseen, has been rigorously drawn and acted on by incontestable evidence, in a paper recently published by Mr. Broderip in the first volume of the Transactions of the Zoological Society."

Since the foregoing was written, the discovery of the animal of *Calyptrea equestris* has afforded evidence, not only that the *Crepidulæ* are distinct, but that the sections of *Calyptrea* indicated by M. Deshayes should be regarded as genera of the same rank. I propose, then, to retain *Crepidula* in its Lamarekian form, and for the cup-appendage and the trochoid, *Calyptrææ* to adopt the genera respectively instituted for them by Schumacher, *Crucibulum* and *Trochita*. It will be seen presently that the three very characteristic groups hitherto included under the head of *Calyptrea* cannot be regarded as sub-genera of a rank inferior in the scale to *Crepidula*. The *Calyptrææ* proper, represented by the Liönnæan *Patula equestris*, are all characterized by a shell of peculiarly fine, semitransparent thread-like tissue, and it may be fairly inferred that the animal which has been shown to be distinct in one species, corresponds with the shell in its distinctness in all.

When Mr. Cuming visited the island of Zebu, one of

the Philippine group, about twenty years since, he observed on some coral reefs a number of dead shells of *Calyptrea equestris*. Supposing that living specimens could not be far off, he was induced after considerable search to turn over a mass of coral that lay sunk about two feet in the sand, just below low-water mark. To his surprise, he found the living *Calyptrea equestris* attached by the foot to a separate calcareous plate. Upon further search he discovered specimens of other species similarly attached, and some also at the island of Bohol; and having captured the animal, he submitted it to Professor Owen for dissection. The phenomenon was observed about the same time at Mahé, one of the Seychelle Islands, by M. Dufo, a distinguished French conchologist, but no dissection appears to have been made by him of the animal. Professor Owen found the animal to differ from other known forms of *Calyptræidæ* "in the smaller development of its locomotive and respiratory organs, and in the greater development of the organs for the prehension and assimilation of food." "The foot," continues the Professor, "may well offer diminished proportions when the animal has chosen a site for the deposition of its ventral plate, and has taken up a fixed abode. Muscular action being thenceforward much restricted, the necessity for extensive respiration is in the same degree abolished."

The *C. lactum-Siense* was the only other species of this group known to Lamarek, but attention having been drawn to them, upwards of thirty have been collected, chiefly from the Philippines, Moluccas, and Galapagos Islands, but also from Honduras, the West Indies, Ceylon, and Australia.

Species 1. (Fig. 1 a, b, c, Mus. Cuming.)

CALYPTRÆA EQUESTRIS. *Calypt. testâ suborbiculari, solidiusculâ, rudè convexâ, vertice minutè rostratâ, albâ, prope marginem fulvescente, radiatim tenuilibratâ, livis acutis, compressis, undulatis, subtuberculatis, interstitiis radiatim minutè striatis; appendice internâ subamplâ; valvâ basali amplâ, concavâ, patelloformi, margine irregulariter obscure corrugatâ.*

THE KNIGHTLY CALYPTRÆA. Shell nearly orbicular, rather solid, rudely convex, minutely beaked at the top, white, fulvous near the margin, radiately finely ridged, ridges sharp, compressed, a little waved, somewhat tubercled, interstices radiately minutely striated; in-

terial appendage rather large; basal plate large, concave, platter-shaped, irregularly obscurely puckered at the edge.

Patella equestris, pars, Linnaeus, Syst. Nat. p. 257.

Calyptrea equestris, pars, Lamarck.

Calyptrea Roissyi, Dufó.

Lithedaphus longirostris, Owen.

Hab. Island of Bohol, Philippines (attached to the under surface of masses of coral pressed to some depth in the sand); Cuming.

It is impossible to determine which of the two or three nearly allied forms of *Calyptrea* represented by this species is the original type of the Linnæan *Patella equestris*. The shell which I assign to it, the same of which the animal was described in 1842, by Professor Owen, under the title of *Lithedaphus longirostris*, corresponds the best with the Lamarckian diagnose, "striis longitudinalibus acutis, undulatis, subtuberculatis," though not with the Lamarckian figures of reference; and it corresponds also best with Dufó's *C. Roissyi*, which he describes as having the margin of the upper shell dented, the extremities of the ridges giving it that appearance. The basal valve of this species takes the form of a concave platter, obscurely puckered round the edge, without reference to the nature of its place of attachment. The two specimens here figured have precisely the same platter-like valve at the base, though attached to very different substances. The specimen fig. 1*b*, the upper valve belonging to which is represented above at fig. 1*a*, is set in the bed of a solid coral mass; while the specimen fig. 1*c*, with the upper valve *in situ*, is attached to a sprig of branching coral.

Species 2. (Fig. 2*a* and 2*b*, Mus. Cuming.)

CALYPTRÆA TORTILIS. *Calyp. testâ suborbiculari, depresso-conicâ, vertice obtusâ, candidâ, sub lente minutissimè radiatim striatâ, versus marginem peculiariter corrugatâ, rugis tumidis, valdè promincis; appendice interna mediocri.*

THE CRUMPLED CALYPTRÆA. Shell somewhat orbicular, depressly conic, obtuse at the top, white, beneath the lens very minutely radiately striated, peculiarly crumpled towards the margin, the crumples being swollen and very promiscuous; internal appendix middling.

Hab. Galapagos Islands; Cuming.

Strongly marked by a peculiar crumpling or shrivelling of the outer surface.

Species 3. (Fig. 3*a* and 3*b*, Mus. Cuming.)

CALYPTRÆA CICATRICOA. *Calyp. testâ orbiculari, depressâ, vertice parvus elevatâ, tenui, candidâ, sub lente minutissimè radiatim striatâ, concentricè peculiariter plicato-corrugatâ, rugis tumidis, irregularibus; appendice internâ latiusculâ.*

THE CICATRICED CALYPTRÆA. Shell orbicular, depressed, but little raised at the top, thin, white, beneath the lens very minutely radiately striated, concentrically peculiarly plicately crumpled, crumples swollen, irregular; internal appendage rather broad.

Hab. Catanauan, Province of Tayabas, Island of Luzon, Philippines; Cuming.

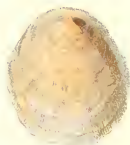
An interesting species, of rather flattened growth, curiously crumpled, but on a different plan to the preceding species.



5a



5b



5c



5d



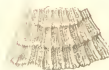
6a



6b



6c



6d

CALYPTREA.

PLATE II.

Species 4. (Fig. 4 *a*, *b*, *c*, *d*, Mus. Cuming.)

CALYPTREA BULLA. *Calypt. testâ suborbiculari, tenuissimâ, plicato-oblâ, subconoidâ, concentricè plicato-corrugatâ, vertice eiz rosâtoâ, nudique pulcherrimè radiatâ lirato-striatâ, striis striatulis concentricis sub lente subtilissimè fenestralis; appendice internâ breviusculâ, gracili; valvâ basali tenui, irregulari, opacâ.*

THE BUBBLE CALYPTREA. Shell nearly orbicular, very thin, transparent-white, subconoid, concentrically plicately wrinkled, scarcely beaked at the top, everywhere very beautifully radiately ridge-striated, striae very finely latticed beneath the lens with concentric finer striae; internal appendage rather short, slender; basal valve thin, irregular, opaque.

Hab. Island of Zebu, Philippines (attached to the under surface of the ledge of a hard sandstone-rock); Cuming.

An extremely delicate glassy shell, the elaborate latticed texture of which, represented on a highly magnified scale at Fig. 4 *d*, is quite marvellous when examined with a lens before the light. It is, nevertheless, only a form of sculpture which predominates with a peculiar typical exactness under various phases in all the species. The basal valve, seen at the lower edge of the piece of rock, Fig. 4 *b*, is but a slight irregular deposit of calcareous matter, void of any regular sculpture. Fig. 4 *a* and 4 *c* represent the interior and exterior of the shell removed from its place of attachment.

Species 5. (Fig. 5 *a* and 5 *b*, Mus. Cuming.)

CALYPTREA DORMITORIA. *Calypt. testâ ovalâ, rudè convexâ, marginè sinuatâ, obliquâ, vertice laterali, obtusi, pellucido-oblâ, superne subterrugineâ, superficialiter*

corrugatâ, radiatim regulariter subtiliter striatâ; appendice internâ valdè obliquâ.

THE NIGHT-CAP CALYPTREA. Shell ovate, rudely convex, sinuated at the margin, oblique, vertex lateral, obtuse, transparent-white, tinged with rust towards the upper part, superficially wrinkled, radiately regularly finely striated; internal appendage very oblique.

Hab. Island of Burias, Philippines; Cuming.

An obliquely formed tumid species, rather crumpled at the margin, finely striated throughout.

Species 6. (Fig. 6 *a* and 6 *b*, Mus. Cuming.)

CALYPTREA PAPIRACEA. *Calypt. testâ compressè ovalâ, tumido-conicâ, obliquâ, vertice postico, pellucido-oblâ, radiatim subconspicè striatâ, nudique peculiariter corrugatâ, margine sinuatâ; appendice internâ, valdè obliquâ.*

THE PAPER CALYPTREA. Shell compressly ovate, swollen conic, oblique, vertex posterior, transparent-white, radiately rather conspicuously striated, everywhere peculiarly wrinkled, sinuated at the margin; internal appendix very oblique.

A. ADAMS, MS. Mus. Cuming.

Hab. Philippine Islands; Cuming.

A light, swollen, compressly ovate species, very obliquely grown, the vertex being quite posterior. The striae are more conspicuously developed than in the preceding species, and there is a peculiar wrinkled character about the surface which does not appear to have arisen from any irregularity of its place of attachment. The crumpling of the margin is also characteristic.



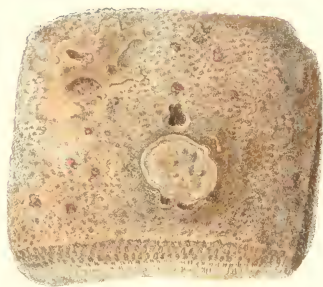
6a



7a



8b



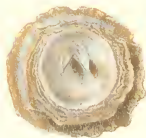
7b



9a



9b



10

CALYPTREÆ.

PLATE III.

Species 7 (Fig. 7 a and 7 b, Mus. Cuming.)

CALYPTREÆ ADAMSII. *Calypt. testâ suborbiculari, solidiusculâ, depresso-conicâ, concentricè plicato-laminatâ, vertice obtusâ, radiatim densè lirato-striatâ, striis valdè acutis, confertis, undulatis; appendice internâ prominente; calcâ basali tenui, subobovata.*

ADAMS'S CALYPTREÆ. Shell nearly orbicular, rather solid, depressed, conical, concentrically plicately laminated, obtuse at the top, radiately densely ridgestriated, striae very sharp, close set, waved, internal appendage prominent; basal valve thin, rather obscure.

Calyptreæ depressa, Adams and Reeve (not Lamarck), Moll. Voy. Samarang, p. 70. pl. 11. f. 2 a, b.

Hab. Daleguete, Island of Zebu, Philippines (on masses of coral, buried in sand at a depth of from two to four feet); Cuming.

Detached specimens of this species, collected by Sir Edward Belcher in the China Sea, and described by Mr. Adams and myself in the 'Mollusca of the Voyage of the Samarang,' under a name which I find has been used by Lamarck in reference to a fossil species, prove identical with the specimen before me collected by Mr. Cuming on its native coral at the Philippine Islands. Fig. 7 b represents a piece sawn from a block of coral with the thin basal plate in the centre; and Fig. 7 a represents the shell detached from it to show the interior.

Species 8. (Fig. 8 a and 8 b, Mus. Cuming.)

CALYPTREÆ ALVEOLATA. *Calypt. testâ suborbiculari, sordide albâ, depresso-conveçâ, vertice acutè rostratâ, vertice sublaterali, radiatim lirâtâ et striatâ, liris flexuosis, valdè irregularibus, undique compresso-squamatis, concentricè hic illic tenuè fimbriatâ; appendice internâ subextensâ.*

THE HONEYCOMBED CALYPTREÆ. Shell somewhat orbicular, dull-white, depressly convex, sharply beaked at the top, top rather lateral, radiately ridged and striated, ridges flexuous, very irregular, everywhere

compressly scaled, concentrically thinly fimbriated here and there; internal appendage rather extended. A. ADAMS, MS. Mus. Cuming.

Hab. Galapagos islands; Cuming.

The ridged sculpture in this species has a peculiar wildly flexuous character, and is laterally compressed and raised into scales throughout, interrupted at intervals with fine concentric laminar frills.

Fig. 9 a and 9 b. (Mus. Cuming.)

This transparent and elaborately carved shell, collected by Mr. Cuming, at Baclayan, Island of Bohol, Philippines, appears to be a variety, of more regular and delicate growth, of the preceding species from the Galapagos Islands. The general form, especially as regards the vertex, is the same, and the idea of sculpture, though differently developed, is similar.

Species 10. (Mus. Cuming.)

CALYPTREÆ RECTUM-SINENSE. *Calypt. testâ orbiculari, pellucido-albâ, depressâ, lamellis tenuibus concentricis numerosis peculiariter contabulatâ, lamellis striis densè radiatis, vertice recto; appendice internâ subprominente.*

THE CHINESE-ROOF CALYPTREÆ. Shell orbicular, transparent-white, depressed, peculiarly roofed with numerous concentric lamellæ, which are densely rayed with striae, vertex straight; internal appendix rather prominent.

LAMARCK, Anim. sans vert. vol. vii. p. 624.

Potella tectum-Sinense, Chemnitz.

Hab. Island of Capul, Philippines (abundant under stones at low-water); Cuming.

The peculiar succession of raised lamellæ with which this species is roofed, giving an appearance to the shell which suggested to the old French naturalists the name of *Le Toit Chinois*, has been so often figured that I have deemed it sufficient to give the under surface and interior.



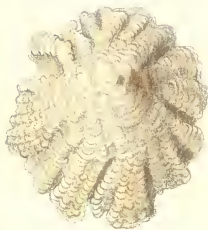
12 a



11 c



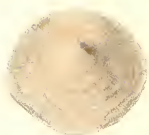
12 b



13 a



14 a



15 b



13 b



14 b



15 a



16 b

Calyptra

Calyptra

CALYPTRÆA.

PLATE IV.

Species 11. (Fig. 11 *a* and 11 *b*, Mus. Cuming.)

CALYPTRÆA FURCATA. *Calyp. testâ orbiculari, depresso-convexâ, albe, apice-maculatâ, radiè irregulari, radiâ in densè striatâ, striis acutis, cavè divergentibus, cavè subpositâ, obtusè unimillatâ; appendice internâ parvâ, brevissimâ.*

THE BUTTONED CALYPTRÆA. Shell orbicular, d-pressy convex, white, wrinkle-indentured, very irregular, radiately densely striated, striae sharp, variously diverging, vertex somewhat posterior, obtusely unimillate; internal appendage small, very short.

Hab. Catamanan, Province of Tayabas, Island of Luzon, Philippines; Cuming.

Of a depressed shrivelled growth, striated somewhat divaricately throughout, with the internal appendage very small.

Species 12. (Fig. 12 *a* and 12 *b*, Mus. Cuming.)

CALYPTRÆA STULTORI M. *Calyp. testâ orbiculari, convexâ, pileiformi, cavè posticè acutè uncinatâ, concentricè plicatè-corrugatâ, radiatâ densè striatâ; pellucidatâ; appendice internâ obliquè arcuatâ.*

THE FOOL'S-CAP CALYPTRÆA. Shell orbicular, conical, cap-shaped, posteriorly sharply hooked at the top, concentrically plicately wrinkled, radiately densely striated, transparent-white; internal appendage obliquely arched.

Hab. Moluccas.

A delicate *Pileopsis*-shaped shell, of thin transparent-white substance, very sharply hooked at the top, encircled concentrically, more especially towards the margin, with irregular wrinkle-like folds.

Species 13. (Fig. 13 *a* and 13 *b*, Mus. Cuming.)

CALYPTRÆA MARTINIANA. *Calyp. testâ ovatâ, elevato-convexâ, pellucido-albâ, crassiusculâ, validè undato-corrugatâ præsertim ad marginem, undique rugis exasperatâ, cavè subcentrali, obtusâ; appendice internâ obliquâ, prominente.*

MARTINI'S CALYPTRÆA. Shell ovate, elevatedly convex, transparent-white, rather thick, strongly wave-crumpled, especially at the margin, everywhere roughened with wrinkles, top nearly central, obtuse; internal appendage oblique, prominent.

Lepas alba, Martini, Conch. Cab. vol. i. p. 150. pl. 15. f. 117, 118.

Hab. Batangas, Island of Luzon, Philippines; Cuming.

All the shells of this genus that came into the hands of the earlier writers were referred to the Linnæan *Pulella equetris*, and this among the number. It was one of the first shells published by Martini in his great work the 'Conchylien Cabinet,' commenced in the old academic town of Nuremberg, in 1769. The specimen here figured, collected by Mr. Cuming at the island of Luzon, is an unusually fine specimen, remarkable for its bold crumpled growth.

Species 14. (Fig. 14 *a* and 14 *b*, Mus. Cuming.)

CALYPTRÆA CEPACEA. *Calyp. testâ suborbiculari, parvo-convexâ, pellucido-albâ, subcorrugatâ, radiatâ densè striatâ, striis subconspicuis, cavè subpositâ, parvâ, acutâ, minutè uncinatâ; appendice internâ brevi, latiusculâ.*

THE ONION-PEEL CALYPTRÆA. Shell nearly orbicular, but little convex, transparent-white, rather wrinkled, radiately densely striated, striae rather conspicuous, top somewhat posterior, small, sharp, minutely hooked; internal appendage short, rather broad.

Broderip, Trans. Zool. Soc. vol. i. p. 197. pl. 27. f. 4.

Hab. Island of Muerte, Bay of Guayaquil; Cuming.

A rather flat, lyaline shell, with the beautiful radiating striae which characterize nearly all the species of this genus under different phases, rather conspicuously developed.

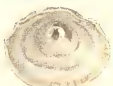
Species 15. (Fig. 15 *a* and 15 *b*, Mus. Cuming.)

CALYPTRÆA SACCHARI-META. *Calyp. testâ orbiculari, elevato-convexâ, pileiformi, albâ, concentricè radiè plicato-corrugatâ, radiatâ striatâ, cavè subcentrali, obtusè uncinatâ; appendice internâ subelongatâ.*

THE SUGAR-LOAF CALYPTRÆA. Shell orbicular, elevatedly convex, cap-shaped, white, concentrically rudely plicately wrinkled, radiately striated, top nearly central, obtusely hooked; internal appendage rather elongated.

Hab. Island of Bohol, Philippines; Cuming.

Very closely allied to *C. stultorum*, but of more solid structure and more elevated conical form. The vertex is not however so posteriorly hooked and cap-like. The wrinkled sculpture is coarser, but that might be due to the more roughened surface of its place of attachment.



16 a



17 a



17 b



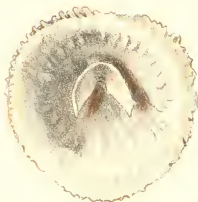
18 a



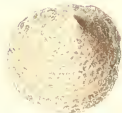
19 a



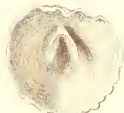
19 b



18 b



20 a



20 b



16 b

CALYPTRÆA.

PLATE V.

Species 16 (Fig. 16 a and 16 b, Mus. Cuming.)

CALYPTRÆA SCABIES. *Calyp. testâ transversè ovatâ, parâ convexâ, emarginatè rugosâ, sublamellatâ, radiatim minutissimè striatâ, vertice obtuso, subpostico; appendice internâ parâ, brevissimâ; albâ, ætus sordidè fulvovulvâ.*

THE SCAB CALYPTRÆA. Shell transversely ovate, but little convex, concentrically rugose, sublamellar, radiately very minutely striated, top obtuse, somewhat posterior; internal appendage small, very short; white, exterior dull-fulvous.

Hab. Philippine Islands; Cuming.

The internal appendage in this species is somewhat obscurely developed.

Species 17. (Fig. 17 a and 17 b, Mus. Cuming.)

CALYPTRÆA UNGINATA. *Calyp. testâ depresso-pileiformi, tenui, subcorrugatâ, radiatim densè minutissimè striatâ, vertice postico, acutè depressè uncinato; pellucido-albâ, hœmatis; appendice internâ obliquâ, prominente.*

THE HOOKED CALYPTRÆA. Shell depressly cup-shaped, thin, slightly wrinkled, radiately densely very minutely striated, top posterior, sharply depressly hooked; transparent-white, hyaline; internal appendage oblique, prominent.

Hab. Island of St. Thomas, West Indies.

A hyaline, sharply-hooked, rather depressly cup-shaped shell, from the West Indies, composed of the same minute thread-rayed tissue as the Philippine Island species.

Species 18. (Fig. 18 a and 18 b, Mus. Cuming.)

CALYPTRÆA CORRUGATA. *Calyp. testâ suborbiculari, depressâ, medio conoidè, radiatim striatâ et costato-corrugatâ, prope marginem subquamato-fimbriatâ, deinde reflectâ, vertice subrecto, obscure uncinato; albâ, ætus marginis sordidè fuscæscens; appendice internâ subovipâ, latâ.*

THE WRINKLED CALYPTRÆA. Shell nearly orbicular, depressed, conoid in the middle, radiately striated and rib-wrinkled, slightly scale-fringed near the

margin, then reflected, top nearly straight, obscurely hooked; white, dull-fulvous towards the margin; internal appendage rather large, broad.

BRODERIP, Trans. Zool. Soc. vol. i. p. 197. pl. 27. f. 2.

Hab. Guacomayo, Central America (under stones at a depth of fourteen fathoms); Cuming.

A fine depressly-spread conoid shell, sculptured with rib-like wrinkles radiating from the centre, and at the margin becoming slightly fimbriately scaled.

Species 19. (Fig. 19 a and 19 b, Mus. Cuming.)

CALYPTRÆA OSSEA. *Calyp. testâ orbiculari, depressâ, medio conoidè, pellucido-albâ, hyalinâ, radiatim densè striatâ, striis subconspicuis, vertice postico, acutè uncinato; appendice internâ obliquâ, prominente.*

THE BONE CALYPTRÆA. Shell orbicular, depressed, conoid in the middle, transparent-white, hyaline, radiately densely striated, striae rather conspicuous, top posterior, sharply hooked; internal appendage oblique, prominent.

Hab. Island of Burias, Philippines; Cuming.

A very transparent depressly-spread species, in which the radiating striae have a somewhat lattice-ridged aspect.

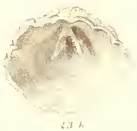
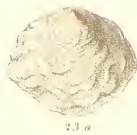
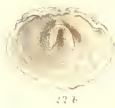
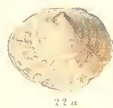
Species 20. (Fig. 20 a and 20 b, Mus. Cuming.)

CALYPTRÆA POROSA. *Calyp. testâ orbiculari, elevatè conicâ, pileiformi, undique densè reticulato-corrugatâ, porosâ, albâ, vertice postico, minutè acutè uncinato; appendice internâ subarcuatâ.*

THE POROUS CALYPTRÆA. Shell orbicular, elevately conic, cup-shaped, everywhere densely reticulately wrinkled, porous, white, top minutely sharply hooked, internal appendage slightly arched.

Hab. Australia; Strange.

Like all Australian forms, there is something extremely characteristic about the species. The entire surface of the shell is shrivelled, so to speak, into a close network or honeycomb of wrinkles, the tissue of the shell being still composed of radiating thread-like striae, as in all the typical species of the genus.



CALYPTRÆA.

PLATE VI.

Species 21. (Fig. 21 *a* and 21 *b*, Mus. Cuming.)

CALYPTRÆA BALANOIDES. *Calyp. testâ obliquè conicâ, irregulari, radiatim minutè striatâ et prominèssè costato-corrugatâ, albâ, vertice acuto, subuncinato; appendice internâ obliquâ.*

THE BARNACLE-LIKE CALYPTRÆA. Shell obliquely conic, irregular, radiately minutely striated and promiscuously rib-wrinkled, white, top sharp, slightly hooked; internal appendage oblique.

Hab. Island of Bohol, Philippines; Cuming.

The wrinkled sculpture in this little *Balanus*-like species takes somewhat the form of straggling ribs.

Species 22. (Fig. 22 *a* and 22 *b*, Mus. Cuming.)

CALYPTRÆA CORNEA. *Calyp. testâ transversè ovatâ, depressâ, radiatim minutè striatâ, concentricè lineatâ, complanatâ, parvè corrugatâ, vertice postico, uncinato; appendice internâ obliquâ.*

THE HORN CALYPTRÆA. Shell transversely ovate, depressed, radiately minutely striated, concentrically lined, smooth, but little wrinkled, top posterior, hooked; internal appendage oblique.

BRODERIP, *Trans. Zool. Soc. vol. i. p. 197. pl. 27. f. 5.*

Hab. Peru (from sandy mud at the depth of nine fathoms); Cuming.

A plain depressed shell, finely hooked, and inclined posteriorly.

Species 23. (Fig. 23 *a* and 23 *b*, Mus. Cuming.)

CALYPTRÆA DIAPHANA. *Calyp. testâ ovatâ, rudè convexâ, pellucido-albâ, diaphanâ, radiatim minutè striatâ, striis subdivaricatis, concentricè corrugatâ, rugis plicato-reticulatis, vertice postico, obtusè uncinato; appendice internâ obliquâ.*

THE DIAPHANOUS CALYPTRÆA. Shell ovate, rudely convex, transparent-white, diaphanous, radiately minutely striated, striæ subdivaricate, concentrically

corrugated, wrinkles plicately reticulated, top posterior, obtusely hooked; internal appendage oblique. *Hab.* Philippine Islands; Cuming.

Of peculiarly clear diaphanous substance, sculptured with a promiscuous open network of tumid wrinkles.

Species 24. (Fig. 24 *a* and 24 *b*, Mus. Cuming.)

CALYPTRÆA STELLA. *Calyp. testâ suborbiculari, planulatâ, iris subtilibus radiantibus striis concentricis decussatis, densè nitidè stellatâ, vertice subcentrali, parvè, acuto; appendice internâ brevissimâ.*

THE STAR CALYPTRÆA. Shell nearly orbicular, rather flat, closely neatly starred with fine radiating ridges crossed with concentric striæ, top nearly central, small, sharp; internal appendage very short.

Hab. Bèize, Honduras; Dyson.

The sculpture of this little thin flattened species is more regular and symmetrical than in any other species. It appears to represent a different type.

Species 25. (Fig. 25 *a* and 25 *b*, Mus. Cuming.)

CALYPTRÆA VARIA. *Calyp. testâ orbiculari vel transversè ovatâ, plano-concavâ, nunc tenui, nunc crassiusculâ, radiatim creberrimè striatâ, lævigatâ, pellucido-albâ, vertice subcentrali, parvè, subacuto; appendice internâ latiusculâ.*

THE VARIABLE CALYPTRÆA. Shell orbicular or transversely ovate, flatly concave, sometimes thin, sometimes rather thick, radiately very closely striated, smooth, transparent-white, top nearly central, small, rather sharp; internal appendage rather broad.

BRODERIP, *Trans. Zool. Soc. vol. i. p. 197. pl. 27. f. 3.*

Hab. Lord Hood's Island, the Galapagos and Island of Muerte, Bay of Guayaquil (on the reefs); Cuming.

In all its variations this species is contracted at the margin on the side next the vertex.

Calyptrea Pl. VII.



26 a



27 a



27 b



26 b



28 a



26 c



26 d



29 a



29 b



26 e

Calyptrea

Calyptrea

Calyptrea

CALYPTREA.

PLATE VII.

Species 26. (Fig. 26 *a, b, c, d*, Mus. Cuming.)

CALYPTREA HIPPONICIFORMIS. *Calyp. testâ elevato-conicâ, obliquâ, pellucido-albâ, undique subtiliter striatâ, interdum rudè corrugatâ; vertice postico, rudè obliquo, obtuso; appendice internâ gracili.*

THE HIPPONYX-SHAPED CALYPTREA. Shell elevately conical, oblique, transparent-white, everywhere finely thread-striated, sometimes rudely wrinkled; top posterior, very oblique, obtuse; internal appendage slender.

Hab. Island of Bohol, Philippine Islands; Cuming.

In form this shell has an unusual tendency to lean over obliquely to the posterior side. It is of an exquisite thread-striated tissue.

Species 27. (Fig. 27 *a, b*, Mus. Cuming.)

CALYPTREA CANCELLATA. *Calyp. testâ obliquè conicâ, pellucido-albâ, radiatim tenuicostatâ, costis medio subtilissimè sulcatis, striis concentricis cancellatis et fimbriato-squamatis, vertice minuto, acuto, posticè valde producto; appendice internâ subprominente.*

THE CANCELLED CALYPTREA. Shell obliquely conical transparent-white, radiately finely ribbed, ribs very finely grooved down the middle, cancellated and fimbriately scaled with concentric striae, top minute, sharp, very much produced posteriorly; internal appendage rather prominent.

ADAMS and REEVE, *Moll. Voy. Samarang*, p. 70. pl. 11. f. 4.

Hab. China Sea.

This species is characterized by a more elaborate pat-

tern of cancellated scaled sculpture than any other, the ribs being mostly distinguished by a fine groove down the middle.

Species 28. (Fig. 28 *a, b*, Mus. Cuming.)

CALYPTREA LAYARDI. *Calyp. testâ elevato-conicâ, subgloboâ, radiatim subacutè striato-costatâ, vertice obtuso, posticè obliquo; albâ; appendice internâ rectâ, subprominente.*

LAYARD'S CALYPTREA. Shell elevately conical, rather globose, radiately rather sharply striately ribbed, top obtuse, posteriorly oblique; white; internal appendage straight, rather prominent.

Hab. Ceylon; E. L. Layard.

A well-marked species, more globosely elevated than the preceding, with a simpler form of sculpture.

Species 29. (Fig. 29 *a, b*, Mus. Cuming.)

CALYPTREA CYATHELLA. *Calyp. testâ orbiculari, semi-globoâ, pellucido-albâ, radiatim tenuistriatâ, concentricè compressè lamellatâ, albâ, vertice vix obliquo, obtuso; appendice internâ subrectâ.*

THE LITTLE CUP CALYPTREA. Shell orbicular, semi-globose, transparent-white, radiately finely striated, concentrically compressly lamellated, white, top scarcely oblique, obtuse; internal appendage nearly straight.

Hab. Island of Bohol, Philippines; Cuming.

This little shell has scarcely any oblique growth, being a half sphere.

Calyptrae Pl. VIII.



31 a



30 a



32 a



34 b



37 a



35 b



38 c



33 a



36 b



34 d

CALYPTRÆA.

PLATE VIII.

Species 30. (Fig. *a, b, c, d*, Mus. Cuming.)

CALYPTRÆA SCUTULUM. *Calyp. testâ orbiculari, regulariter convexâ, pellucido-albâ, hyalinâ, radiatum liratâ, liris æquidistantibus, interstitiis radiatum striatis, vertice postico, uncinato; appendice internâ parvâ.*

THE LITTLE SHIELD CALYPTRÆA. Shell orbicular, regularly convex, transparent-white, hyaline, radiately ridged, ridges equidistant, interstices radiately striated, top posterior, hooked; internal appendage small.

Hab. Philippine Islands; Cuming.

Characterized by a broad orbicular form, with the radiating ridges rather conspicuous, at equal distances.

Species 31. (Fig. *a, b*, Mus. Cuming.)

CALYPTRÆA ACULEATA. *Calyp. testâ suborbiculari, depresso-concavâ, pellucido-albâ, hyalinâ, sub lente tenuissimè radiatum striatâ, margine corrugatâ, aculeato-squamulatâ, squamis promiscuis, subdistantibus, vertice postico, acutè uncinato; appendice internâ gracili.*

THE PRICKLY CALYPTRÆA. Shell nearly orbicular, depressly convex, transparent-white, hyaline, beneath the lens very finely radiately striated, crumpled at the margin, prickly scaled, scales promiscuous, rather distant, top posterior, sharply hooked; internal appendage slender.

Hab. Honduras; Dyson.

This very delicate little species is distinguished from all

others by the presence of a number of rather distant squamate spines.

Species 32. (Fig. *a, b*, Mus. Cuming.)

CALYPTRÆA VANIKORENSIS. *Calyp. testâ obliquè conicâ, crassiusculâ, pellucido-albâ, radiatum liratâ et striatâ, vertice postico, elevato; appendice internâ perobliquâ.*

THE VANIKORO CALYPTRÆA. Shell obliquely conical, rather thick, transparent-white, radiately ridged and striated, top posterior, raised; internal appendage very oblique.

QUOY, Moll. Voy. de l'ASTROLABE, pl. 72. f. 20-24.

Hab. ———?

Resembling *C. scutulum* in sculpture, but of more rude oblique growth.

Species 33. (Fig. *a, b*, Mus. Cuming.)

CALYPTRÆA UMBO. *Calyp. testâ elevato-conicâ, pileiformi, pellucido-albâ, radiatum liratâ et striatâ, liris rudè furcibus, rugoso-interruptis, vertice subpostico, uncinato; appendice internâ gracili.*

THE BOSS CALYPTRÆA. Shell elevatedly conical, cap-shaped, transparent-white, radiately ridged and striated, ridges strong, roughly interrupted, top subposterior, hooked; internal appendage slender.

Hab. Honduras; Dyson.

The ridges of this little erect, cap-shaped species are strong and peculiarly roughened.

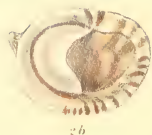
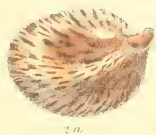
CALYPTREA.

	Plate	Species		Plate	Species
<i>aculeata, Reeve</i>	VIII.	31	<i>Layardi, Reeve</i>	VII.	28
<i>Adamsii, Reeve</i>	III.	7	<i>Martiniana, Reeve</i>	IV.	13
<i>alveolata, A. Adams</i>	III.	8	<i>ossea, Reeve</i>	V.	19
<i>Balanoides, Reeve</i>	VI.	21	<i>papyracea, A. Adams</i>	II.	6
<i>bulia, Reeve</i>	II.	4	<i>porosa, Reeve</i>	V	20
<i>cancellata, Adams and Reeve</i>	VII.	27	<i>Roissyi, Dufo</i>	I.	1
<i>capacea, Broderip</i>	IV.	14	<i>sacchari-meta, Reeve</i>	IV.	15
<i>ciatricosa, Reeve</i>	I.	3	<i>scabris, Reeve</i>	V	16
<i>cornea, Broderip</i>	VI.	22	<i>scutulum, Reeve</i>	VIII.	30
<i>corrugata, Broderip</i>	V.	18	<i>stella, Reeve</i>	VI.	24
<i>cyathella, Reeve</i>	VII.	29	<i>stultorum, Reeve</i>	IV.	12
<i>depressa, Adams and Reeve</i>	III.	7	<i>rectam-Sincuse (Paletta), Chem.</i>	III.	10
<i>diaphana, Reeve</i>	VI.	23	<i>torilis, Reeve</i>	I.	2
<i>dormitoria, Reeve</i>	II.	5	<i>unbo, Reeve</i>	VIII.	33
<i>equestris (Paletta), Linnæus</i>	I.	1	<i>uncinata, Reeve</i>	V.	17
<i>fibulata, Reeve</i>	IV.	11	<i>Vanikorensis, Quoy</i>	VIII.	32
<i>Hipponiciformis, Reeve</i>	VII.	26	<i>varia, Broderip</i>	VI.	25

MONOGRAPH
OF THE GENUS
C R E P I D U L A.

— I declare thy sweet grace's slipper.
Shakespeare.





CREPIDULA.

PLATE I.

Genus CREPIDULA, Lamarck.

Testa ovata vel oblonga, plerumque obliqua, extus levigata, rariò costata, apice brevis, sæpiissime marginati, plus minus rostrato, intus cava, lamina horizontali septiformi, interdum ad latus emarginatâ.

Shell ovate or oblong, gradually oblique, smooth exteriorly, rarely ribbed, with the apex mostly marginal and more or less beaked, interiorly hollow, with a horizontal septum-like lamina, sometimes notched at the side.

The *Crepidulae*, or true Slipper Limpets, are characterized by the internal appendage, which is the distinguishing feature of this family, assuming a horizontal deck-like form. The species have been little added to since they were monographed twenty-five years ago by Mr. Broderip, and several then described as new have proved to be varieties of others. They are chiefly inhabitants of the New World.

Species 1. (Mus. Cuming.)

CREPIDULA UNGUIFORMIS. *Crep. testâ ovali vel oblongâ, plana aut convexa, sæpe costatis, complanatâ, calce concentricè striatâ, epidermide subpilosâ florescente interdana versus marginem indatâ, intus nitente-albâ; appendice subampliter septiformi, ad latus subemarginatâ.*

THE NAIL-SHAPED CREPIDULA. Shell oval or oblong, flat or concave, often twisted, smooth, externally concentrically striated, sometimes covered towards the margin with a yellowish somewhat hairy epidermis, internally shining-white; appendage rather largely septum-shaped, slightly notched at the side.

LAMARCK, Anim. sans vert. vol. vii. p. 642.

Patella crepidula, Linnæus.

Crepidula calcitrans, Deshayes.

Crepidula sinuosa, Turton.

Crepidula candida, Risso.

Crepidula Italica, Defrance.

Crepidula plana, Say.

Hab. Mediterranean and Atlantic seas.

Extremely variable in form, according to its place of attachment, but uniformly of a thin, white, brittle substance, shining and subdiaphanous on the inner side, while the

outer is frequently covered towards the margin with a yellowish somewhat hairy epidermis.

Species 2. (Fig. a, b, Mus. Taylor.)

CREPIDULA PORCELLANA. *Crep. testâ ovalâ, convexâ, solidiusculâ, apice recurvâ et substratâ, albidâ, intus extusque livido-rufo et purpureo lineatâ et radiatum maculatâ; appendice internâ subprofundâ, concavâ, medio sinuatâ.*

THE PORCELAIN CREPIDULA. Shell ovate, convex, rather solid, recurved and slightly beaked at the apex, whitish, stained and radiately spotted within and without with livid-red and purple; internal appendage rather deep, concave, situated in the middle.

LAMARCK, Anim. sans vert. vol. vii. p. 642.

Patella porcellana, Linnæus.

Hab. West Africa.

Mr. Cuming possesses small specimens of this species from West Africa, but there is every reason to believe that it has a far wider range of habitation.

Species 3. (Fig. a, b, Mus. Cuming.)

CREPIDULA DILATATA. *Crep. testâ ovalo-rotundatâ, crassiusculâ, subirregulari, obliquè curvatâ, intus extusque albidâ, livido-fusco ad marginem tinctâ et radiatum lineatâ; appendice internâ concaviusculâ, rotundatâ, ad latus profundè emarginatâ.*

THE DILATED CREPIDULA. Shell ovately rounded, rather thick, somewhat irregular, curved obliquely, whitish within and without, stained and radiately lineated at the margin with livid-brown; internal appendage rather concave, rounded, deeply notched at the side.

LAMARCK, Anim. sans vert. vol. vii. p. 644.

Hab. Straits of Magelhaens and Falkland Islands. Chili; Cuming.

This fine species may be chiefly recognized by its obliquely curved concave form, and livid-brown marginal colouring. It is common of a smaller size.

Species 4. (Fig. a, b, Mus. Cuming.)

CREPIDULA EXCAVATA. *Crep. testâ oblongo-ovalâ, crassiusculâ, subrotundâ, lateraliter compressâ, apice obli-*

quæ incurvâ et rostratâ, intus extusque fulvescente-albâ, purpurâ et rufescente-fusco lineatâ et lineatâ; appendice internâ profundâ, planâ.

THE EXCAVATED CREPIDULA. Shell oblong-ovate, rather thick, somewhat twisted, compressed at the side, obliquely incurved and beaked at the apex, fulvous-white within and without, stained and lineated with purple and reddish-brown; internal appendage deep, flat.

BRODERIP, Trans. Zool. Soc. vol. i. p. 205. pl. 29. f. 7.
Hab. Chili; Cuming.

The lateral compression which gives a somewhat twisted form to this species appears to be natural to it, and not the result of any peculiarity in its place or mode of attachment.

Species 5. (Fig. a, b, Mus. Cuming.)

CREPIDULA SQUAMA. *Crep. testâ subobliquè ovatâ, plano-concavâ, complanatâ, fulvescente-albâ, lineis fusciscentibus radiatim strigatâ; appendice internâ elevatiusculâ, ad latus submarginatâ.*

THE SCALE CREPIDULA. Shell somewhat obliquely ovate, flatly concave, smooth, fulvous-white, radiately streaked

with brownish-red lines; internal appendage rather raised, slightly notched at the side.

BRODERIP, Trans. Zool. Soc. vol. i. p. 205. pl. 29. f. 10.
Hab. Panama; Cuming.

A delicate and well-marked species, rayed outwardly with fine fuscous-red lines from the apex to the margin, where they are lost in a covering of yellowish epidermis.

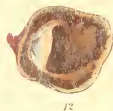
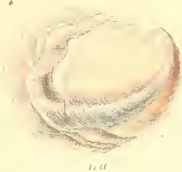
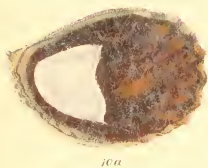
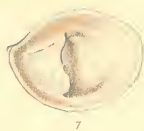
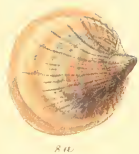
Species 6. (Mus. Cuming.)

CREPIDULA NAUTILOIDES. *Crep. testâ obliquè ovatâ, profundè gibbosâ, tenuiculâ, albidâ, carneo-fusciscentiunctâ et strigatâ; appendice internâ subrotundatâ, convexâ, ad latus emarginatâ.*

THE NAUTILOID CREPIDULA. Shell obliquely ovate, deeply gibbous, rather thin, whitish, stained and streaked with light flesh-brown; internal appendage somewhat round, convex, notched at the side.

LESSON, MS. Mus. Cuming.
Hab. New York.

The species which Mr. Cuming has from New York with the above name, is of the same type of the genus as *C. dilatata*.



CREPIDULA.

PLATE II.

Species 7. (Mus. Cuming.)

CREPIDULA GLAUCA. *Crep. testâ obliquè ovatâ, tenui, concavissimâ, complanatâ, albâ vel glaucescente, naticis saturatoribus interdum aspersâ; appendice internâ parvâ, subprofundâ.*

THE GLAUCOUS CREPIDULA. Shell obliquely ovate, thin, rather convex, smooth, white or glaucous, sometimes sprinkled with dots of a darker colour; internal appendage small, rather deep.

SAY, Journ. Acad. Nat. Sci. Philadelphia, vol. ii. p. 226.
Hab. Rhode Island, United States; Gould.

The shell here figured from Mr. Cuming's collection, without any indication of colour, is not a very satisfactory representation of the species. It is not known to me in its typical state.

Species 8. (Fig. a, b, Mus. Cuming.)

CREPIDULA MARGINALIS. *Crep. testâ ovatâ vel orbiculari, convexâ, interdum planâ, lævigatâ vel subcorrugatâ, flavido-albâ, prope apicem caruleo tinctâ et radiatim lineatâ, intus intesâ purpureo-castaneâ, ad marginem flavidâ et castaneo strigatâ; appendice internâ diaphano-albâ.*

THE MARGINAL CREPIDULA. Shell ovate or orbicular, convex, sometimes flat, smooth or faintly wrinkled, yellowish-white, stained and radiately lineated near the apex with blue, interior deep purple-chestnut, yellowish- and chestnut-streaked at the margin; internal appendage diaphanous-white.

BRODERIP, Trans. Zool. Soc. vol. i. p. 205, pl. 29. f. 9.
Hab. Panama; Cuming.

Well distinguished by its rich internal colouring, upon which the septum has a bluish diaphanous-white appearance.

Species 9. (Fig. a, b, Mus. Cuming.)

CREPIDULA ONYX. *Crep. testâ oblongo-ovatâ, crassiusculâ, intus extusque fuscâ, radii-lineatâ, intus saturatiore, lividâ; appendice subamplâ, planâ, albâ, margine medio emarginatâ.*

THE ONYX CREPIDULA. Shell oblong-ovate, rather thick, brown within and without, rayed with red lines, in-

teriorly darker, livid; appendage rather large, flat, white, edge notched in the middle.

SOBERBY, Genera of Shells, *Crepidula*, f. 2.

Crepidula amygdalus, Valenciennes.

Crepidula Cerithicola, C. B. Adams.

Hab. Panama; Cuming and C. B. Adams. Mazatlan - Carpenter.

This fine species may be easily recognized by its straight oval form and liver-coloured chestnut interior. The septum is of a bright opal-white substance.

Species 10. (Fig. a, b, Mus. Taylor.)

CREPIDULA RUGOSA. *Crep. testâ obliquè ovatâ, verrucis apicem attenuatâ, apice substratâ, extus fuscescente, rufis punctatâ et obliquè lineatâ, intus intesâ castaneâ; appendice opali-albâ, concavissimâ, margine in medio et ad latus subemarginatâ.*

THE ROUGH CREPIDULA. Shell obliquely ovate, attenuated towards the apex, apex slightly beaked, exterior light-brown, dotted and obliquely lineated with red, interior deep-chestnut; appendage opal-white, rather concave, edge slightly notched in the middle and at the side.

NUTTALL, Joy's Catalogue of Shells, p. 41.

Hab. Upper California.

This shell appears to be uniformly distinguished from *C. onyx* by its more obliquely beaked growth. The ribs in the specimen figured are merely occasioned by its having grown on to a ribbed shell, probably a *Pecten*.

Species 11. (Fig. a, b, Mus. Cuming.)

CREPIDULA FIMBRIATA. *Crep. testâ obliquè ovatâ, planâ, apicè lateraliùs incurvâ, concentricè striatâ, versus marginem conspicuè laminito-fimbriatâ, extus intusque pellucido-albâ, ad latus livido-fusco uniradiatâ; appendice ad latus emarginatâ.*

THE FRILLED CREPIDULA. Shell obliquely ovate, flat, laterally incurved at the apex, concentrically striated, conspicuously laminito-frilled towards the margin, transparent-white without and within, stained with a livid-brown ray on one side; appendage notched at the side.

Hab. Vancouver's Straits.

CREPIDULA.—PLATE II.

This fine new species is of pure white substance, marked on one side with a single dark ray, which, seen through the outer coat, has a milky appearance. Towards the margin the shell is developed in irregular fimbriated layers.

Species 12. (Mus. Cuming.)

CREPIDULA ADUNCA. *Crep. testā ovatā, lateraliter pileiformi, apice producto, conspicuè adunco. livido-fusca, extus epidermide indatā: appendice internā, parcius-cutā, albā.*

THE HOOKED CREPIDULA. Shell ovate, laterally cap-

shaped, apex produced, conspicuously hooked, livid-brown, covered outwardly with an epidermis: internal appendage rather small, white.

SOWERBY, Tankerville Catalogue, App. p. 7.

Crepidula solida, Hinds.

Garnotia solida, Gray.

Crepidula rostriformis, Gould.

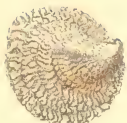
Crepidula uncatu, Mücke.

Hab. Panama.

Of a livid-brown colour, with a rather small white septum, chiefly remarkable on account of the prominent hooked development of the apex.



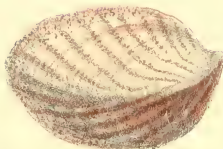
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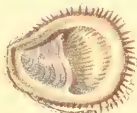
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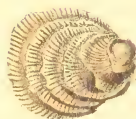
14 b



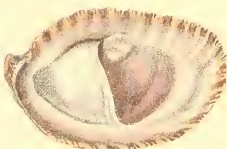
15 a



16 a



16 b



15 b



17 a



17 b



18

CREPIDULA.

PLATE III.

Species 13. (Mus. Cuming.)

CREPIDULA ARENATA. *Crep. testā subobliquē ovatā, laevi, epidermide tenuissimā rorsus marginem undatā, albidd, fusco-rufo creberrimā punctatā, intus carneo-albā; appendice breviusculā, opali-albā.*

THE SANDY CREPIDULA. Shell rather obliquely ovate, smooth, covered towards the margin with a very thin epidermis, whitish, very closely dotted with brown-red, interior flesh-white; appendage rather short, opal-white.

BRODERIP, Trans. Zool. Soc. vol. 1. p. 205. pl. 29. f. 8.
Hab. St. Elena, West Columbia (from sandy mud, on shells, at a depth ranging from six to eight fathoms); Cuming.

Characterized by a sprinkled painting of red dots, and closely allied in this respect to *C. fornicata*. The locality, Island of St. Helena, given by M. Deshayes, is a slip of the pen in copying the Cumingian habitat.

Species 14. (Fig. a, b, Mus. Cuming.)

CREPIDULA FOLIACEA. *Crep. testā suborbiculari, rudē verrucosa-foliaceā, albā, ferruginoso-fusco radiatim strigatā; appendice internā parviusculā, subconcaavā, medio dilatatā.*

THE FOLIACEOUS CREPIDULA. Shell nearly orbicular, rudely wart-leaved, white, radiately streaked with rust-brown; internal appendage rather small, slightly concave, dilated in the middle.

Calyptraea foliacea, Broderip, Trans. Zool. Soc. vol. i. p. 202. pl. 28. f. 9.

Calyptraea strigata, Broderip.

Hab. Shores of Peru (adhering to shells and stones); Cuming.

This species has two well-marked characters, a coating of rudely developed leafy warts, and a faint colouring of rust-brown rays diverging from the umbones, and sometimes leaving a white ray-like hiatus. This last-named state Mr. Broderip named with some doubt *C. strigata*, thinking it might prove to be a variety of *C. dilatata*.

Species 15. (Mus. Cuming.)

CREPIDULA FORNICATA. *Crep. testā suboblongo-ovatā, naviformi, apice incurvā, complanatā, albidd, carneo-*

fusco (dianca) strigatā, intus carneo-albā; appendice opali-albā, subdepressā.

THE ARCHIE CREPIDULA. Shell somewhat oblong-oval, boat-shaped, incurved at the apex; smooth, whitish, divaricately streaked throughout with flesh-brown, interior flesh-white; appendage opal-white, rather depressed.

Potella fornicata, Linnaeus, Syst. Nat. p. 1257.

Hab. United States.

In this fine species the painting is sometimes in dots, especially towards the margin.

Species 16. (Fig. a, b, Mus. Cuming.)

CREPIDULA LESSONII. *Crep. testā obliquē ovatā, subplanatā, undique concentricē laminato-fimbriatā, diaphano-albā, fusco-rufo radiatim lineatā, intus ad marginem fusco-rufo ciliato-strigatā; appendice medio elevatiusculā, ad latus submarginatā.*

LESSON'S CREPIDULA. Shell obliquely ovate, rather flat, concentrically laminae frilled, diaphanous-white, radiately lined with brown-red, hair-streaked round the margin with brown-red; appendage rather raised in the middle, slightly notched at the side.

BRODERIP, Trans. Zool. Soc. vol. i. p. 204. pl. 29. f. 5.

Hab. Island of Muerte, Bay of Guayaquil (under stones, at low-water); Cuming.

This elegant species is constructed in layers, which form a series of concentric laminary frills. It is of a subtransparent white texture, more or less densely rayed with brown-red lines.

Species 17. (Fig. a, b, Mus. Cuming.)

CREPIDULA WALSHI. *Crep. testā transversē ovatā, planulatā, apice obliquē lateraliter incurvā, diaphano-albā; appendice plano-dilatatā, ad latus obsolete inflexā.*

WALSH'S CREPIDULA. Shell transversely ovate, rather flattened, obliquely laterally incurved at the apex, diaphanous-white; appendage flatly dilated, obsoletely inflexed at the side.

HERMANNSON, MS. in Mus. Cuming.

Calyptraea plana, Adams and Reeve (in Moll. Voy. Sumatraang).

June, 1859.

CREPIDULA.—PLATE III.

Hab. Singapore; Cuming. Ceylon; E. H. Layard.

A subtransparent white shell, well characterized by its broadly-ovate form, and by the curious rudiment of a cup in connection with the internal appendage.

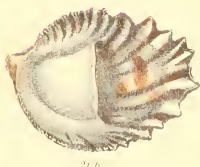
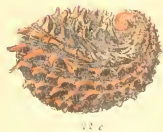
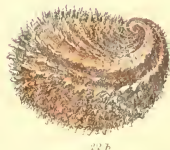
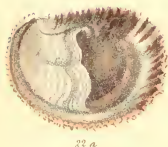
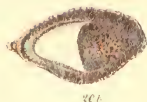
Species 18. (Mus. Cuming.)

CREPIDULA SCABIES. *Crep. testā suborbiculatā, convexā, irregulari, apice non marginali, concentricè plicato-striatā, diaphano-albā, interdum ferrugineo-linctā: appendice internā plano-concavā, ad latus obsoletè inflexā.*

THE SCAB CREPIDULA. Shell somewhat orbicularly convex, irregular, apex not marginal, concentrically plicately striated, diaphanous-white, sometimes stained with rust; internal appendage flatly convex, obsoletely inflected at the side.

Hab. China Seas.

A convex diaphanous shell, presenting a striking irregularity of growth, in which the internal appendage has a flattened inflected fold of even more rudimentary structure than the preceding species.



CREPIDULA.

PLATE IV

Species 19. (Mus. Cuming.)

CREPIDULA APLYSIOIDES. *Crep. testā ovatā, subconcaavā, apice subrostratā, reflexente-cornuā, obscure fusco-radiatā; appendice internā subprofundā, opali-albā.*

THE APLYSIA-LIKE CREPIDULA. Shell ovate, rather concave, slightly beaked at the apex, reddish-horny, obscurely brown-rayed; internal appendage rather deep, opal-white.

Hab. Rio Janeiro; Maegillivray.

A reddish-horny species, looking on the outside curiously like an *Aplysia*.

Species 20. (Fig. a, b, Mus. Cuming.)

CREPIDULA INCURVA. *Crep. testā oblongo-ovatā, tortuoso-convessā, apice aducā, radiatim striatā, purpureo et nigricante lentiginosā; appendice internā opali-albā.*

THE INCURVED CREPIDULA. Shell oblong-ovate, tortuously compressed, hooked at the apex, radiately striated, freckled with purple or blackish; internal appendage opal-white.

BRUGIERI, Pro. Zool. Soc. 1834, p. 40.

Hab. St. Elena and Xipixapi, West Columbia (found on dead shells, dredged from sandy mud, at a depth ranging from six to ten fathoms); Cuming.

The tortuous compression of this shell is the same in all individuals of the species.

Species 21. (Fig. a, b, Mus. Cuming.)

CREPIDULA COSTATA. *Crep. testā ovatā, radiatim costatā, costis distantibus, flexuosis, muricato-tuberculatis, interstitiis striatis; fuscescente-albā, versus marginem purpureo lineatā et lineatā, margine flexuoso; appendice internā subamplicā, opali-albā, concaavā.*

THE RIBBED CREPIDULA. Shell ovate, radiately ribbed, ribs distant, flexuous, prickly-tubercled, inter-stices striated; brownish-white, stained and lined towards the margin with purple, margin flexuous; internal appendage rather large, opal-white, concave.

DESHAYES, Anim. sans vert. vol. vii. p. 644.

Hab. New Zealand.

A fine tubercularly ribbed species, stained and lined towards the margin with purple, which is seen through the opal-white lining of the interior.

Species 22. (Fig. a, b, c, d, Mus. Cuming.)

CREPIDULA ACULEATA. *Crep. testā ovatā, Haliotidiformi, apice lateraliter incurvā, radiatim dense muricato-squamatā, fusco aut purpureo et albo radiatā; appendice internā diaphano-albā, concavissimā, in medio et ad latus submarginatā.*

THE PRICKLY CREPIDULA. Shell ovate, Haliotid-shaped, laterally incurved at the apex, radiately densely prickly-scalded, rayed with brown or purple and white; internal appendage diaphanous-white, rather concave, slightly notched in the middle and at the side.

Patella aculeata, Gmelin, Syst. Nat. p. 3693.

Crepidula aculeata, Lamarck.

Crepidula hystrix, Broderip.

Crepidula echinus, Broderip.

Crepidula Californica, Nuttall.

Hab. Lobos Islands, Peru; Cuming. California; Nuttall, Carpenter. Honduras; Dyson. Sandwich Islands. Australia. Kurrachee, mouth of the Indus.

As Mr. Broderip truly predicted, when describing his *C. hystrix* and *echinus*, these are both varieties of one and the same species, the *Patella aculeata* of Gmelin. Having a widespread geographical range, the specimens vary according to locality. The finest are those from Peru, figured in the accompanying Plate, richly purple-coloured, with the scales frequently produced into erect, tubular spines. From California and the Sandwich Islands the species is smaller, and mostly of a rust-brown colour.

Species 23. (Mus. Cuming.)

CREPIDULA HEPATICA. *Crep. testā ovatā, subprofundē concaavā, lævigatā, apice obliquē rostrato, marginati, intense castaneā, ad apicem minute obirradiatā; appendice internā ampliciter septiformi, concaavā, opali-albā.*

THE LIVER CREPIDULA. Shell ovate, rather deeply convex, smooth, with the apex obliquely beaked and marginal, dark-chestnut, minutely white-rayed at the apex; internal appendage largely septum-shaped, concave, opal-white.

DESHAYES, Enc. Méth. Vers. vol. ii. p. 26.

HINDS, Moll. Voy. Sulphur, p. 53.

Hab. — ?

This species differs from *C. aducua* in having the apex not produced into a hook, while there is a marked difference in the septum, which is much larger, covering quite one-half of the interior of the shell.



25



25 a



25 b



26



27 a



27 b



28



29 a



29 b



30

CREPIDULA.

PLATE V.

Species 24. (Mus. Cuming.)

CREPIDULA ROSTRATA. *Crep. testâ ovatâ, apice producto, rostrato, fuscescente, subpellucidâ, interdum nigropunctatâ; appendice internâ parvâ, diaphano-albâ, subimmersâ.*

THE BEAKED CREPIDULA. Shell ovate, apex produced, beaked, brownish, subtransparent, sometimes black-dotted; internal appendage small, diaphanous-white, rather immersed.

C. B. ADAMS, Panama Shells, p. 235.

Hab. Panama.

Though of the same typical form as *C. adamsi*, this appears to be a distinct species.

Species 25. (Fig. a, b, Mus. Cuming.)

CREPIDULA CONVEXA. *Crep. testâ ovatâ, trunculâ, convexâ, subcompressâ, apice obliquè rostrato, marginali, pallidè fuscescente; appendice internâ parvisculâ, subimmersâ.*

THE CONVEX CREPIDULA. Shell ovate, rather thin, convex, somewhat compressed, apex obliquely beaked, marginal, pale-brown; internal appendage rather small, a little immersed.

SAY, Journ. Acad. Nat. Sci. Philadelphia, vol. ii. p. 227.

Hab. —?

A slightly compressed convex shell, of light transparent substance.

Species 26. (Mus. Cuming.)

CREPIDULA PALLIDA. *Crep. testâ ovatâ, subdilatatâ, apice oblique incurvâ, sordidè albâ; appendice internâ in medio productâ.*

THE PALE CREPIDULA. Shell ovate, somewhat dilated, obliquely incurved at the apex, dead-white; internal appendage produced in the middle.

BRODERIP, Trans. Zool. Soc. vol. i. p. 204. pl. 29. f. 3.

Hab. Falkland Islands.

This is not a satisfactory species, and will, doubtless, prove to be a variety of *C. dilatata*.

Fig. 27. (Mus. Cuming.)

The shell here figured is a specimen of *C. aculeatus*, from the mouth of the Indus, at Kurrachee.

Species 28. (Mus. Cuming.)

CREPIDULA EXVIATA. *Crep. testâ elongato-productâ, angustâ, curvatâ, sordidè albâ; appendice internâ convexâ, diaphano-albâ.*

THE CAST-SKIN CREPIDULA. Shell elongately produced, narrow, curved, dead-white; internal appendage convex, diaphanous-white.

NUTTALL, Jay's Catalogue of Shells, p. 41.

Hab. Monterey, Upper California.

Of a singularly produced growth, narrowly drawn in at the sides, with the diaphanous septum convexly raised in the middle.

Species 29. (Fig. a, b, Mus. Cuming.)

CREPIDULA BILOBATA. *Crep. testâ obliquè orbiculari, apice subrostratâ, tenui, subpellucido-albâ, rufo-scante radiatâ appendice internâ parvisculâ, concavâ, medio productâ.*

THE TWO-LOBED CREPIDULA. Shell obliquely orbicular, slightly beaked at the apex, thin, subtransparent-white, rayed with pale-red; internal appendage rather small, concave, produced in the middle.

GRAY, MS. Mus. Cuming.

Hab. —?

A thin obliquely-grown species, with a septum similar to that of *C. dilatata*.

Species 30. (Mus. Cuming.)

CREPIDULA LIBATA. *Crep. testâ ovatâ, subcompressâ, radiatim corrugato-libatâ, apice marginali, subrostrato; livido-castaneâ, versus apicem ruvente; appendice internâ diaphano-albâ, subconcevâ.*

THE RIDGED CREPIDULA. Shell ovate, rather compressed, radiately wrinkle-ridged, apex marginal, slightly beaked; livid-chestnut, red towards the apex; internal appendage diaphanous-white, rather concave.

Hab. California.

The outer surface of this species, of which I have seen several examples, is characterized by a sculpture of irregular waved radiating ridges, which do not appear to result from having grown upon a ribbed shell. The region of the apex in all the specimens is also peculiar in being of a livid-reddish colour.

CREPIDULA.

	Plate		Species.		Plate	Species.
aculeata (<i>Patella</i>), Gmelin	IV.	×	22	<i>lystris</i> , Broderip	IV.	22
adunca, Sowerby	II.		12	<i>incurva</i> , Broderip	IV.	20
<i>omygdalus</i> , Valenciennes	II.		9	<i>Italica</i> , DeFrance	I.	1
Aplysioides, Reeve	IV.		19	<i>Lessouii</i> , Broderip	III.	16
arvnata, Broderip	III.		13	<i>lirata</i> , Reeve	IV.	30
bilobata, Gray	IV.		29	<i>marginalis</i> , Broderip	II.	8
<i>calceolina</i> , Deshayes	I.		1	<i>Nautiloides</i> , Lesson	I.	6
<i>Californica</i> , Nuttall	IV.		22	<i>oaxa</i> , Sowerby	II.	9
<i>candida</i> , Risso	I.		1	<i>pallida</i> , Broderip	IV.	26
<i>Cerithicola</i> , C. B. Adams	II.		9	<i>plana</i> , Say	I.	1
convexa, Say	IV.		25	<i>porcellana</i> (<i>Patella</i>), Linnaeus	I.	2
costata, Deshayes	IV.		21	<i>rostrata</i> , C. B. Adams	IV.	24
dilatata, Lamarck	I.		3	<i>rostriformis</i> , Gould	II.	12
<i>echinus</i> , Broderip	IV.		22	<i>rugosa</i> , Nuttall	II.	10
excavata, Broderip	I.		4	<i>scabies</i> , Reeve	III.	18
exuviata, Nuttall	IV.		28	<i>sinuosa</i> , Turton	I.	1
fimbriata, Reeve	II.		11	<i>solida</i> , Hinds	II.	12
foliacea (<i>Calyptraea</i>), Broderip	III.		14	<i>squama</i> , Broderip	I.	5
foenicata (<i>Patella</i>), Linnaeus	III.		15	<i>ucata</i> , Menke	II.	12
glauca, Say	II.		7	<i>unguiformis</i> , Lamarck	I.	1
hepatica, Deshayes	IV.		23	<i>Walshi</i> , Hermannson	III.	17

MONOGRAPH

OF THE GENUS

C R U C I B U L U M .

Then shall our names,
Familiar in his mouth as household words,
Be in their flowing cups freshly remembered.

Shakespeare



CRUCIBULUM.

PLATE I.

Genus CRUCIBULUM, Schumacher.

Testa ovata vel orbicularis, nunc depressa nunc convexa, radiatim costata vel lirato-striata, interdum spinosa, vertice serpiasimè subcentrali. Appendix interna cyathiformis, interdum lateraliter compressa.

Shell ovate or orbicular, sometimes depressed, sometimes convex, radiately ribbed or ridge-striated, sometimes spined, with the top mostly near the centre. Internal appendage cup-shaped, sometimes laterally compressed.

This genus, founded in 1817 by the eminent astronomer and naturalist Schumacher, is retained for that section of the Lamarekian *Calyptreae* in which the internal appendage takes the form of a cup, which is sometimes free and sometimes laterally compressed and attached. Concomitant with this there is a marked generic difference in the shell compared with the *Calyptreae* proper. In *Crucibulum* there is no trace of the transparent thread-striated tissue of *Calyptreae*. The shell is larger and much more solidly developed, and generally dark-coloured.

The *Crucibula* eminently belong to the New World. One or two small species have been collected in the Eastern Seas, but all those of mark are from California and the western shores of South and Central America.

Species 1. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM TENUE. *Cruc. testâ elevato-convexâ, irregulari, tenui, subdiaphanâ, creberrimè striatâ, albâ, interdum fusco-rubente pallidè strigatâ; appendice internâ cyathiformi, subamplâ, eburnâ.*

THE THIN CRUCIBULUM. Shell elevatedly convex, irregular, thin, subdiaphanous, very closely striated, whitish, sometimes faintly streaked with fuscous-red; internal appendage cup-shaped, rather large, ivory-white.

Calyptrea tenuis, Broderip, Trans. Zool. Soc. vol. i. p. 199. pl. 27. f. 9.

Hab. Peru.

A light shell, of very irregular growth, mostly painted with rather faint, promiscuously diversicating, fuscous-red streaks.

Species 2. (Fig. a, b, c, Mus. Cuming.)

CRUCIBULUM SCUTELLATUM. *Cruc. testâ ovatâ vel orbic-*

ulari, subdepressâ, radiatim fortiter rugoso-costatâ costis striatis, interstitiis subobsolete imbricatâ-fewstratis, livido-cinereâ vel fuscâ, variè marmoratâ, punctis linearibus rufo-fuscis interdum pictâ, vertice lateraliter subcompresso, uncinatâ; appendice internâ cyathiformâ, peramplâ, eburnâ, interdum fusco marginatâ.

THE SHIELD-LIKE CRUCIBULUM. Shell ovate or orbicular, rather depressed, radiately strongly wrinkle-ribbed, ribs striated, interstices rather obsoletely imbricately latticed, livid-ash or brown, variously mottled, sometimes painted with linear red-brown dots, top laterally rather compressed, hooked; internal appendage cup-shaped, very large, ivory-white, sometimes edged with brown.

Patella scutellata, Gray in Wood Ind. Test. Supp. pl. 8. f. 4. (*Calyptrea rugosa*, Lesson.)

Calyptrea imbricata, Sowerby (not of Broderip).

Hab. Puyto, Peru; Lesson. Punta, St. Elena, West Columbia; Cuming.

The typical state of the ribs of this species is, to be rather spread and longitudinally striated, sprinkled with linear red-brown colouring, but these characters soon become roughened or obsolete with age.

Species 3. (Fig. a, b, Mus. Cuming.)

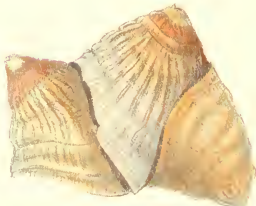
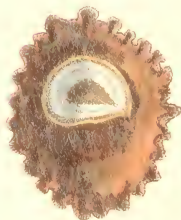
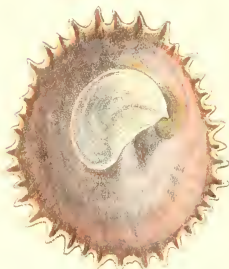
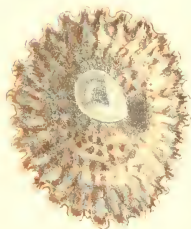
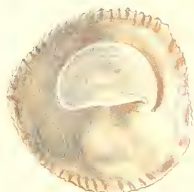
CRUCIBULUM TRIGONALE. *Cruc. testâ trigono-ovatâ, crassâ, profundè convexâ, lævigatâ, versus marginem plicato-corrugatâ, albâ, fusco-rubente variè strigatâ, vertice acutè uncinatâ; appendice internâ cyathiformi, peramplâ, eburnâ.*

THE TRIANGULAR CRUCIBULUM. Shell triangularly ovate, thick, deeply convex, smooth, plicately wrinkled towards the margin, white, variously streaked with fuscous-red, top sharply hooked; internal appendage cup-shaped, very large, ivory-white.

Calyptrea trigonalis, Adams and Reeve, Moll. Voy. Samarang, p. 70. pl. 9. f. 7 a, b.

Hab. China Sens.

The principal distinguishing features of this species are its triangular compression, which is alike in all specimens, and not occasioned by any particular circumstances of attachment, and its plicately wrinkled margin, streaked with fuscous-red as in *C. tenue*.



CRUCIBULUM.

PLATE II.

Species 4. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM RUGOSUM. *Cruc. testâ elevato-coniçâ, pileiformi, subregulari, rugoso-corrugatâ et striatâ, albâ, fulvo-rubente strigatâ et dicaricatum lineatâ, vertice postico, obliquè elato, subobtusè uncinato; appendice internâ cyathiformi, peramplâ.*

THE ROUGH CRUCIBULUM. Shell elevately conical, cap-shaped, rather roughly wrinkled and striated, whitish, streaked and divaricately lined with fulvous-red, top posterior, obliquely raised, rather obtusely hooked; internal appendage cup-shaped, very large.

Calyptrea rugosa, Deshayes (not of Lesson); *Anim. sans vert.* vol. vii. p. 637.

Calyptrea ignaria, Broderip.

An var.? *Calyptrea gemmacea*, Valenciennes.

Hab. Island of Chiloe; Cuming.

Chiefly remarkable for its elevated cap-shaped. Fig. 4 b represents the habit of this species to attach one upon another.

Species 5. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM FERRUGINEUM. *Cruc. testâ suborbiculari, elatâ, versus verticem attenuatâ, levigatâ, versus marginem rugosâ, albâ, ferrugineo-rubente tinctâ et strigatâ, vertice subcentrali; appendice internâ cyathiformi, peramplâ, obtusâ.*

THE RUSTY CRUCIBULUM. Shell nearly orbicular, raised, attenuated towards the top, smooth, roughened towards the margin, whitish, stained and streaked with rust-red, top nearly central; internal appendage cup-shaped, very large, ivory-white.

Hab. Bay of Concepcion, Chili; Cuming.

The form of this species is that of a regular attenuated cone, and it is painted with rust-red in a manner to stain through to the interior round the margin.

Species 6. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM UMBRELLA. *Cruc. testâ ovatâ, irregulari, subdepressâ, radiatim costatâ, costis subacutè angulatis, ad extremitates uniconatis, purpurascens-fuscè, lividâ, vertice subobsoleto; appendice internâ cyathiformi, amplâ, hyalino-albâ.*

THE UMBRELLA CRUCIBULUM. Shell ovate, irregular, rather depressed, radiately ribbed, ribs rather sharply angled, pointed at the extremities, purple-brown, livid, top nearly obsolete; internal appendage cup-shaped, large, hyaline, white.

Calyptrea umbrella, Deshayes, *Enc. Méth. Fers.* vol. ii. p. 173. n. 8.

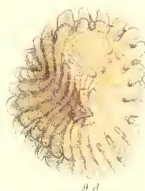
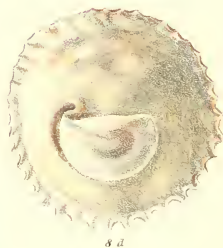
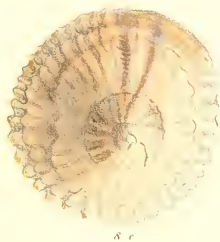
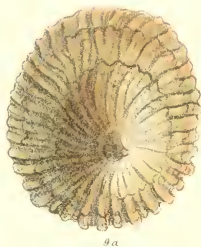
Calyptrea rudis, Broderip, *Trans. Zool. Soc. vol. i.* p. 196. pl. 27. f. 1.

Hab. Panama and Real Lliejos; Cuming.

Distinguished from *C. scutellatum*, to which it is very nearly allied, by the sharply angular development of the ribs.

Fig. 1 d, e, f, g. (Mus. Cuming.)

These specimens are figured to illustrate further varieties of *C. scutellatum*, described at Plate I, having the ribs more spread and more grooved and red-dotted.



CRUCIBULUM.

PLATE III.

Fig. 7, *b*. (Mus. Cuming.)

This shell appears to be a specimen of *C. tenue*, in finer condition than the Broderipian type figured in Plate I. The vertex being free from any decortication is, though central, twisted obliquely, and sharply hooked, and the shell is more strongly sculptured with close-set, ridge-like striae.

Species 8. (Fig. 8 *a*, 8 *b*, 9 *a*, 9 *b*, Mus. Cuming.)

CRUCIBULUM CORRUGATUM. *Cruc. testā orbiculari vel ovatā, elevato-convexā, vertice lateraliter compresso, radiatim costatā, costis peculiariter flexuoso-rugatis, albidā aut livido-fuscā; appendice internā amplā, eburnā.*

THE WRINKLED CRUCIBULUM. Shell orbicular or ovate, elevately convex, top laterally compressed, radiately ribbed, ribs peculiarly flexuously wrinkled, white or livid-brown; internal appendage large, ivory-white.

CARPENTER, Pro. Zool. Soc. 1856, p. 204.

Hab. California.

There is a strong peculiarity in the ribs of this species. They have a flexuously wrinkled shrivelled appearance, and

a new rib commences about halfway down in the interstices between those that spring from the top.

Species 9. (Fig. 8 *c*, 8 *d*, 9 *c*, 9 *d*, Mus. Cuming.)

CRUCIBULUM IMBRICATUM. *Cruc. testā orbiculari vel ovatā, subelevato-convexā, obliquè radiatim costatā, costis fortibus, subflexuosis, vertice acuto, lateraliter compresso, albidā, fusco-rubente interdum strigatā; appendice internā cyathiformi, amplā.*

THE IMBRICATED CRUCIBULUM. Shell orbicular or ovate, rather elevately convex, obliquely radiately ribbed, ribs strong, rather flexuous, top sharp, laterally compressed, whitish, sometimes streaked with brown-red; internal appendage cup-shaped, large.

Calyptrea imbricata, Broderip, Trans. Zool. Soc. vol. i. p. 198. pl. 27. f. 7.

Hab. Panama (on stones in sandy mud at a depth of from six to ten fathoms); Cuming.

The ribs are much more strongly developed than in the preceding species, and have an oblique inclination over the margin.



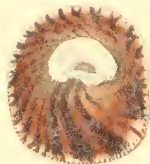
10 b



10 a



10 c



10 e



10 d



10 f



10 g



10 h



10 k



10 i

CRUCIBULUM.

PLATE IV.

Species 10. (Fig. a to k, Mus. Cuming.)

CRUCIBULUM SPINOSUM. *Cruc. testâ orbiculari, interdum subquadrato-ovata, nunc solidiusculâ, convexâ, nunc depressâ, tuniculâ, radiatim lincatâ et irregulariter corrugato-striatâ, tubulo-spinosâ, interdum autem raro iærni, vertice subcentrali, obliquè contorto; lividâ aut lutescente-albâ, purpureo contorto-radiatâ, intus intensè cinereâ vel albâ; appendice internâ cyathiformi, amplâ, lateraliter compressâ, crystallino-albâ, medio interdum cinereâ.*

THE SPINED CRUCIBULUM. Shell orbicular, sometimes squarely ovate, rather solid and convex, or depressed and rather thin, radiately ridged and irregularly wrinkle-striated, generally tube-spined, sometimes, but rarely, without spines, vertex nearly central, obliquely twisted; livid or yellowish-white, twistedly rayed with purple, interior dark-ash or white; internal appendage cup-shaped, large, laterally compressed, crystalline-white, sometimes ash-stained in the middle.

Calyptrea spinosa, Sowerby, Genera of Shells, f. 6.

Calyptrea Peziza, Gray.

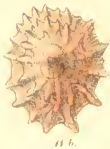
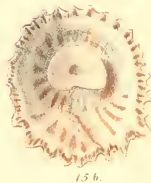
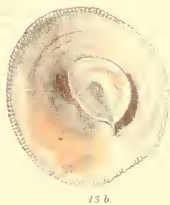
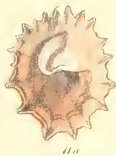
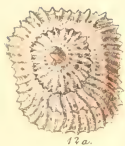
Varieties. *Calyptrea hispida* and *maculata*, Broderip.

Calyptrea tubifera, Lesson.

Calyptrea cinereo, Mihi.

Hab. Seas of Central America.

It has been necessary to devote an entire Plate to the illustration of this extremely variable species. To commence with the most highly spined state of it, the specimen represented at Fig. 10 a affords a remarkable instance. In this depressed shell, extracted by Mr. Cuming from a hollow in a large stone hauled up from deep water, the spines are comparatively distant and promiscuous, standing up in the form of erect or slightly recurved tubes. In Fig. 10 d the shell is more convex or limpet-like, and the spines are in direct radiating ridges. In Fig. 10 k the shell is equally convex with the spines, more numerous and tubular, surrounded with a plentiful sprouting of smaller scale-like spines; while in Fig. 10 g (*C. cinerea*, Mihi, in Conch. Syst.), the spines and scales are becoming obsolete, and the shell is rounder, and of a more irregularly depressed growth. In the shells represented at Fig. 10 e and 10 f the scale-ribs disappear, and the wrinkled striae become conspicuous, the twisted-rayed purple colouring, of which there are indications in the preceding varieties, are here more revealed to view, and there are traces of a few scattered spines, more or less obsolete. The specimen Fig. 10 h and 10 i presents a link with the Broderipian *C. hispida* and *maculata*, at Fig. 10 c and 10 b. The former is characterized by its delicate structure, in which the spines are also delicate, like fine prickles, and the latter is peculiar in having the purple rays more or less broken up into spots.



CRUCIBULUM.

PLATE V.

Species 11. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM PECTINATUM. *Cruc. testâ ovalâ, subpeltiformi, vertice acuto, prominente, subincurvâ, radiatum valdè costatâ, costis distantibus, concentricè acutè imbricatis, ad marginem mucronatis; spadicero-lactèâ; appendice internâ ampliâ, latè trijougâ, cyathiformi, ad latus affixâ.*

THE PECTINATED CRUCIBULUM. Shell ovate, somewhat cup-shaped, top sharp, prominent, slightly incurved, radiately strongly ribbed, ribs distant, concentrically sharply imbricated, pointed at the margin; fawn-cream-colour; internal appendage large, broadly triangular, cup-shaped, affixed to the side.

CARPENTER, Pro. Zool. Soc. 1856, p. 168.

Hab. Peru.

Chiefly distinguished by its broadly imbricated ribs, the ends of which project conspicuously over the margin.

Species 12. (Fig. 12 a, b, Mus. Cuming.)

CRUCIBULUM VIOLACEUM. *Cruc. testâ subquadrato-ovalâ, irregulari, radiatum costatâ, costis interruptis, rudè undato-corrugatis, valdè irregularibus, vertice acuto, depressiusculo; albidd, punctis rufo-fuscis plus minus lentiginosis, intus violacèâ; appendice internâ albâ, cyathiformi, latiusculâ, subcentrali.*

THE VIOLET CRUCIBULUM. Shell somewhat squarely ovate, irregular, radiately ribbed, ribs interrupted, rudely wave-wrinkled, very irregular, top sharp, rather depressed; whitish, more or less freckled with red-brown dots, interior violet; internal appendage white, cup-shaped, rather broad, nearly central.

CARPENTER, Pro. Zool. Soc. 1856, p. 167.

Hab. Ceylon; Capt. Templeton.

The few specimens known of this species in the Cumingian collection, brought from Ceylon by Captain Templeton, are all coloured in the interior by a delicate rose-violet, a character which is at present unique.

Species 13. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM SPECTRUM. *Cruc. testâ orbiculari, depressiusculâ, incrassatâ, vertice centrali, subobtusâ; opacè albâ, radiatum decussatum corrugato-striatâ; appendice internâ ampliâ, latè cyathiformi.*

THE SPECTRE CRUCIBULUM. Shell orbicular, rather depressed, thick, top central, rather obtuse; opaque-

white, radiately decussately wrinkle-striated; internal appendage large, broadly cup-shaped.

Hab. Malacca.

A round opaque-white shield of simple structure, having the surface carved, particularly towards the margin, with irregularly decussating wrinkle-like striae.

Species 14. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM EXTINGUORIUM. *Cruc. testâ subquadrato-ovalâ, tenui, subcurvâ, pellucidâ, depressiusculâ, vertice conico, centrali; lutescente, livido-purpurascente obscurè concolorato-radiatâ, lineisque ruflis obliquis pallidis tinctâ; appendice internâ compresso-crispatâ, ad latus affixâ.*

THE EXTINGUISHER CRUCIBULUM. Shell somewhat squarely ovate, thin, rather horny, transparent, somewhat depressed, top conical, central; yellowish, obscurely twisted-rayed with livid-purple, and stained with oblique faint red lines; internal appendage compressly curled, affixed to the side.

Calyptrea extingtorium, Lamarck, Anim. sans vert. vol. vii. p. 622.

Hab. Malacca; Cuming.

A somewhat horny shell, in which there are traces of radiating purple and oblique red lines.

Species 15. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM AURICULATUM. *Cruc. testâ suborbiculari, depressâ, radiatum costatâ, costis obtusis, irregularibus, interdum divergentibus vel interruptis, vertice subacuto, depressiusculo; albidd, punctis et lineis rufo-fuscis promiscuè adpersâ; appendice internâ cyathiformi, latiusculâ, subcentrali.*

THE AURICULATED CRUCIBULUM. Shell somewhat orbicular, rather depressed, radiately ribbed, ribs obtuse, irregular, sometimes divergent or interrupted, top rather sharp, a little depressed; whitish, promiscuously sprinkled with red-brown dots and lines; internal appendage cup-shaped, rather broad, nearly central.

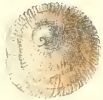
Patella auriculata, Chemnitz, Conch. Cab. vol. x. p. 336. pl. 168 f. 1628, 1629.

Hab. Cumanâ; and Island of St. Thomas, West Indies.

The ribs in this species are not unlike those of *C. violaceum*, and the freckle of red-brown dots is similar, but the colouring is darker, and is seen within the margin, while there is no indication of rose-violet in the interior.



16a



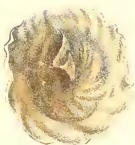
17a



17b



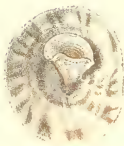
18a



19a



19b



20a



21a



21b



22a

CRUCIBULUM.

PLATE VI.

Species 16. (Fig. *a, b*, Mus. Cuming.)

CRUCIBULUM STRIATUM. *Cruc. testā orbiculari, pileiformi, vertice conoideo rostrato; sordidē fusciscente, radiatum striatā, striis subamplis, distantibus, concentricē obsolete fimbriatis; appendice internā latē patulā, ad latus affixā.*

THE STRIATED CRUCIBULUM. Shell orbicular, cap-shaped, top conoid, beaked; dirty light-brown, radiately striated; striae rather large, distant, concentrically obsolete frilled; internal appendage broadly open, affixed to the side.

Calyptraea striata, Say, Journ. Acad. Nat. Sci. Phil. vol. v. p. 216.

Hab. ———?

A conoid cap-shaped shell in which the radiating striae are rather large and distant, arranged almost in concentric frills.

Species 17. (Fig. *a, b*, Mus. Cuming.)

CRUCIBULUM AURITUM. *Cruc. testā orbiculari, depressiusculā, convexā, vertice obtuso, radiatum densē striatā, striis corrugatis, irregularibus; sordidē fusciscente; appendice internā ovulā, auriformi, patulā, submarginali, ad latus affixā.*

THE EARED CRUCIBULUM. Shell orbicular, rather depressed, convex, top obtuse, radiately densely striated, striae wrinkled, irregular; dirty light-brown; internal appendix large, ear-shaped, open, almost marginal, affixed to the side.

Calyptraea striata, Broderip (not of Say), Pro. Zool. Soc. 1834, p. 38.

Hab. Valparaiso (on shells dredged from sandy mud at a depth of from forty-five to sixty fathoms); Cuming.

This species is less conoid than *C. striata*, Say, and differently striated. The internal appendage reaches nearly to the margin.

Species 18. (Fig. *a, b*, Mus. Cuming.)

CRUCIBULUM RADIATUM. *Cruc. testā conico-orbiculari,*

albā, fusco-rufescente radiatā, vertice acuto, costaneo tincto, punctato, radiatum striatā et creberrimē tenuilinatā; appendice internā cyathiformi, productā, lateraliter concavo-compressā.

THE RAYED CRUCIBULUM. Shell conically orbicular, white, rayed with fuscous-red, top sharp, stained and dotted with chestnut, radiately striated and very closely finely ridged; internal appendix cup-shaped, produced, concavely compressed on one side.

Calyptraea radiata, Broderip, Pro. Zool. Soc. 1834, p. 36.

Hab. Bay of Caraccas.

The internal cup-shaped appendage of this species is quite peculiar. "It is pressed in, as it were," as described by Mr. Broderip, "on one side, and adheres to the shell not only by its apex, but also by a lateral seam, which scarcely reaches to the rim of the cup."

Species 19. (Fig. *a, b*, Mus. Cuming.)

CRUCIBULUM VERRUCOSUM. *Cruc. testā orbiculari, medio conicā, vertice centrali, subaamillari, lutescente-lactesā, subopacā, levigatā, versus marginem peculiariter corrugato-verrucosā; appendice internā angustē cyathiformi, compressā, ad latus affixā.*

THE WARTY CRUCIBULUM. Shell orbicular, conical in the middle, top central, somewhat mamillary, yellowish cream colour, rather opaque, smooth, peculiarly wrinkle-warty towards the margin; internal appendix narrowly cup-shaped, compressed, affixed to the side.

Hab. ———?

Distinguished by a peculiar wart-like sculpture of very irregular but conspicuous development.

Fig. 20. (Fig. *a, b*, Mus. Cuming.)

This shell is presented as an illustration of the elevated conical form of *C. extinctoriana*, described in the preceding Plate, as figured by De Blainville in his 'Manuel de Malacologie,' pl. 48. f. 8.

Crucibulum Pl. VII.



21a



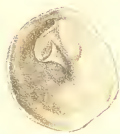
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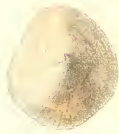
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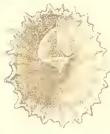
23a



24a



24b



25a



26a



26b



27a

CRUCIBULUM.

PLATE VII.

Species 21. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM SERRATUM. *Cruc. testâ suborbiculari, tenui, depressâ, pellucido-albâ, purpureo-castaneo interdum maculatâ et uniradiatâ, radiatum costatâ, costis prominentibus, interstitiis decussatis rugosis, margine serrato, vertice acuto; appendice internâ vic cyathiformi, lateraliter valdè compressâ.*

THE SERRATED CRUCIBULUM. Shell somewhat orbicular, thin, depressed, transparent white, sometimes spotted and one-rayed with purple chestnut, radiately ribbed; ribs prominent, with the interstices decussately wrinkled, margin serrated, top sharp; internal appendage scarcely cup-shaped, laterally very compressed.

Calyptrea serrata, Broderip, Pro. Zool. Soc. 1834, p. 37.

Hab. Real Lléjos and Muerte, Central America (found on dead shells in a muddy bottom at a depth of from six to eleven fathoms); Cuming.

A thin semi-transparent white shell very conspicuously ribbed, usually characterized by a single dark ray of purple-chestnut.

Species 22. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM SORDIDUM. *Cruc. testâ subconicâ, sordidè luteâ, intus cinereo-fusâ, subradiatâ, vertice subtrihinato; appendice internâ subtrigono-compressâ, crystallino-albâ.*

THE SORDID CRUCIBULUM. Shell subconical, sordid yellow, ash-brown within, faintly rayed, top slightly turbinate; internal appendage somewhat triangularly compressed, crystalline-white.

Calyptrea sordida, Broderip, Pro. Zool. Soc. 1834, p. 37.

Eadem var. *Calyptrea unguis*, Broderip.

Hab. Valparaiso and Panama (found on stones and shells); Cuming.

A small cap-shaped species of a yellowish ash-brown colour in the interior, with a laterally compressed crystalline appendage. The shell represented at Fig. 22 b is Mr. Broderip's *Calyptrea unguis*.

Species 23. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM CONCAMERATUM. *Cruc. testâ pileiformi, vertice acuto, valdè incurvo, albâ, radiatum costatâ,*

costis prominentibus, interstitiis undique profundè concameratis; appendice internâ subcyathiformi, ampliâ, ad latus affixâ.

THE VAULTED CRUCIBULUM. Shell cap-shaped, top sharp, very much incurved, whitish, radiately ribbed, ribs prominent, with the interstices everywhere deeply vaulted; internal appendage somewhat cup-shaped, large, affixed to the side.

Hab. ———?

This remarkable shell, collected by Sir Edward Belcher in the Samarang, but omitted in the 'Zoology' of the voyage, is curiously chambered into deep vaults. The ribs are very prominent, and the interstices between them are crossed throughout by broad septa.

Species 24. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM MORBIDUM. *Cruc. testâ orbiculari, pileiformi, vertice erecto, centrali, subpellucidè albâ, concentricè rugoso-striatâ, maculis rufis promiscuis tenuisque numerosis interruptis pallidè pictâ; appendice internâ compressè cyathiformi, ad latus affixâ.*

THE DISEASED CRUCIBULUM. Shell orbicular, cap-shaped, top erect, central, semi-transparent white, concentrically wrinkle-striated, faintly painted with promiscuous red spots and numerous interrupted red lines; internal appendage compressly cup-shaped, fixed to the side.

Hab. China Seas.

The faint red painting noticed in the above description, and which does not appear in the specimen figured, is very characteristic of the species.

Species 25. (Fig. a, b, Mus. Cuming.)

CRUCIBULUM LIVIDUM. *Cruc. testâ pileiformi, subirregulari, tenui, livido-fuscâ, lineis rufis tenuissimis decussatis pictâ; appendice internâ compressè cyathiformi, ad latus affixâ.*

THE LIVID CRUCIBULUM. Shell cap-shaped, rather irregular, thin, livid-brown, decussately painted with very fine red lines; internal appendage compressly cup-shaped, fixed to the side.

Hab. China Seas.

Very like the preceding species but of more irregular growth, and of a peculiarly livid colour on the fine red-line painting strongly marked at the margin.

CRUCIBULUM.

	Plate.	Species.		Plate.	Species.
auriculatum (<i>Patella</i>), Chemnitz	V.	15	serratum, (<i>Calyp.</i>), Broderip	VII.	21
auritum, <i>Reeve</i>	VI.	17	scutellatum (<i>Calyp.</i>), Gray	I.	1
concameratum, <i>Reeve</i>	VII.	23	sordidum (<i>Calyp.</i>), Broderip	VII.	22
corrugatum, <i>Carpenter</i>	III.	8	spectrum, <i>Reeve</i>	V.	13
extinctorium, <i>Lamarck</i>	V.	14	spinosum (<i>Calyp.</i>), Sowerby	IV.	10
ferugineum, <i>Reeve</i>	II.	5	striatum (<i>Calyp.</i>), Say	VI.	16
imbricatum (<i>Calyp.</i>), Broderip	III.	9	tenuis (<i>Calyp.</i>), Broderip	I.	2
lividum, <i>Reeve</i>	VII.	25	trigonale (<i>Calyp.</i>), Ad. and Reeve	I.	3
morbidum, <i>Reeve</i>	VII.	24	umbrella (<i>Calyp.</i>), Deshayes	II.	6
pectinatum, <i>Carpenter</i>	V.	11	verrucosum, <i>Reeve</i>	VI.	19
radiatum (<i>Calyp.</i>), Broderip	VI.	18	violaceum, <i>Carpenter</i>	V.	12
rugosum (<i>Calyp.</i>), Deshayes	II.	4			

ERRATUM.

Plate I.—The descriptions of Species 1 and 2 should be transposed.

MONOGRAPH

OF THE GENUS

T R O C H I T A.

Yet never night nor day unhallowed pass,
But still remember what the Lord has done."

Shakespeare



TROCHITA.

PLATE I.

Genus TROCHITA, *Schumacher*.

Troch. conica, subradium subspiralis. Appendix interna nunc lateralis, effusa, nunc trochoidea, ad marginem producta.

Shell conical, sometimes subspiral. Internal appendage somewhat lateral and effused, sometimes trochoid, reaching to the margin.

After assigning to the genera *Calyptrea*, *Crucibulum*, and *Crepidula* the members of this family respectively characterized by the presence of a basal plate, by a central cup, and by a transverse septum, there remain about fifteen species, in which the internal appendage assumes a spiral septum or trochoid form. For these Professor Schumacher founded the genus *Trochita*. In some, as in *T. radians*, *spirata*, and *egypciolum*, the internal appendage reaches to the margin; in others, as in *T. conica*, *subreflexa*, and *Sinuensis*, the appendage is comparatively small, lateral, and effused. These last constitute Dr. Gray's genus *Galerus*.

The western coasts of South and Central America and New Holland are the principal habitats of the genus. One species is found in Britain, but only on the southern shores.

Species 1. (Fig. a, b, Mus. Cuming.)

TROCHITA POCULUM. *Troch. testâ orbiculari, pileiformi, vertice elato; albâ; appendice internâ spiritaliter septiformi.*

THE LITTLE-CUP TROCHITA. Shell orbicular, cup-shaped, vertex raised; white internal appendage spirally septum-shaped.

Hab. Valparaiso; Cuming.

A small, rounded, cap-shaped species, distinct in form from any of those described by Mr. Broderip. The outer surface is covered with a parasitic coralline.

Species 2. (Mus. Cuming.)

TROCHITA PELLUCIDA. *Troch. testâ orbiculari, depressiusculâ, subtiliter concentricè striatâ, vertice centrali; albâ, pellucidâ; appendice internâ subdepresso-septiformi.*

THE TRANSPARENT TROCHITA. Shell orbicular, rather depressed, finely concentrically striated, vertex central; livid-white, transparent; internal appendage rather depressly septum-shaped.

Hab. Philippine Islands; Cuming.

A small, livid, transparent species, rather depressed.

Species 3. (Fig. a, b, Mus. Cuming.)

TROCHITA RADIANUS. *Troch. testâ orbiculari, subdepressâ, costis subnodulosis undique radiatâ; albâ, intus interdum castaneo-nigro lineatâ, extus epidermide intestente fibrôsâ indatâ; subtus concavâ, appendice internâ peramplâ, Trochiformi.*

THE RADIATING TROCHITA. Shell orbicular, rather depressed, rayed throughout with slightly nodulous ribs; whitish, sometimes stained within with chestnut-black, covered without with a yellowish fibrous epidermis; concave beneath, internal appendage very large, Trochus-shaped.

Crepidula radians, Aum. sans vert. vol. vii. p. 626.

Trochus radians, Lamarck.

Infundibulum radians, Sowerby.

Calyptrea Peruviana, Deshayes.

Testa juvenis, *Trochita ventricosa*, Carpenter.

Hab. Valparaiso; Cuming.

This species, described originally by Martini, among others of the group, without any specific name, under the general head of *Lepas*, was placed by Lamarck in his genus *Trochus*. M. Deshayes was the first to perceive its true affinities.

Species 4. (Fig. a, b, Mus. Cuming.)

TROCHITA ASPERSA. *Troch. testâ orbiculari, tenuiculâ, concentricè tenuistriatâ, vertice subspirali; pellucidâ, albâ, intus rufâ maculatâ; appendice internâ laterali, appressâ effusâ.*

THE SPRINKLED TROCHITA. Shell orbicular, rather thin, concentrically finely striated, vertex somewhat spiral; transparent-white, spotted within with red; internal appendage lateral, appressly effused.

C. B. ADAMS, Ann. Lyceum Nat. Hist. vol. v. p. 443.

Hab. Panama (under stones, at low water-mark); C. B. Adams.

Of semitransparent substance, conspicuously painted in the interior with red spots; but of a somewhat fainter and less clouded character than those in *T. conica*.

Species 5. (Fig. a, b, Mus. Cuming.)

TROCHITA SINENSIS. *Troch. testā orbiculari, depresso-conicā, extus tenuisquamosā, squamis saepe obsolete, intus laevigatā, nitente; pellucida-albā; appendice internā laterali, appressè effusā.*

THE CHINESE TROCHITA. Shell orbicular, depressly conical, finely scaled externally, scales often obsolete; smooth and shining internally; transparent-white; internal appendage lateral, appressly effused.

Patella Chinensis, Linnaeus, Syst. Nat. p. 1275.

Patella Sinensis, Gmelin.

Trochita Chinensis, Schumacher.

Patella alba, Donovan.

Calyptrea Chinensis, Fleming.

Calyptrea laevigata, Lamarek.

Calyptrea Sinensis, Deshayes.

Patella auricata, Da Costa.

Patella vulgaris, Philippi.

Hab. Southern shores of Britain, the Channel Islands, and the Mediterranean.

Excepting *Pileopsis Hungaricus*, this is the only British species of the family *Calyptreae*. It is peculiar in being finely scaled, but the scales become more or less obsolete with age.



6 a



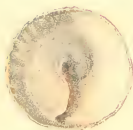
7 a



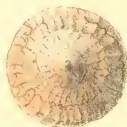
7 b



8 a



9 a



9 b



10 a



10 b



11 a



11 b

TROCHITA.

PLATE II.

Species 6. (Fig. a, b, Mus. Cuming.)

TROCHITA LICHEN. *Troch. testâ depressâ, concentricè rudè plicatâ, lævigatâ; albâ, subdiaphanâ, obscurè fusco-rufo punctatâ et lineatâ; appendice internâ laterali, appressè effusâ.*

THE LICHEN TROCHITA. Shell depressed, concentrically rudely plicated, smooth; white, subdiaphanous, obscurely dotted and lined with brown-red; internal appendage lateral, appressly effused.

Calyptrea lichen, Broderip, Pro. Zool. Soc. 1834, p. 37.

Hab. Island of Muerte (found on dead shells, in sandy mud, at a depth of eleven fathoms); Cuming.

This little species would seem to be the representative of our European *T. Siuensis*. It is of the same typical character, and very closely allied to it in species.

Species 7. (Fig. a, b, Mus. Cuming.)

TROCHITA SUBREFLEXA. *Troch. testâ obtusè convexâ, concentricè irregulariter plicatâ, undique promiscuè acutè spinoso-spinulatâ, apice spirâliter mamillari; pelliculo-albâ, ferrugineo-rufo tinctâ; appendice internâ laterali, appressè effusâ.*

THE SUBREFLECTED TROCHITA. Shell obtusely convex, concentrically irregularly plicated, everywhere promiscuously minutely spine-scaled, apex spirally mamillary; transparent-white, stained with rust-red; internal appendage lateral, appressly effused.

CARPENTER, MS. in Mus. Cuming.

Hab. Gulf of California.

Of an irregular globosely convex form, finely spine-scaled throughout, stained towards the margin with a characteristic transparent rust-red.

Species 8. (Fig. a, b, Mus. Cuming.)

TROCHITA SPIRATA. *Troch. testâ subgloboso-conicâ, costis rotatis longitudo-limbalibus, subnodosis, distantibus undique plicatâ, subtus concavâ; purpureo-cinereo et castaneo cinctâ; appendice internâ perimplâ, trochiformi.*

THE SPIRAL TROCHITA. Shell somewhat globosely conic, plicated throughout with slightly noded distant strong longitudinal ribs, concave beneath; stained with purple-ash and chestnut; internal appendage very large, trochiform.

Calyptrea spirata, Forbes, Pro. Zool. Soc. 1850, p. 27^h. pl. 11. f. 1 a, b.

Patella trochiformis? Chemnitz.

Hab. Gulf of California.

This fine species may be chiefly recognized from its congener *T. radians* by its dark purple-ash and chestnut colouring. It is also, in its typical state, more globosely conical.

Species 9. (Fig. a, b, Mus. Cuming.)

TROCHITA CORRUGATA. *Troch. testâ orbiculari-conicâ, pileiformi, exlus radiatim corrugato-lineatâ, intus concavâ, appendice spirâliter septiformi; albâ, ferrugineo vir tinctâ.*

THE WRINKLED TROCHITA. Shell orbicularly conical, cap-shaped, externally radiately wrinkle-ridged, concave within, the appendage being spirally septum-shaped; whitish, slightly tinged with rust.

Hab. Callao, Peru; Cuming.

The internal appendage of this species is of the same spiral septum-shaped structure as in *T. radians*, but the shell is more deeply concave.

Species 10. (Fig. a, b, Mus. Cuming.)

TROCHITA SOLIDA. *Troch. testâ conicâ, crassiusculâ, concentricè rudè striatâ; calcareo-albâ, apice purpurâ, intus fusco-purpurâ; appendice laterali, diaphanâ, appressè effusâ.*

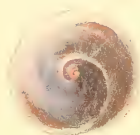
THE SOLID TROCHITA. Shell conic, rather thick, concentrically rudely striated; chalk-white, purple at the apex, brown-purple within; appendage lateral, diaphanous, appressly effused.

Hab. Conchagua, Central America.

A solid, conical, chalk-white species, with a purple apex, brown-purple in the interior, with a bright, diaphanous-white, lateral appendage.



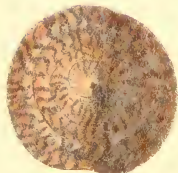
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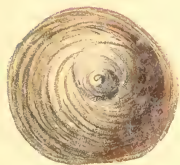
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13b



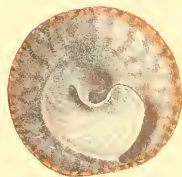
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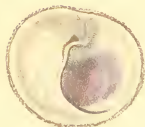
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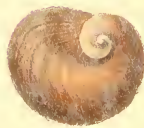
15b



18b



15a



16a



19a

TROCHITA.

PLATE III.

Species 11. (Mus. Brit.)

TROCHITA CALYPTREIFORMIS. *Troch. testâ orbiculato-convexâ, subspirali, apice mamillatâ; albâ vel lutescente, epidermide tomentosâ indatâ, intus albâ, purpurascens-carneo interdum tinctâ, appendice septiformi, latissimâ.*

THE CALYPTREA-SHAPED TROCHITA. Shell orbicularly convex, rather spiral, mamillary at the apex; white or yellowish, covered with a hairy epidermis, interior white, sometimes tinged with purple-flesh, appendage septum-shaped, rather broad.

Trochus Calyptraeformis, Lamarek, Anim. sans vert. vol. vii. p. 627.

Calyptrea Lamarekii, Deshayes.

Crepidula tomentosa, Quoy and Gaimard.

Hab. Tasmania.

Rather more spirally convoluted than in its nearest allied species, *T. maculata*, and of smaller size.

Species 12. (Fig. a, b, Mus. Cuming.)

TROCHITA MAMILLARIS. *Troch. testâ conici, pileiformi, laevigatâ, apice mamillari; corneo-albâ, livido-purpurascens tinctâ, intus ferrugineo-purpurâ, appendice sublaterali, ad marginem centralem reflectâ.*

THE MAMILLARY TROCHITA. Shell conical, cap-shaped, smooth, mamillary at the apex; horny-white, stained with livid-purple, interior rust-purple, appendage rather lateral, reflected at the central margin.

Calyptrea mamillaris, Broderip, Trans. Zool. Soc. vol. i. p. 201. pl. 28. f. 5.

Hab. Island of Muerte, Central America; Cuming.

This species is chiefly characterized by its livid-purple horny substance, and simple cap-like conical form.

Species 13. (Fig. a, b, Mus. Cuming.)

TROCHITA CONICA. *Troch. testâ conicâ, subpileiformi, tenuicellâ, concentricè rudè striatâ, apice submicronatâ; corneo-albidâ, rufa undique nebulâ et irregulariter maculatâ, appendice internâ diaphano-albâ, laterali, effusâ.*

THE CONICAL TROCHITA. Shell conical, somewhat cap-shaped, rather thin, concentrically rudely striated, rather pointed at the apex; flesh-white, clouded and irregularly spotted throughout with red, internal appendage diaphanous-white, lateral, effused.

Calyptrea conica, Broderip, Trans. Zool. Soc. vol. i. p. 202. pl. 28. f. 7.

Hab. Xipixapi and Salango, West Columbia (attached to stipes, in deep water); Cuming.

This fine species may be recognized by its densely red-spotted colouring, and smaller diaphanous-white internal appendage.

Species 14. (Fig. a, b, Mus. Cuming.)

TROCHITA CLYPEOLUM. *Troch. testâ orbiculari-depressa, apice submamillari, concentricè rudè striatâ; soridâ albâ, epidermide densâ fibrosâ indatâ, intus eburnâ appendice amplâ, septiformi, parvâ reflectâ.*

THE LITTLE-SHIELD TROCHITA. Shell orbicularly depressed, rather mamillary at the apex, concentrically rudely striated; dirty-white, covered with a thick fibrous epidermis, interior ivory-white, appendage large, septum-shaped, but little reflected.

Hab. Straits of Magalhães.

A fine species, of rather depressed growth, covered with a dense fibrous epidermis, with the internal septum-shaped appendage reaching to the outer margin in a regular, trochoid growth.

Species 15. (Fig. a, b, Mus. Cuming.)

TROCHITA MACULATA. *Troch. testâ orbiculari, convexâ, subspirali, concentricè striatâ; albâ, epidermide densâ fibrosâ indatâ, intus concavâ, albâ, violaceo-nimuculatâ, appendice amplâ, septiformi, viz reflectâ.*

THE BLOTCHED TROCHITA. Shell orbicular, convex, somewhat spiral, concentrically striated; white, covered with a thick fibrous epidermis, interior concave, white, stained with a single blotch of violet, appendage large, septum-shaped, scarcely reflected.

QUOY and GAIMARD, Voyage de l'Âstrolabe, vol. iii. p. 422. pl. 72. f. 6, 9.

Hab. New Zealand.

The interior of this species is characterized by the presence of a large violet stain.

Fig. 16. (Mus. Brit.)

The shell here figured appears to be a large subtropical state of *T. Suensis*.

MONOGRAPH

OF THE GENUS

A N O M I A.

“Why, love forswore me in my mother's womb,
And, for I should not deal in her soft laws,
She did corrupt frail nature with some bribe
To shrink mine arm up like a withered shrub
To make an envious mountain on my back
Where sits deformity to mock my body,
To disproportion me in every part,
Like to a chaos . . .
But to command, to check, to o'rbear such
As are of better person than myself,
I can add colours to the chameleon,
Change shapes with Proteus.”

Shakespeare.



Anomia (Linn.)

Anomia (Linn.)

ANOMIA.

PLATE I.

Genus ANOMIA, *Linnaeus*.

Testa plerumque orbicularis, inaequivalvis, irregularis, affixa, interiorum solidiuscula, saepissime tenuissima, hyalina. Valva inferior plana, prope cardinem orbiculatim perforata et emarginata, perforatione cuneolo adhaesivis subcalcareo libere impleta. Valva superior convexa, squamato-laminata, striata aut costata, impressis muscularibus tribus, subcentralibus. Cardio edentulus, ligamento brevi ad callositatem affixo.

Shell generally orbicular, inequivalve, irregular, affixed, sometimes rather solid, mostly very thin, hyaline. Lower valve flat, orbicularly perforated and notched near the hinge, perforation freely filled with a subcalcareous plug of adhesion. Upper valve convex, squamately laminated, striated or ribbed, with three subcentral muscular impressions. Hinge toothless, with the ligament short, attached to a callosity.

Anomia are of all shells the most difficult to determine the species. Living attached to foreign bodies, and being mostly of fragile texture, the shell becomes more or less shaped to the irregularities of its surface of attachment. If growing upon a ribbed surface, the shell assumes a ribbed structure; but the ribs formed under these circumstances are not marked by the definition and character which belong to a species that has a typical ribbing or striation of its own. There is perhaps greater difficulty in discriminating between the different states of a species incident to age and habitat. The well-known *A. ephippium* of the European seas has been described twenty times over. Even of the nine recent *Anomia* described by Lamarck, eight are supposed to be referable to this one species.

Several important species of *Anomia* had been long known in Mr. Cuming's cabinet, when Dr. Gray, in 1849, undertook to describe them. To these a few are now added, including one of large size and striking character, *A. nobilis*, from the Sandwich Islands, and the list is extended to thirty-three.

There is little to generalize upon in connection with their places of habitation. Australia contributes the finest species in *A. elyros*, and the rest so far as the habitats are known, would appear to be almost limited to the shores which have been dredged by Mr. Cuming, some in the New World and some in the Old.

Other sources of information as to the localities inhabited by this genus are much needed.

Species 1. (Mus. Cuming.)

This shell represents *Anomia polymorpha* of Philipp who has given definitions of seven distinct varieties. It is of a thin, crystalline texture, with a well defined umbo, and is found abundantly both in the interior and on the exterior of shells and other marine bodies, varying in appearance and structure according to the irregularities of its place of attachment. It has been considered by Dr. Gray and by Messrs. Forbes and Hanley to be only so many states of *A. ephippium*, and I incline to concur in that opinion.

Species 2. (Fig. a, b, Mus. Cuming.)

ANOMIA PLENIUM. *Anom. testâ orbiculari, subopacovalvâ, flavicante, versus marginem pellucido-laminatâ, valvâ inferiore lineis flexuoso-radiatâ.*

THE FULL-MOON ANOMIA. Shell orbicular, somewhat opaque-white; yellowish, transparently laminated towards the margin; lower valve flexuously rayed with lines.

Hab. Borneo.

The under valve of this species is tumidly raised about the orifice, with flexuous lines diverging around.

Species 3. (Mus. Cuming.)

ANOMIA ELYROS. *Anom. testâ subquadratâ, amplâ, crassiusculâ, radiatim dense rugoso-striatâ, striis irregularibus; opaco-albâ, valvâ superiore ferrugineo luteâ, inferiore virescente.*

THE PORT ESSINGTON ANOMIA. Shell somewhat square, large, rather thick, radiately densely roughly striated, striae irregular, opaque-white, upper valve tinged with rust, lower valve greenish.

GRAY, *Pro. Zool. Soc.* 1849, p. 118. pl. 4. f. 1.

Hab. Port Essington, Australia: Earl of Derby.

This fine species, of which another example in a younger state is represented at Plate II. Fig. 9, is remarkable for the manner in which the callous deposit of the interior is

produced around the upper part of the orifice. The shell is moreover distinguished by a square, subauriculated form, very conspicuously radiately striated.

Species 4. (Mus. Cuming.)

ANOMIA SOL. *Anom. testā valvā superiore convexā, tenui, hyalina, flexuoso-radiatā, radiis interruptè rugosis; umbone subprominente, aculo; pellucido-albā, auro-rufescente-tinctā.*

THE SUN ANOMIA. Upper valve of the shell convex, thin, hyaline, flexuously rayed, rays interruptedly rugose; umbo rather prominent, sharp; transparent-white, tinged with golden-red.

Hab. Kurachee, mouth of the Indus.

Mr. Cuming possesses only a single upper valve of this species. It is extremely thin and hyaline, flexuously rayed, and of a bright transparent golden-red colour.

Species 5. (Mus. Cuming.)

ANOMIA CELATA. *Anom. testā suborbiculari, irregulariter concentricè laminatā, radiatim liratā, liris linearibus, confertis; valvā superiore hyalino-albā, auro-*

rufescente tinctā, inferiore virescente-albā, concentricè striatā.

THE CARVED ANOMIA. Shell somewhat orbicular, irregularly concentrically laminated, radiating ridged, ridges linear, close-set; upper valve hyaline-white, tinged with golden-red, lower valve greenish-white, concentrically striated.

Hab. — ?

The upper valve of this species has a close-set, radiating, ridge-like sculpture of its own, quite distinct in character from that of the preceding species. In colour it is of a bright golden hue, greenish-white beneath.

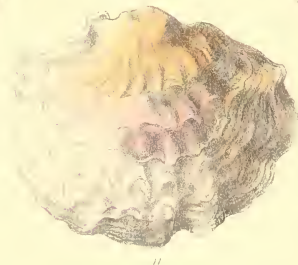
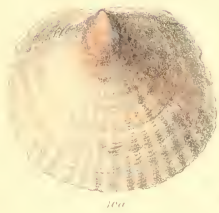
Species 6. (Mus. Cuming.)

ANOMIA PLACENTELLA. *Anom. testā subquadrato-ovata, tenuissimā, conceziusculā, levi, submalleatā, albā.*

THE PLACENTA-LIKE ANOMIA. Shell somewhat squarely ovate, very thin, rather convex, smooth, slightly malleated, white.

Hab. — ?

An extremely thin convex shell, of rather a *Placenta*-like, form having the upper surface faintly malleated.



ANOMIA.

PLATE II.

Species 7. (Mus. Cuming.)

ANOMIA AMBREUS. *Anom. testā suboblongo-ovata, tenui, laevigatā, argenteo-albā, punctulatā, umbone subacuto.*

THE SILVERY ANOMIA. Shell somewhat oblong-ovate, thin, smooth, silvery-white, rather flat, umbo sharp. GRAY, Pro. Zool. Soc. 1849, p. 115.

Hab. Island of Burias, Philippines (on stones, in sand, at a depth of ten fathoms); Cuming.

A small, silvery-white, transparent shell, of a rather spoon-shaped, oblong-ovate form, having a sharp, well-defined umbo somewhat removed from the margin.

Species 8. (Fig. a, b, Mus. Cuming.)

ANOMIA HUMPHREYSIANA. *Anom. testā obliquè ovatā, solidiusculā, ex concentricè striatā, subpellucidā, cupreo-rufescenti, umbone acuto.*

HUMPHREYS' ANOMIA. Shell obliquely ovate, rather solid, concentrically striated, somewhat transparent; coppery-red, umbo sharp.

Hab. — ?

An odd valve, from the collection of George Humphreys, the old dealer, and predecessor of the elder Sowrbry. Though of comparatively solid texture, it is transparent, and of a coppery-red colour. The oblique, coppery-red shell represented in the next Plate at Fig. 14 a, b, and which is known to be from the same old collection, appears to be another example of the species, ribbed from the surface of its place of attachment.

Fig. 9. (Mus. Cuming.)

This shell, ticketed in Mr. Cuming's collection *A. striatens*, Gray, does not appear to have been described under that name, and proves to be a younger state of *A. elyros*, figured in the preceding Plate.

Species 10. (Fig. a, b, Mus. Cuming.)

ANOMIA CYLINDR. *Anom. testā suborbiculari, radialim corrugato-costatā, costis subobsoletis, pellucido-albā,*

circa umbonem curvantio-aneatā, umbone acuto: valvā inferiore virescente.

THE SHIELD ANOMIA. Shell somewhat orbicular, radially corrugately ribbed, ribs rather obsolete, transparent-white, orange-bronzed around the umbo, umbo sharp; lower valve greenish.

GRAY, Pro. Zool. Soc. 1849, p. 115.

Hab. Mouth of the Zangtze Keang River, China; Fortune

This species is characterized by a faint wrinkle-ribbed sculpture in the upper valve, which is not derived from the surface of any foreign body, as the under valve is perfectly smooth.

Species 11. (Mus. Cuming.)

ANOMIA EPHIPPIMUM. *Anom. testā subobliquè orbiculari, plus minus irregulari, rudè striatā, interdum fimbriato-squamulā; intescente-albā.*

THE SADDLE ANOMIA. Shell somewhat obliquely orbicular, more or less irregular, rudely striated, sometimes fimbriately scaled; yellowish-white.

LINNEUS, Syst. Nat. p. 1150.

Anomia electrica, cepa, and squamula, Linnæus.

Anomia punctata, Chemnitz.

Anomia stercoran, rugosa, and cylindrica, Gmelin.

Anomia margaritacen, sulcata, and pectiniformis, Poli.

Anomia cymbiformis, Maton and Raetel.

Anomia violacea and striatula, Bruguière.

Anomia pyriformis and fornicata, Lamarek.

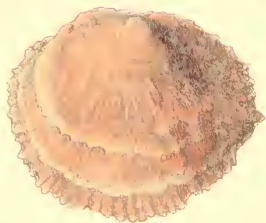
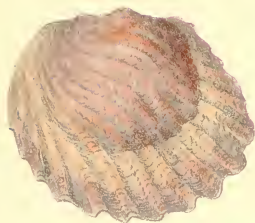
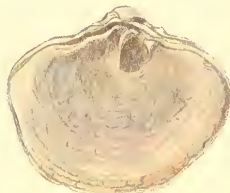
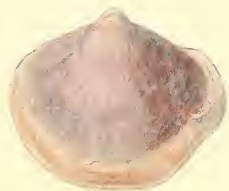
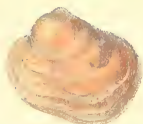
Anomia polymorpha and scabrella, Philippi.

Anomia tubularia, Turton.

Anomia coronata, Beau.

Hab. European Seas.

The long list of synonyms of this species above quoted show how largely conchologists have been deceived by its Protean character. On whatever foreign body the *Anomia ephippium* attaches itself, the shell grows with some corresponding impression of the surrounding irregularities; and along with this it differs in texture, etc., at different periods of its growth, and according to the depth and circumstances of its habitation.



ANOMIA.

PLATE III.

Species 12 (Fig. a, b, c, Mus. Cuming.)

ANOMIA ACHEUS. *Anom. testā latē ovatā, lævigatā, purpurā vel aereo-lutescente, valvā inferiore concentricā subquadrato-striatā, superiore convexā, versus umbonem tumido-mucronatā.*

THE ACHEUS ANOMIA. Shell broadly ovate, smooth, purple or golden-yellow, lower valve concentrically somewhat scaly-striated, upper valve convex, tumidly hooked towards the umbo.

GRAY, Pro. Zool. Soc. 1849, p. 116.

Hab. Kurachce, mouth of the Indus; Major Baker.

The swollen hooked growth of this shell is obviously a character of the species, and not a distortion arising from its place of attachment.

Species 13. (Mus. Cuming.)

ANOMIA LARBAS. *Anom. testā subquadrato-ovatā, tenui, argenteo-albā, lævigatā, radiatim flexuoso-costatā, costis ferè obsoleteis; valvā inferiore arginoso-cerulā.*

THE WAVED ANOMIA. Shell somewhat squarely ovate, thin, silvery-white, smooth, radiately flexuously ribbed, ribs almost obsolete, lower valve bright verdigris-blue.

GRAY, Pro. Zool. Soc. 1849, p. 117.

Hab. Payta, Peru; Cuming.

A fine faintly-waved shell, of a delicate silvery-white, verdigris-blue beneath.

Fig. 14 a, b. (Mus. Cuming.)

This specimen, conspicuously ribbed in both valves from having grown upon a ribbed shell, is from the collection of the old dealer George Humphreys, and is doubtless another example of *A. Humphreysiana*, described at Pl. II. Sp. 8. Though differing so much in general appearance, it is of the same oblique form, solid transparent texture, and coppery-purplish colour.

Species 15. (Mus. Cuming.)

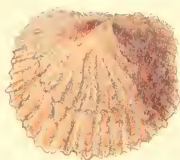
ANOMIA ADAMAS. *Anom. testā ovatā, versus marginem laminatā, rudē costatā, costis angustis, valdē irregulāribus, versus marginem conspicuē mucronatis; vicidē rufescente-aurantiā.*

THE ADAMANT ANOMIA. Shell ovate, laminated towards the margin, rudely ribbed, ribs narrow, very irregular, conspicuously pointed towards the margin; bright reddish-orange.

GRAY, Pro. Zool. Soc. 1849, p. 115.

Hab. Lord Hood's Island, Galapagos (attached to *Avicula margaritifera* at the depth of nine fathoms); Cuming.

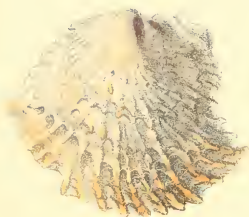
The upper valve of this species is distinguished by a very bright reddish-orange colour, as well as by a peculiar kind of irregular sharp ribbing, developed on appressed laminae.



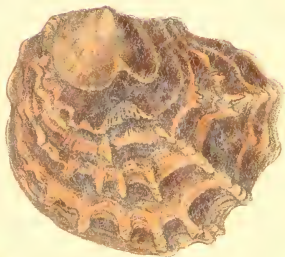
16 a



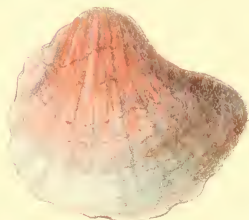
16 c



16 b



17



18 b



18 a



19

ANOMIA.

PLATE IV.

Species 16. (Fig. *a, b*, Mus. Cuming.)

ANOMIA LAMPE. *Anom. testā subobliquè quadratā, rudē, radiatim costatā, costis interruptis, irregularibus, flexuosis, versus marginem muricato-squamatis; testā, hyalino-albā, valvā superiore virescente-luteo vel aurantio-rufo, inferiore aruginoso-ceruleo lividā.*

THE SCUM ANOMIA. Shell somewhat obliquely square, rude, radiately ribbed, ribs interrupted, irregular, flexuous, prickly-scaled towards the margin; thin, hyaline-white, upper valve stained with greenish-yellow or orange-red, lower valve with verdigris-blue.

GRAY, Pro. Zool. Soc. 1849, p. 115.

Hab. California; Lady Wigram.

The ribs of the upper valve of this hyaline bright-coloured species are irregularly wrinkled, and sometimes prickly-scaled.

Species 17. (Mus. Cuming.)

ANOMIA STRIGILIS. *Anom. testā obliquè ovatā, rudē fimbriato-laminatā et peculiariter pectinato-costatā; luteo-corneā, medio purpurascete.*

THE CURRYCOMB ANOMIA. Shell obliquely ovate, rudely fimbriately laminated and pectinately ribbed; yellowish-horny, purplish in the middle.

Hab. ———?

Of this shell, formerly in the collection of George Humphreys, nothing is known as to its habitat. The peculiar pectinate festooned ribs, protruding from the lamina, appressed into the hyaline texture of the upper valve, leave little doubt as to its specific distinctness. Such a regularity of sculpture could not be accidental, nor could it be derived from any pattern connected with its place of attachment.

Species 18. (Fig. *a, b*, Mus. Cuming.)

ANOMIA LAQUEATA. *Anom. testā subobliquè ovatā, valvā superiore tumido-incurvā, radiatim costatā, costis angustis, regularibus, subdistantibus, versus marginem obsolete; hyalino-albā, plus minus aurantio-avoca, valvā inferiore planulatā, concentricè laminato-striatā aruginoso-ceruleā.*

THE FLUTED ANOMIA. Shell somewhat obliquely ovate, upper valve tumidly incurved, radiately ribbed, ribs rather narrow, regular, somewhat distant, obsolete towards the margin; hyaline-white, more or less orange-bronzed, lower valve flat, concentrically laminately striated, verdigris-blue.

Hab. ———?

The distinguishing specific character of this shell consists in the regularly radiating fluted sculpture of narrow distant ribs, and delicate orange-bronze colouring in the upper valve, which is almost as tumidly incurved as in *A. Achæns*.

Species 19. (Mus. Cuming.)

ANOMIA PACILUS. *Anom. testā suborbiculari, convexo-planā, radiatim flexuoso-costatā, costis subdistantibus, plus minus obsolete nodulatis; fusco-avocatā.*

THE SWARTHY ANOMIA. Shell somewhat orbicular, convexly flattened, radiately flexuously ribbed, ribs rather distant, more or less obsoletely noduled; fuscous-bronze.

GRAY, Pro. Zool. Soc. 1849, p. 117.

Hab. Tumbez, Peru; Cuming.

A very characteristic fuscous-bronze shell, rather flat, with faintly noduled ribs radiating in a flexuous manner at unequal distances from a rather sharply defined umbo.



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20



22



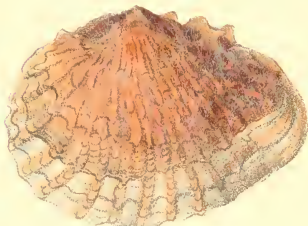
23a



24a



24b



23b

ANOMIA.

PLATE V.

Species 20. (Mus. Cuming.)

ANOMIA *aculeata*. *Anom. testā oblongo-ovalā, tenui, spinuloso-lobā, radiatim striatā, striis plus minus aculeato-squamatā.*

THE PRICKLY ANOMIA. Shell oblong-ovate, thin, hyaline-white, radiately striated, striae more or less prickly-scaled.

MÜLLER. Zool. Danica, Prodrum. p. 249.

Anomia striolata, Turton.

Hab. Britain and North Atlantic generally.

A small hyaline species, more or less rayed with minute, whitish, prickly scales.

Species 21. (Fig. a, b, Mus. Cuming.)

ANOMIA *acontes*. *Anom. testā suborbiculari, tenui, planatā, lavi, lutescente-albā.*

THE *ACONTES* ANOMIA. Shell nearly orbicular, thin, flattened, smooth, yellowish-white.

GRAY, Pro. Zool. Soc. 1849, p. 116.

Hab. Jamaica; Gosse.

Of very simple form, without any trace of sculpture.

Species 22. (Mus. Cuming.)

ANOMIA *spinosa*. *Anom. testā obliquē ovalā, tenui, albidā, versus umbones radiatim spinosa-squamatā.*

THE SPINED ANOMIA. Shell obliquely ovate, thin, whitish, radiately spine-scaled towards the umbo.

Hab. Norway.

This shell, having a regular oblique growth, appears to differ from *A. aculeata* in a manner that should be regarded of importance in determining species.

Species 23. (Fig. a, b, Mus. Cuming.)

ANOMIA *nobilis*. *Anom. testā latē ovalā, planā, solidiusculā, subirregulari, radiatim costatā, costis subdistantibus, obtusē squamatis, valvā superiore zirescente-albā, luteo vel rufescente-orantio tinctā, valvā inferiore pallidē æruginoso-cavatescente.*

THE NOBLE ANOMIA. Shell broadly ovate, flat, rather solid, somewhat irregular, radiately ribbed, ribs rather distant, obtusely scaled, upper valve greenish-white, tinged with yellow or reddish-orange, lower valve pale verdigris-blue.

Hab. Sandwich Islands.

A fine new species from the Sandwich Islands, sculptured with characteristic flexuously rayed scaly ribs, varying in colour from yellow to reddish-orange.

Species 24. (Fig. a, b, Mus. Cuming.)

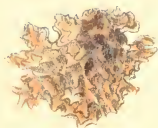
ANOMIA *dryas*. *Anom. testā suborbiculari, tenui, planiusculā, hyalino-albā, valvā superiore intus extusque radiatim lineatā, lineis subdistantibus; umbone subproducto.*

THE *DRYAS* ANOMIA. Shell nearly orbicular, thin, rather flat, hyaline-white, upper valve radiately lined within and without, lines rather distant; umbo slightly produced.

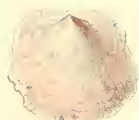
GRAY, Pro. Zool. Soc. 1849, p. 115.

Hab. Singapore (on dead shells, in coarse sand and gravel, at a depth of about ten fathoms); Cuming.

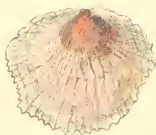
The upper valve of this species is curiously distinguished by a radiation of rather distant lines, which are seen both within and without.



26



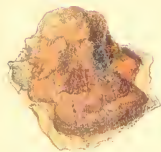
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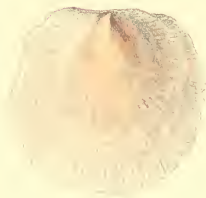
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31

ANOMIA.

PLATE VI.

Species 25. (Mus. Cuming.)

ANOMIA MALLEATA. *Anom. testâ suborbiculari, tenuissimâ, hyalino-albâ, rugoso-malleatâ, umbone subproeminente, acuta.*

THE MALLEATED ANOMIA. Shell nearly orbicular, very thin, hyaline-white, roughly malleated, umbo rather prominent, sharp.

Hab. — ?

Of a delicate transparent texture, with a rude malleated surface and sharply defined umbo.

Species 26. (Mus. Cuming.)

ANOMIA RAMOSA. *Anom. testâ suborbiculari, tenui, lutescente, copiosè ramoso-squamata.*

THE BRANCHED ANOMIA. Shell nearly orbicular, thin, yellowish, copiously branch-scaled.

Hab. Tunis: Fraser.

Distinguished by a copious growth of branching scales.

Species 27. (Mus. Cuming.)

ANOMIA SCABRA. *Anom. testâ suborbiculari, hyalino-albâ, circa umbonem pallidè rufescente-ovâ, radiatim liratâ, liris radibus, irregularibus, ad marginem acutis.*

THE ROUGH ANOMIA. Shell nearly orbicular, hyaline-white, pale reddish-bronze about the umbo, radiately ridged, ridges rude, irregular, sharp at the margin.

Hab. Bombay.

In colour this species approaches *A. cythereum*, from China, but the shell has a sculpture natural to it, which is quite distinct.

Species 28. (Mus. Cuming.)

ANOMIA ALECTUS. *Anom. testâ subtrigono-orbiculari, irregulari, solidiuscula, versus umbonem acutè flexuoso-costatâ, deinde concentricè laminatâ; calatâ superiore rufescente-ferruginâ et purpurascente, inferiore tirescente.*

THE ALECTUS ANOMIA. Shell somewhat triangularly orbicular, irregular, rather solid, sharply flexuously ribbed towards the umbo, then concentrically laminated; upper valve reddish-rust or purplish, lower valve greenish.

GRAY, *Pro. Zool. Soc.* 1849, p. 115.

Hab. Bay of Guayaquil; Ilinds.

The chief peculiarity of this species consists in the sharply flexuous ribs, which become obsolete towards the margin among the concentric laminae.

Fig. 29. (Mus. Cuming.)

This shell represents the state of *A. ephippium* named *A. cepa*.

Species 30. (Mus. Cuming.)

ANOMIA FIDENAS. *Anom. testâ ovatâ, tenui, planulatâ, laevi, albâ; calatâ inferiorem concentricè laminato-striatâ.*

THE SMOOTH ANOMIA. Shell ovate, thin, flat, smooth, whitish; lower valve concentrically laminately striated.

GRAY, *Pro. Zool. Soc.* 1849, p. 116.

Hab. West coast of Panama; Cuming.

Of very simple character, found by Mr. Cuming at the above-named locality, attached to a *Pinna*.

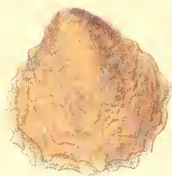
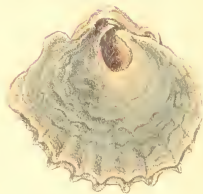
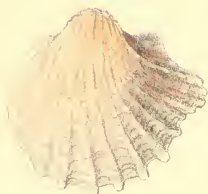
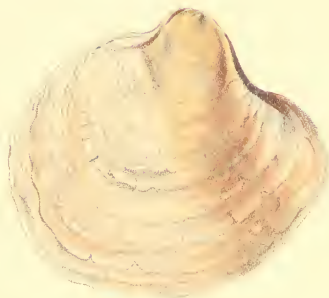
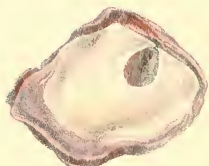
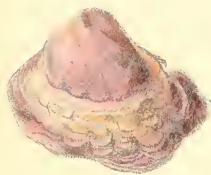
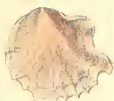
Species 31. (Mus. Cuming.)

ANOMIA ARGYRITIS. *Anom. testâ subquadrato-orbiculari, tenuissimâ, diaphanâ, argenteo-albâ, circa umbonem subcoloratâ, undique radiatim striatâ.*

THE SILVER-FOAM ANOMIA. Shell somewhat squarely orbicular, very thin, diaphanous, silvery-white, faintly coloured about the umbo, everywhere radiately striated.

Hab. — ?

A delicate, radiately striated, silvery species, faintly tinged with colour about the umbo.



ANOMIA.

PLATE VII.

Species 32. (Mus. Cuming.)

ANOMIA HAMILLUS. *Anom. testâ obliquè ovatâ, sinuosa, tenui, pellucidâ, rufescente, irregulariter rugoso-maculatâ.*

THE SINUOUS ANOMIA. Shell obliquely ovate, sinuous, thin, transparent, irregularly roughly mottled.

GRAY, *Proc. Zool. Soc.* 1849, p. 117.

Hab. Bay of Canes, West Columbia; Cuming.

Of a thin sinuous growth and reddish colour.

Species 33. (Fig. a, b, Mus. Cuming.)

ANOMIA TYRIA. *Anom. testâ subtrigono-ovata, tumida, subopake levigatâ, intensè œneo-purpureâ.*

THE TYRIAN ANOMIA. Shell somewhat triangularly ovate, tumid, everywhere smooth, deep bronze-purple.

Hab. Sandwich Islands.

A richly purple-stained species from the Sandwich Islands, with a smooth apparently worn aspect.

Species 34. (Mus. Cuming.)

ANOMIA METALLICA. *Anom. testâ subtrigono-ovata, tenui, compressâ, concentricè obsolete laminato-striatâ, opaculo-albâ, lateo tinctâ.*

THE METALLIC ANOMIA. Shell somewhat triangularly ovate, thin, rather compressed, concentrically obsoletely laminately striated, silvery-white, tinged with yellow.

Hab. ———?

Of a delicate, metallic, yellow-tinged, silvery texture, differing specifically in this respect as well as in form from any varieties that I have seen of *A. ephippium*.

Species 35. (Fig. a, b, Mus. Cuming.)

ANOMIA COSTATA. *Anom. testâ subtrigono-orbiculari, versus umbonem tumido-in-arcâ, semipellucidâ-albâ, radiatâ costatâ, costis prominentibus, squamatis; valvâ inferiore concentricè laminatâ, eruginoso-œreatâ.*

THE RIBBED ANOMIA. Shell somewhat triangularly orbicular, tumidly incurved towards the umbo, semi-transparent-white, radiately ribbed, ribs prominent, scaled; lower valve concentrically laminated, verdigris-blue.

Hab. ———?

This characteristic species appears to be ribbed independently of its place of attachment, and the ribs are largely scaled.

Species 36. (Mus. Cuming.)

ANOMIA LUCEANA. *Anom. testâ trigono-globosâ, tenui, valdè inflatâ, radi, irregulari, versus umbonem tumido-incurvâ, obsolete squamato-laminatâ.*

THE LAMP ANOMIA. Shell triangularly globose, thin, very inflated, rude, irregular, tumidly incurved towards the umbo, obsoletely squamately laminated.

Hab. ———?

A thin, inflated, *Trochatala*-shaped species, of very irregular growth, obscurely scale-laminated.

August, 1859.



3d



38



39



40 b



50



50 c

ANOMIA.

PLATE VIII.

Species 37. (Fig. 37, 38, 39, and 40 *a* to *d*, Mus. Cuming.)

ANOMIA ENIGMATICA. *Anoma testâ oblongo-ovata, tenui, valvâ superiore plus minus obliquâ, vane levi, nunc radiatâ livatâ, liris distinctibus, ceriseosis vel fere obsolete, internâ cypro-purpureâ valvâ inferiori argenteo-albâ aut lutescente.*

THE PUZZLING ANOMIA. Shell oblong-ovate thin, upper valve oblique, sometimes smooth, sometimes radiately ridged, ridges distant, warty or almost obsolete. deep coppery-purple, lower valve silvery-white or yellowish.

Tellina enigmatica, Chemnitz, Conch. Cab. vol. xi. pl. 199. f. 1949 and 1950.

Anomia rosea, Gray.

Anomia naviformis, Jonas.

Hab. Philippine Islands (in Mango-trees and *Nipa* Palms, on the seashore): Cuming.

It will be seen by the numbers of the accompanying

figures that the shells selected for illustration were intended to represent four species. On further examination, however, I cannot resist coming to the conclusion that they are all varieties of one and the same—the *Tellina enigmatica* of Chemnitz. When attached to narrow stems or sticks the shell assumes an elongated boat form, as in the variety *A. naviformis*, Jonas, at Fig. 37. The variety, Fig. 38, from Borneo, is smooth, broad, and rather solid; that at Fig. 39 has a more oblique growth, and is rayed with more or less obsolete warty ridges. It is found on piles of wood forming the wharves at Singapore. The shells represented at Fig. 40 *a, b, c, d*, which may be regarded as the typical form of the species, are of a more regular growth, sometimes smooth, sometimes presenting indications of the warty ridges. They were found by Mr. Cuming attached to the Mango-trees and *Nipa* Palms, growing between tides on the shores of the Philippine Islands, some adhering to the leaves, as at Fig. 40.

ANOMIA.

<i>Achæus, Gray</i>	III.	12	<i>malicata, Reece</i>	VI.	25
<i>Acutus, Gray</i>	V.	21	<i>margaritacea, Poli</i>	II.	11
<i>aculeata, Müller</i>	V.	20	<i>metallica, Reece</i>	VII.	34
<i>adamus, Gray</i>	III.	15	<i>naviformis, Jonas</i>	VIII.	37
<i>anigmatica (Tellina), Chemnitz</i>	VIII.	37	<i>nobilis, Reece</i>	V.	23
<i>Allectus, Gray</i>	VI.	28	<i>pacius, Gray</i>	IV.	19
<i>amabeus, Gray</i>	II.	7	<i>pectiniformis, Poli</i>	II.	11
<i>argyritis, Reece</i>	VI.	31	<i>placitella, Reece</i>	I.	6
<i>ceclata, Reece</i>	I.	5	<i>plenilunium, Reece</i>	I.	2
<i>cepa, Linnæus</i>	II.	11	<i>polymorpha, Philippi</i>	II.	11
<i>coronata, Beau</i>	II.	11	<i>punctata, Chemnitz</i>	II.	11
<i>costata, Reece</i>	VII.	35	<i>pyriformis, Lamarek</i>	II.	11
<i>cylindrica, Guélin</i>	II.	11	<i>ramosa, Reece</i>	VI.	26
<i>cymbiformis, Matou and Racket</i>	II.	11	<i>rosea, Gray</i>	VIII.	37
<i>cyteum, Gray</i>	II.	10	<i>rugosa, Guélin</i>	II.	11
<i>Dryas, Gray</i>	V.	24	<i>scabra, Reece</i>	VI.	27
<i>electrica, Linnæus</i>	II.	11	<i>scabrifolia, Philippi</i>	II.	11
<i>elyros, Gray</i>	I.	3	<i>sol, Reece</i>	I.	4
<i>ephippium, Linnæus</i>	II.	11	<i>spinosa, Reece</i>	V.	22
<i>fidenas, Gray</i>	VI.	30	<i>squamula, Linnæus</i>	II.	11
<i>flescosa, Guélin</i>	II.	11	<i>striata, Gray</i>	II.	9
<i>fornicata, Lamarek</i>	II.	11	<i>striatula, Bruguière</i>	II.	11
<i>hamulus, Gray</i>	VII.	32	<i>strigilis, Reece</i>	IV.	17
<i>Humphreysiana, Reece</i>	II.	8	<i>striolata, Turton</i>	V.	20
<i>lampe, Gray</i>	IV.	16	<i>sulcata, Poli</i>	II.	11
<i>laqueata, Reece</i>	IV.	18	<i>tubularis, Turton</i>	II.	11
<i>lirias, Gray</i>	III.	13	<i>Tyria, Reece</i>	VII.	33
<i>lucerna, Reece</i>	VII.	36	<i>violacea, Bruguière</i>	II.	11

MONOGRAPH
OF THE GENUS
P L A C U N A N O M I A .

" Each creature holds an insular point in space :
Yet what man stirs a finger, breathes a sound,
But all the multitudinous beings round
In all the countless worlds, with time and place
For their conditions, down to the central base,
Thrill, haply, in vibration and rebound,
Life answering life across the vast profound,
In full antiphony, by a common grace!"

Elizabeth Barrett Browning.





PLACUNANOMIA.

PLATE I.

Genus PLACUNANOMIA, Broderip.

Testa subequivaltris, irregularis, tenuis, interdum solidiuscula, plerumque complanata, carinae interno dentibus duobus divaricatis convergentibus in valvâ inferiore, sulcis duobus ligamentiferis in superiore. Valva inferior prope cardinem fissurata vel trigono-perforata, perforatione cardine descendente, tendinum adhesionis subosseam interdum inter testa laminae insertam, admittente. Impressio muscularis in valvâ inferiore unica, in superiore duplicata, subcentralis.

Shell nearly equivalve, irregular, thin, sometimes rather solid, generally smooth; hinge internal, composed in the lower valve of two divaricate, converging teeth, in the upper of two ligamentary grooves. Lower valve fissured or triangularly perforated near the hinge; perforation descending from the hinge, admitting a partially bony tendon of adhesion, which becomes sometimes inserted between the laminae of the shell. Muscular impression in the lower valve single, in the upper valve double, nearly central.

This remarkable genus was founded in 1832 by Mr. Broderip, on a single species collected by Mr. Cuming in the Gulf of Dulce, Central America, presenting a hinge approaching very nearly to that of *Placuna*, in connection with the appearances and distinguishing organization of *Anomia*. As many as a dozen other species have been found to partake of these typical characteristics, but in none are they so conspicuously developed as in the original *Placunanomia Cumingii*. Their generic peculiarity consists in this: the orifice in the lower valve, through which the ossified tendon of adhesion, or plug, passes, is not open at the top as in *Anomia*, but is soldered (so to speak) by the intervention of a divaricate, *Placuna*-like hinge, or by some more or less rude modification of it. Owing to the soldering of the orifice, the tendon of adhesion is so far restricted in its growth as to insinuate itself in some species in the form of a plate between the laminae of the surrounding shell; this is not, however, as Mr. Broderip had reason to suppose from the *P. Cumingii*, a character of the genus. In most of the species the orifice is large enough to admit the utmost growth of the tendon.

The species, it will be seen, are from widely-spread localities, one of which inhabits our own shores.

Species 1. (Mus. Cuming.)

PLACUNANOMIA ECHINATA. *Plac. testâ subtumidâ, cavâ superiore radiatim echinato-squamatâ; albidâ, medio fusco tinctâ.*

THE PRICKLY PLACUNANOMIA. Shell somewhat swollen, upper valve radiately prickly-scaled; whitish, stained in the middle with brown.

BRODERIP, Pro. Zool. Soc. 1834, p. 2.

Hab. Island of Nevis, West Indies (dredged up attached to shells from sandy mud, at a depth of six fathoms): Mr. Powers.

Dr. Gray regards this species as an imperfect specimen of *P. foliata*, and states in his monograph of the genus, Pro. Zool. Soc. 1849, p. 121, that "Mr. Broderip doubted if this might not be the case when he described it." It may be so, but I cannot find that Mr. Broderip has made any such statement. The *P. foliata* has a much larger orifice for the tendon of adhesion.

Species 2. (Mus. Cuming.)

PLACUNANOMIA RUDIS. *Plac. testâ sordidâ albâ, crassâ, concentricè irregulariter corrugatâ, intus politâ, perforatione parvâ.*

THE RUDE PLACUNANOMIA. Shell dead-white, thick, concentrically irregularly wrinkled, polished within, orifice small.

BRODERIP, Pro. Zool. Soc. 1834, p. 2.

Podolitesuus decipiens, Philippi.

Hab. West Indies; Broderip. Havana; Philippi.

Of rude growth and solid substance, with the orifice small.

Species 3. (Fig. a, b, Mus. Cuming.)

PLACUNANOMIA CUMINGII. *Plac. testâ subrotundatâ, obscure argenteo-albidâ, virescente-tinctâ, complanatâ, margine plicatâ, plicis marinè angularibus.*

CUMING'S PLACUNANOMIA. Shell somewhat rounded, obscurely silvery-white, tinged with green, smooth, plicated at the margin, plicis largely angular.

BRODERIP, Pro. Zool. Soc. 1832, p. 29.

Hab. Gulf of Dulce, province of Costa Rica, Central America (dredged from a muddy bottom at a depth of eleven fathoms, attached to dead bivalve shells and dead coral); Cuming.

In this species, the original one described by Mr. Broderip as the type of the genus, the orifice of the lower valve is restricted to an oblong fissure, and the tendon of adhesion presses itself into a space between the laminae of the surrounding shell.

Species 4. (Mus. Cuming.)

PLACUNANOMIA ZEALANDICA. *Plac. testā suborbiculari, albidā, complanatā, valvā superiore radiatim liratā, liris subdistantibus; intus caeruleo-virente.*

THE ZEALAND PLACUNANOMIA. Shell nearly orbicular, whitish, smooth, upper valve radiately ridged, ridges rather distant; interior blue-green.

Anomia Zealandica, in Dieffenbach's New Zealand, vol. ii. p. 261.

Hab. New Zealand.

A semitransparent blue-green shell, radiated with fine ridges, which are obsolete sealed, and rather irregular.

Species 5. (Mus. Cuming.)

PLACUNANOMIA FOLIATA. *Plac. testā subdiaphanā, subcirculari, rudi, subfoliatā; sordide albā, intus splendēte, valvā superioris medio purpureo-fusco; perforatione maximā.*

THE FOLIATED PLACUNANOMIA. Shell subdiaphanous, nearly circular, rude, rather foliate; dead-white, shining within, middle of the upper valve purple-brown; orifice very large.

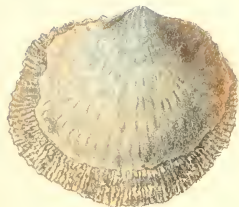
BRODERIP, Pro. Zool. Soc. 1834, p. 2.

Hab. Isle of Muerie, Bay of Guayaquil, West Columbia (dredged up, attached to a dead *Pinna*, from a bottom of sandy mud, at the depth of eleven fathoms).

It is not impossible that this species may prove to be a more advanced state of *P. echinata*, in which the prickly scales have become obsolete. It is however distinguished from that species, so far as the limited number of specimens enabled us to judge, by a very much larger orifice.



5 a



6 a



6 b



7



8 a



8 b

PLACUNANOMIA.

PLATE II.

Species 6. (Fig. a, b, c, Mus. Cuming.)

PLACUNANOMIA IONE. *Plac. testâ suborbiculari, albâ, laminari, laminarum margine spiculis parvis elongatis instructo, perforatione maximâ; intus virente.*

THE VIOLET PLACUNANOMIA. Shell nearly orbicular, whitish, laminar, edge of the laminae furnished with small elongated processes, perforation very large; interior green.

GRAY, Pro. Zool. Soc. 1849, p. 123.

Hab. Sydney, Australia (on rocks); Strange.

The smooth portion of the upper surface of this shell, described by Dr. Gray as being laminar, appears to be an abrasion of the radiating spicular processes occasioned by the attachment of some other shell.

Fig. a represents the plug or tendon of adhesion, Fig b the upper valve, and Fig. c the lower valve.

Species 7. (Mus. Cuming.)

PLACUNANOMIA MACROCHISMA. *Plac. testâ ovatâ, solitudinosa, radiatim rudè plicato-costatâ, costis valdè irregularibus, hic illic tumidis et bifurcatis; lutescente-albâ; perforatione maximâ.*

THE LARGELY PERFORATED PLACUNANOMIA. Shell ovate, rather solid, radiately rudely plicately ribbed, ribs very irregular, here and there swollen and bifurcated; yellowish-white; perforation very large.

Anomia macrochisma, Deshayes, Revue Soc. Cuvierienne, 1839, Mag. de Zool. 1841, pl. 34.

Hab. Omalaska; Cuming. Kamtschatka; Deshayes.

This fine species is distinguished by a broadly-ribbed growth, the ribs being very irregular, swollen here and there, and bifurcated, and by a very large orifice.

Species 8. (Fig. 1 a, b, Mus. Cuming.)

PLACUNANOMIA HARFORDI. *Plac. testâ ovatâ vel obliquè transversâ, concentricè eximè fimbriato-squamatâ, squamis muricatis; pellucido-albâ; perforatione parviusculâ.*

HARFORD'S PLACUNANOMIA. Shell ovate or obliquely transverse, concentrically delicately fimbriately scaled, scales prickly; transparent-white; orifice rather small. *Hab.* Island of Martinique, West Indies.

The surface of this species is delicately sculptured with concentric laminae, surmounted with sharply erect scales. Mr. Frederic Harford, an acute conchologist and most assiduous collector, after whom I have the honour to name it, also possesses specimens.

Species 9. (Mus. Cuming.)

PLACUNANOMIA PATELLIFORMIS. *Plac. testâ suborbiculari, convexâ vel planâ, radiatim liratâ et striatâ; intus virescente; apice non marginali.*

THE DISH-SHAPED PLACUNANOMIA. Shell nearly orbicular, convex or flattened, radiately ridged and striated; interior greenish; apex removed from the margin.

Anomia patelliformis, Linnæus, Syst. Nat. p. 1152.

Anomia squama, Gmelin.

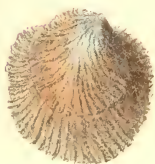
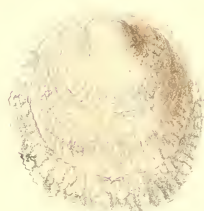
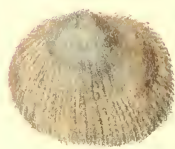
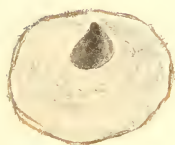
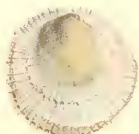
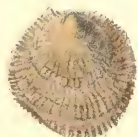
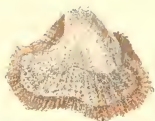
Anomia undulata, Gmelin.

Ostrea striata, Pulteney.

Anomia striata, Loven.

Hab. Northern shores of Europe (at a depth of from five to fifty fathoms); Forbes and Hanley.

This small fragile species, the only one known on our own shores, is but very slightly striated; whilst the apex is peculiar in being somewhat removed from the margin.



PLACUNANOMIA.

PLATE III.

Species 10. (Fig. *a, b*, Mus. Cuming.)

PLACUNANOMIA GOULDI. *Plac. testâ subcylindrico-oratâ, radiatim minutè equanulo-striatâ, striis muricato-squamulosis; sordide albâ, intus lutescente-fuscâ.*

GOULD'S PLACUNANOMIA. Shell somewhat triangularly ovate, radiately minutely scale-striated, striae prickly-scaled; dead-white, interior yellowish-brown.

Hab.—?

A small species, not referable to any hitherto described, for which Mr. Cuming is indebted to Dr. Gould, of Boston United States.

Species 11. (Fig. *a, b*, Mus. Cuming.)

PLACUNANOMIA ALOPE. *Plac. testâ orbiculari, apice vix marginali, valvâ superiori planâ, radiatim corrugato-costatâ, costis subnodatis; virecente-albâ.*

THE FOX PLACUNANOMIA. Shell orbicular, apex scarcely marginal, upper valve flat, radiately wrinkle-ribbed, ribs waved; greenish-white.

GRAY, *Pro. Zool. Soc.* 1849, p. 122.

Hab. California.

In this species the ribs have an irregular character, disposed in waved radiating wrinkles.

Species 12. (Fig. *a, b*, Mus. Cuming.)

PLACUNANOMIA CEPIO. *Plac. testâ orbiculari, radiatim minutè striatâ, nudique rugoso-malleatâ; pellucida-albâ; perforatione subduplâ.*

THE CRYSTAL PLACUNANOMIA. Shell orbicular, radi-

ately minutely striated, everywhere wrinkle-malleated; transparent-white; orifice rather large.

GRAY, *Pro. Zool. Soc.* 1849, p. 121.

Hab. California.

A very delicate transparent species, curiously wrinkle-malleated throughout.

Species 13. (Fig. *a, b*, Mus. Cuming.)

PLACUNANOMIA AUSTRALICA. *Plac. testâ transversè ovalâ, radiatim tenuilimatâ, iris minutè muricato-squamulosis; pellucida-albâ, intus caruleo-virente.*

THE AUSTRALIAN PLACUNANOMIA. Shell transversely ovate, radiately finely ridged, ridges minutely prickly-scaled; transparent-white, interior blue-green.

Hab. Australia.

Finely sculptured throughout with minutely scaled ridges.

Species 14. (Fig. *a, b*, Mus. Cuming.)

PLACUNANOMIA ABNORMALIS. *Plac. testâ orbiculari, radiatim divaricato-limatâ, iris promiscuè nodulis, minutè squamulosis; sordide albâ, intus viridescente.*

THE ABNORMAL PLACUNANOMIA. Shell orbicular, radiately divaricately ridged, ridges promiscuously waved, minutely scaled; dead-white, interior greenish.

GRAY, *Pro. Zool. Soc.* 1849, p. 121.

Hab. West Indies.

The radiating ridges of this species have a peculiar promiscuously wrinkled character.

PLACUNANOMIA.

	Plate.		Species.		Plate.		Species.
abnormalis, <i>Gray</i>	III.		14		III.		10
aiope, <i>Gray</i>	III.		11		II.		8
Australica, <i>Reeve</i>	III.		13		II.		6
cepio, <i>Gray</i>	III.		12		II.		7
Cumingii, <i>Broderip</i>	I.		3		II.		9
eclinata, <i>Broderip</i>	I.		1		I.		2
foliata, <i>Broderip</i>	I.		5		I.		4
					III.		
					II.		
					II.		
					I.		
					I.		

1891

