

CONCHOLOGIA ICONICA:

OR,

ILLUSTRATIONS

OF THE

SHELLS OF MOLLUSCOUS ANIMALS.

VOL. XI.

CONTAINING MONOGRAPHS OF THE GENERA

PINNA.	UMBRELLA.	CREPIDULA.
PERNA.	PEDUM.	CRUCIBULUM.
MALLEUS.	IANTHINA.	TROCHITA.
STREPSIDELLA.	COLUMBELLA.	ANOMIA.
CRENATULA.	META.	PLACUNANOMIA.
	CALYPTRELA.	

BY

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"We stand we gaze on the sparkling brim,
With wonder staff by its transparency,
And all enraptured with its purity:
Because the unstained, the clear, the crystalline,
Have ever in them something of benign."—*W. Colverworth*

LONDON:

LOVELL REEVE, HENRIETTA STREET, COVENT GARDEN

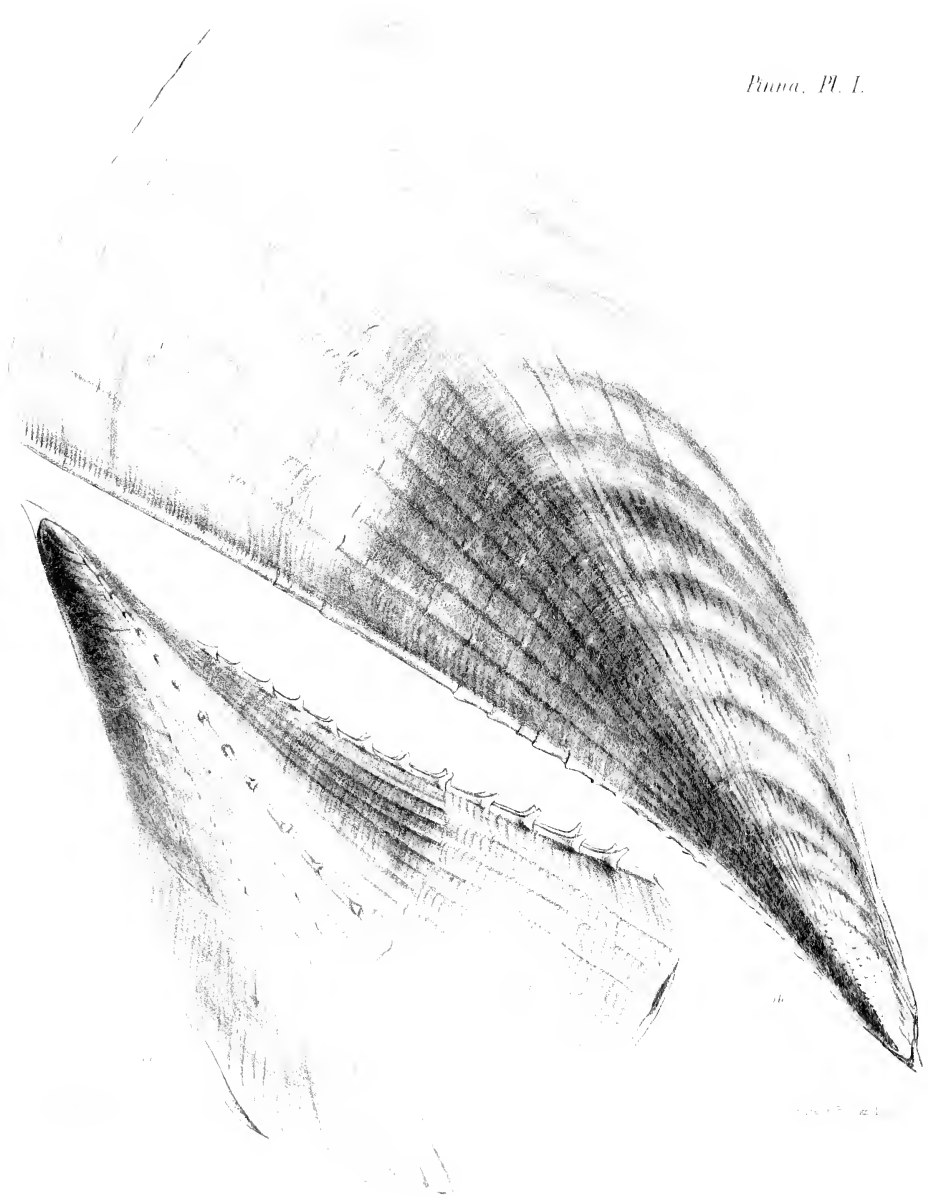
1859.

MONOGRAPH

OF THE GENUS

P I N N A.

Give me your gloves, I'll wear them for your sake,"
Shakspeare.



PINNA.

PLATE I.

Genus PINNA, Linné.

Testa angulatis, obliqua, longitudinaliter excavata, fibrillosa, siccata, perovque squamata, nudiolums teretibus, interstitibus saepe hincobtus. Carina lateralis, ehaebulis, ligata, subultra per totam longitudinalem ostium. Impressio, sceleris compassa.

Shell capivalve, oblique, longitudinally wedge-shaped, fibrillosa, 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 *Pinna* was therefore adopted by the founder of our nomenclature in his 'Systema Naturæ'; and it is one of the few Linnæan genera that has escaped the knife of modern genus-mongers. The *Pinnae* 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. serotina*, very minute and sharp; in others, as in *P. acuta* and *Cuningii*, raised and tubulous; and in others, as in *P. nobilis* and *engosa*, promiscuously distorted; while many species, as *P. fucata*, *bicolor*, and *Philippinensis* are smooth. They are all of fibrous brittle texture, and often brilliant in colour, though a dull-olive rather predominates.

The *Pinnae* 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 1 (Fig. a. b. Mus. Cuning.)

PINNA CHEMISITZII. *Pinna, testâ subarcuata-trigona, tenui, ventricosa, sordide olivacea, longitudinaliter radiatâ costâ, costis laterali subobsoletis, ventris, interstitibus transversè striatis; concentricè subplicatâ, plicis distinctibus, cili crenatis; marginè dorsali incurvato, plerumque auricato-squamato.*

CHEMISITZ'S PINNA. Shell somewhat acutely 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 sealed.

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

Hab. Philippine Islands; Cuning.

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



PINNA.

PLATE II.

Species 2. (Mus. Cuning.)

PINNA SEMINUDA. *Pinna testâ trigonâ, truncatâ, latere postico longitudoaliter costato, multisquamoso, squamis tenuibus, erectis, latere antico squamis copiosis minutis, recens umbones subobsoletis, rugis perpaucis amplis concentricis; sorfulâ dirivâ.*

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, *Ann. sans vert.* vol. vii. p. 61.

Pinna squ. obsoletâ, 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. Cuning.)

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

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.

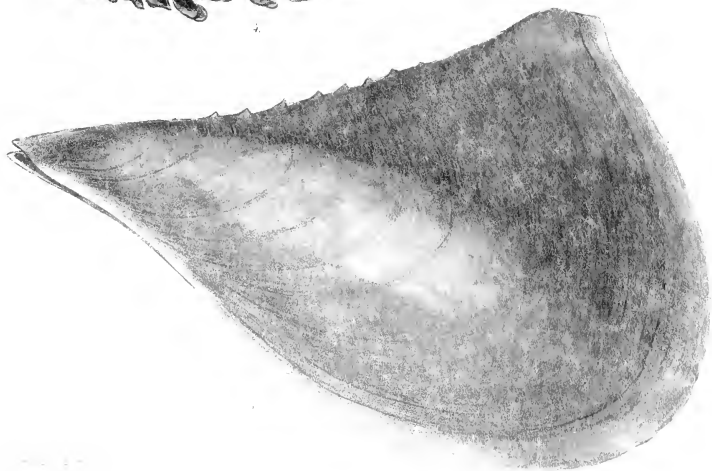
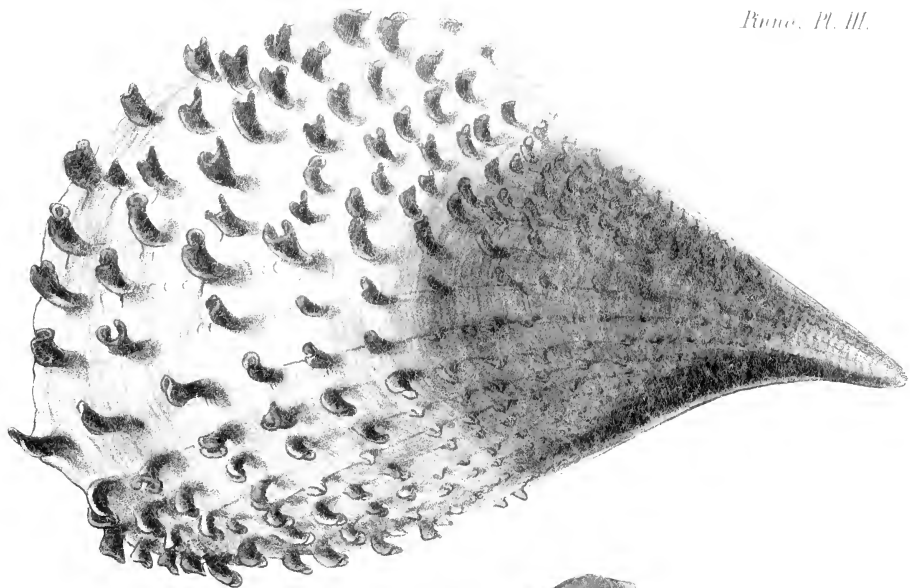
LINNEUS, *Syst. Nat.* p. 1160.

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.



P I N N A .

PLATE III.

Species 4. (Mus. Cuming.)

PINNA NIGRA. *Pinn. testā triquā-flabellatā, versus marginē attenuatā, iris flexuosis obscure radiatā, vel levigatā, in squamatis squamis capitis distantibus, recurro-oculis, nigra.*

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

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

Pinna nigra, Lamarek.

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 boldly 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. *Pinn. testā obliquē triquā, subteratā, tenui, costis inflatā, levigatā, iris minutis obscure serratis radiatā, auricis profusē minutissimē serrato-squamatis, margine cardinali varicato-squamato, squamis parvis grandibus; olivaceo-cornes.*

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 Japanese *P. pectinata* of our European shores, with which it is confounded by Lamarek. 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.





PINNA.

PLATE V.

Species 7. (Mus. Catalog.)

PINNA VIGIDA. *Pinna testa subquadrata, subovata costellata, subrotunda, septa, sassa, laminae nervosae, ligula antica, cal. dorsalis.* (Linn.) *testa, sassa, septa.*

DESCRIPTION. Shell somewhat fan-shaped, ob-ovately ribbed, scaled, scales few, short, anterior side rigidly transversely wrinkled, fasciaceous-olive.

DELLAWAY. Descriptive Catalogue of Shells, p. 327.

Hab. ———.

Color, greenish grey, fan-shaped, growth, dark fuscous-livaceous on and irregular sculpture of prominent short, tubular scales.

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

CHEMISTZ. Conch. Cab. vol. viii. p. 229. pl. 99. f. 778.

Hab. Moluvas.

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

Species 9. (Mus. Catalog.)

PINNA RUPPII. *Pinna testa quadrilobata, ovata, costellata, utraque pleurochelys, pallide roseo-fulva, laminae, obscurissime longitudo-chelys, sassa et pleurochelys, antice et callosi, rotula obtusiuscula.*

RUPPIUS'S PINNA. Shell slenderly triangular, curved keeled in the middle, duly sloping on each side, pale-ash, rather transparent, very obscurely longitudinally ridged and posteriorly multi-lobed, anteriorly strongly obliquely wrinkled.

HANLEY. Proc. Zool. Soc. 1858.

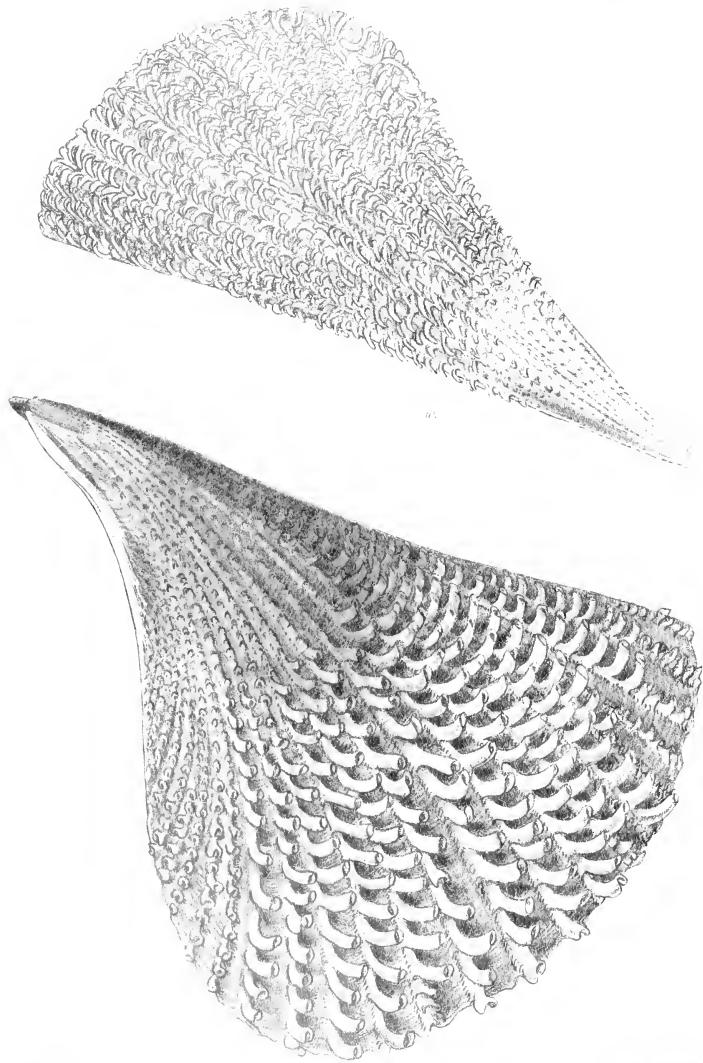
Hab. Moluvas.

Very closely allied to the preceding species, but much smaller and more curved, while the surface is more finely multi-lobed.

Species 8. (Mus. Catalog.)

PINNA VIGIDA. *Pinna testa ovata, subrotunda, costellata, sassa, septa, sassa, laminae, nervosae, ligula antica, cal. dorsalis.* (Linn.) *testa, sassa, septa.*

DESCRIPTION. Shell lanceolate fan-shaped, rounded in the middle, regularly sloping on each side.



P I N N A.

PLATE VI

Fig. 11. (M. 05602.)

The shell in fig. 11 is a young specimen of *P. spinosa* in which the scales are more produced though preserving the same characteristic promiscuous growth. I herewith describe and figured it as a distinct species, with the name *P. aculeato-spinosa*, which Polh concluded it with the Lamanan *P. lobata*. 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. *Pinna lobata pygmaea* (Schubert), *palustris*

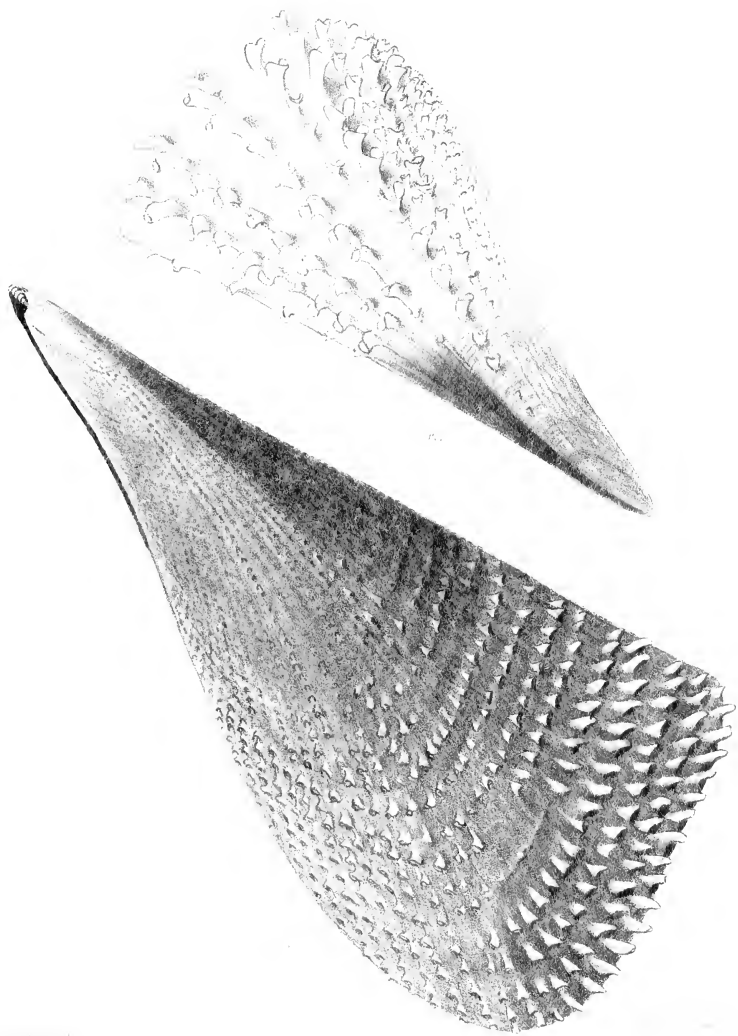
longitudinaliter striata, costis amplius squamatis, squamis regularibus, conspicue productis, recurvis, tubulatis, fusco-olivaceis.

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

SOWERBY, Proc. 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.



PINNA.

PLATE VII.

———— (MS. CUNNING)

PINNA ZELANDICA. *Pinna zelandica* (MUSCUNNING).
Pinna zelandica (MUSCUNNING).
Pinna zelandica (MUSCUNNING).
Pinna zelandica (MUSCUNNING).
Pinna zelandica (MUSCUNNING).

140. *Pinna zelandica* (MUSCUNNING). Shell somewhat lanceolate, horn longitudinal, rayed with a few small spiracles; ribs strong, rather distant, large, thin, 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.

————— (MS. CUNNING)

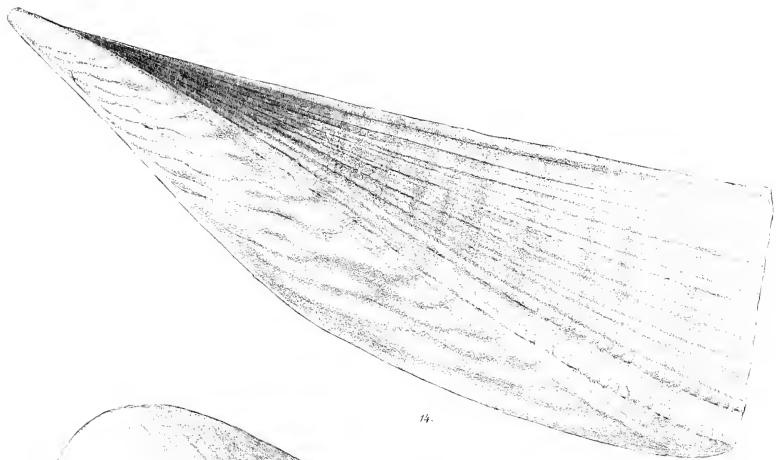
PINNA ZELANDICA. *Pinna zelandica* (MUSCUNNING).
Pinna zelandica (MUSCUNNING).
Pinna zelandica (MUSCUNNING).
Pinna zelandica (MUSCUNNING).

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

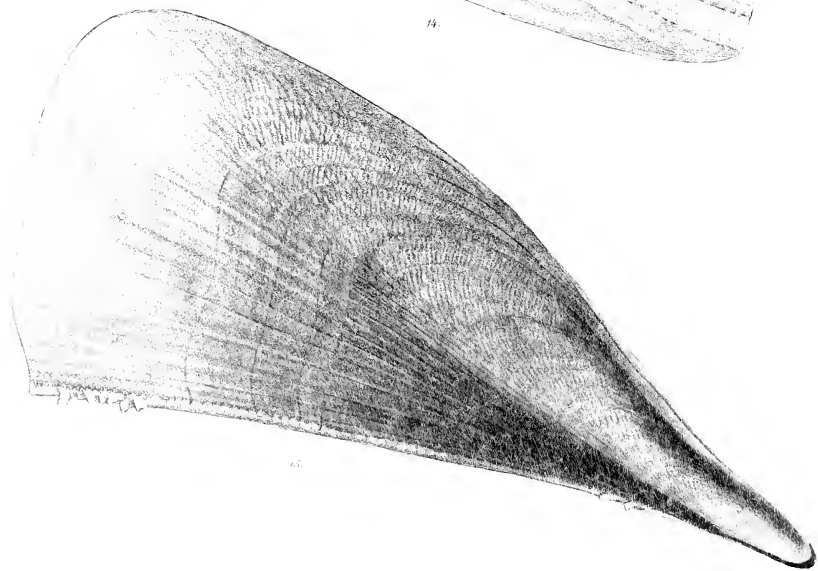
FIG. 1. Appendix to Dieffenbach's New Zealand

Hab. New Zealand.

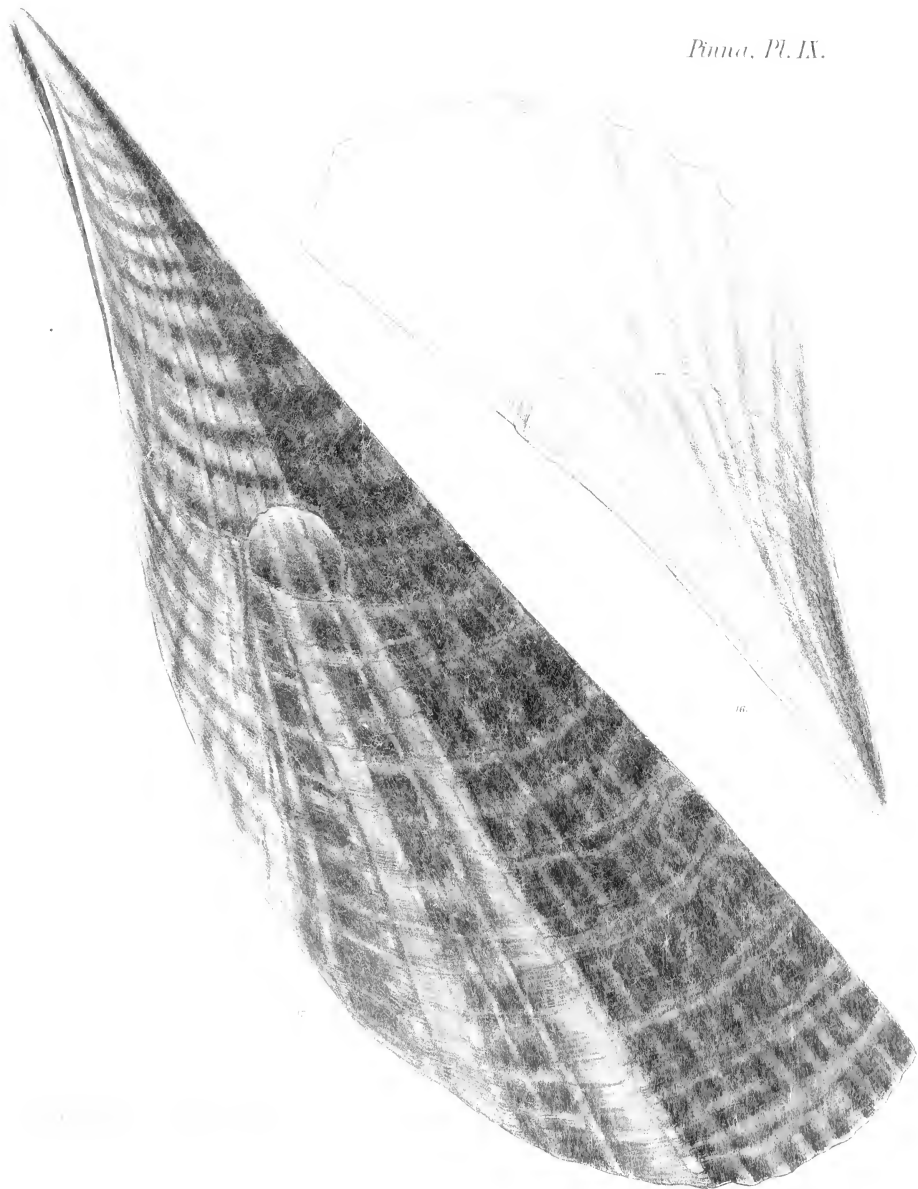
The scales of this species are distinguished for their very prominent, incomplete growth, being curiously short, open, and erect.



14.



15.



P I N N A.

PLATE IX.

SPECIES 16. (Miss Cuming.)

PISNA BILGATA. *Pinna testâ obliquâ (angulâ), non parâ
depressâ, undulatâ, sessilâ, simplici seu radiatâ cristatâ,
costis gradatâ, striatâ, undatâ alba, recessu umbi-
licis arcuatâ, acutâ.*

THE HERRING-LIKE PISNA. Shell obliquely triangular,
slightly rounded at the margin, thin, semitransparent,
radiately ribbed, ribs gradually broader toward
width, orange-red towards the umbos.

SWINSON. Manley MS. Miss Cuming.

Hab. Molucces.

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

SPECIES 17. (Miss Cuming.)

PISNA BICOLORE. *Pinna testâ elongatâ, marginâ de-
pressâ, undulatâ, radiatâ, costis angustis, subinæqualis,
nuda flexuosis, intersitiis parvis emarginatis, bicolo-
reâ, subpellucidâ, arcuatis, sigillatâ radiatâ.*

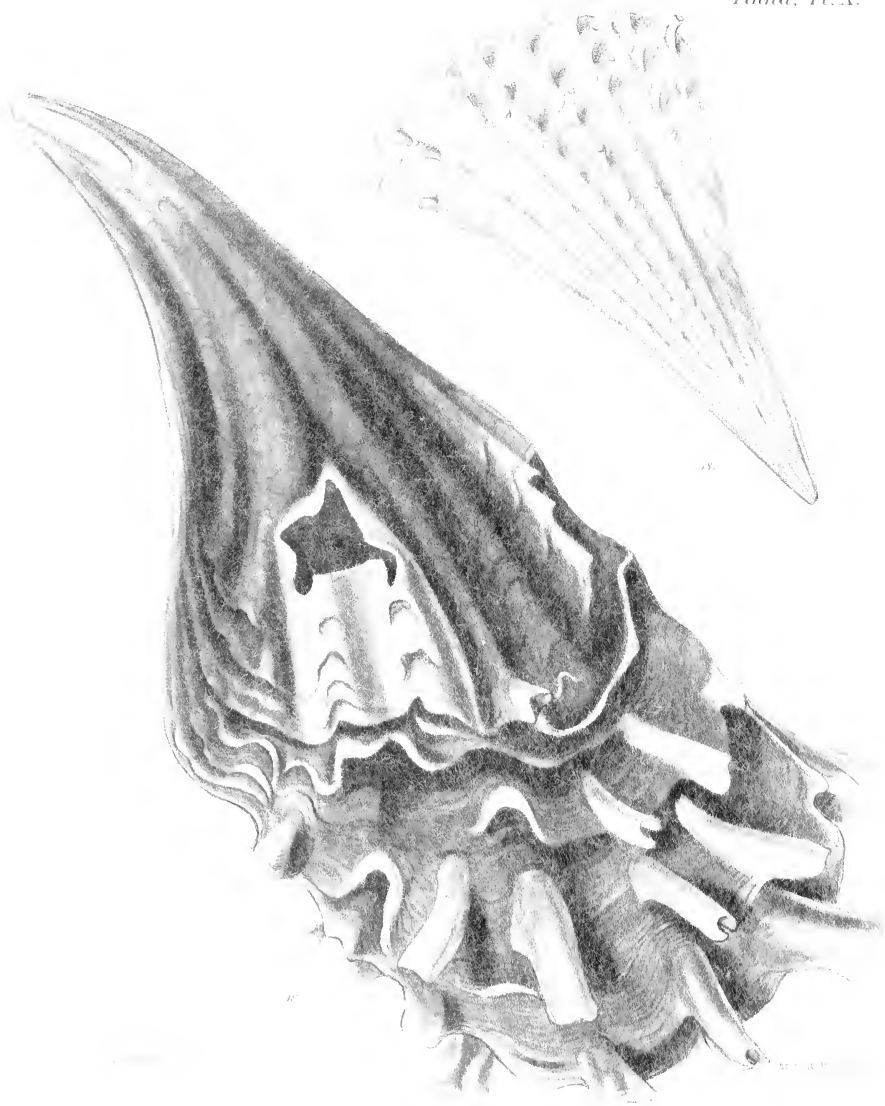
THE TWO-COLOURED PISNA. Shell elongated, slightly
rounded at the margin, radiately ribbed, ribs narrow,
rather obsolete, a little flexuous, intersities but little
emarginate; livid-ash, somewhat transparent, naved with
olive-black.

CUMING. Conch. Cal. vol. 11a. p. 224. pl. 30. t. 150.

Pinna bilobata. Lamourç.

Hab. Malacca.

This fine species is chiefly characterized by its black
naved pointing.



P I N N A.

PLATE X.

Species 18. (Mus. Cuming.)

PINNAEQUICOSTULUM *Pinna costata* Lyman, *aceros* *nubones*
summarivata, *pedata*, *costata*, *costis* *trivittata* *squam-*
ulimma, *dissecta*, *erecta*, *depressocostata*, *an-*
ura, *costata*.

THE THIN PINNA. Shell triangular, rather com-
pacted towards the umbos, radially ribbed, ribs
thinly scaled, ends distant, erect, oblique-ang-
ular, wall orange-red.

LENGTH. About 1.00 to 1.00 in. 34.

Place. West Indies.

Ha. ———

A bright shiny shell, of a compact triangular form,
contracted into a fan-shape towards the umbos, rather
densely ribbed, the ribs being serrated with nearly
rotundish scales.

Species 19. (Mus. Cuming.)

PINNA RUDIS *Pinna testa* *rufa* *lobulifera*, *tenacata*,
schretteriana, *abscondita*, *costis* *squamiferis*, *squa-*
mis *angustis*, *irregularibus*, *semitubulosis*, *normalis*,
lobata.

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

PINNAEUS. Syst. Nat. p. 1159.

Ha. West Indies.

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



P I N N A .

PLATE VI.

Species 20. (Mus. Cuming.)

PINNA PHILIPPINENSIS *Pinn. testâ elongato-trigoniâ, interioribus costis et sinu-angulis, medio subaristâ angulata, atrisq; lobis, anteq; levigatâ, sinu-angulata, et dorsocostâ sinu-angulata undulatâ et undata.*

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, Proc. Zool. Soc. 1858.

Hab. Philippine Islands, Cuming.

A fine, elongately triangular shell, conspicuously angular 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 *Pinn. testâ radiâ flabelliformi, anticâ rotundulatâ, subventricosa, olivaceo-cornata, ser-costatâ, costis radiâ irregularibus, subflexuosis, non radiâ ventralis, non 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 seeded.

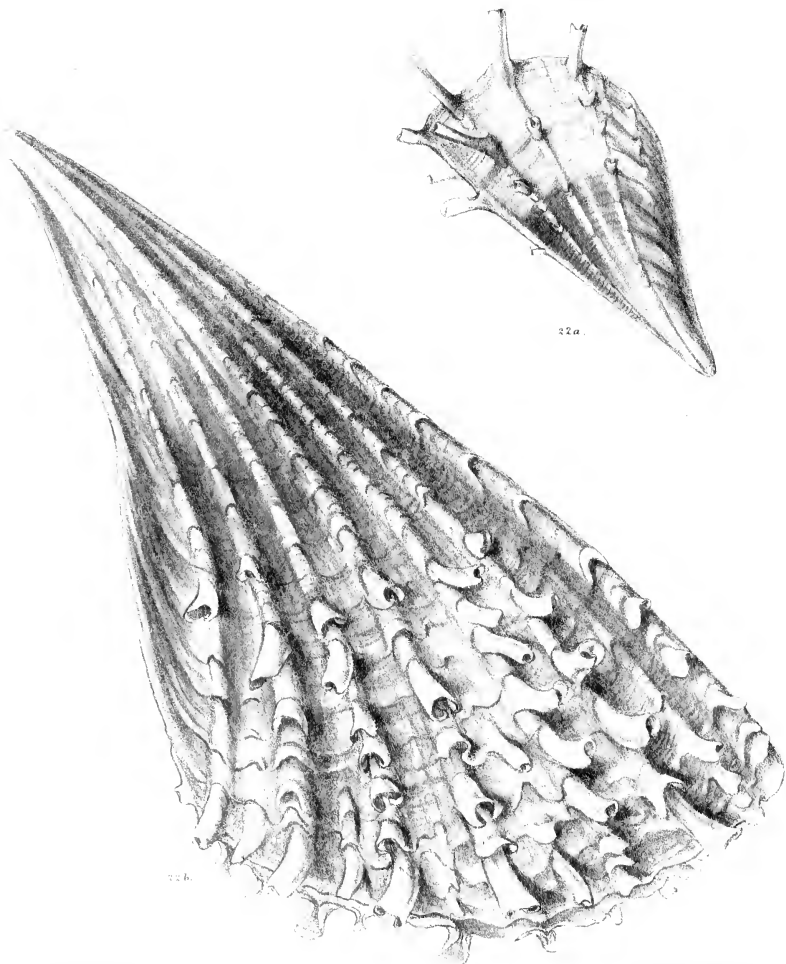
HANLEY, Proc. Zool. Soc. 1858.

Hab. —

Of very irregular growth, and ambiguous specific character.

2

3



22a

22a

PINNA.

PLATE XII.

Species 22. (Fig. 209. Mus. Canning.)

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

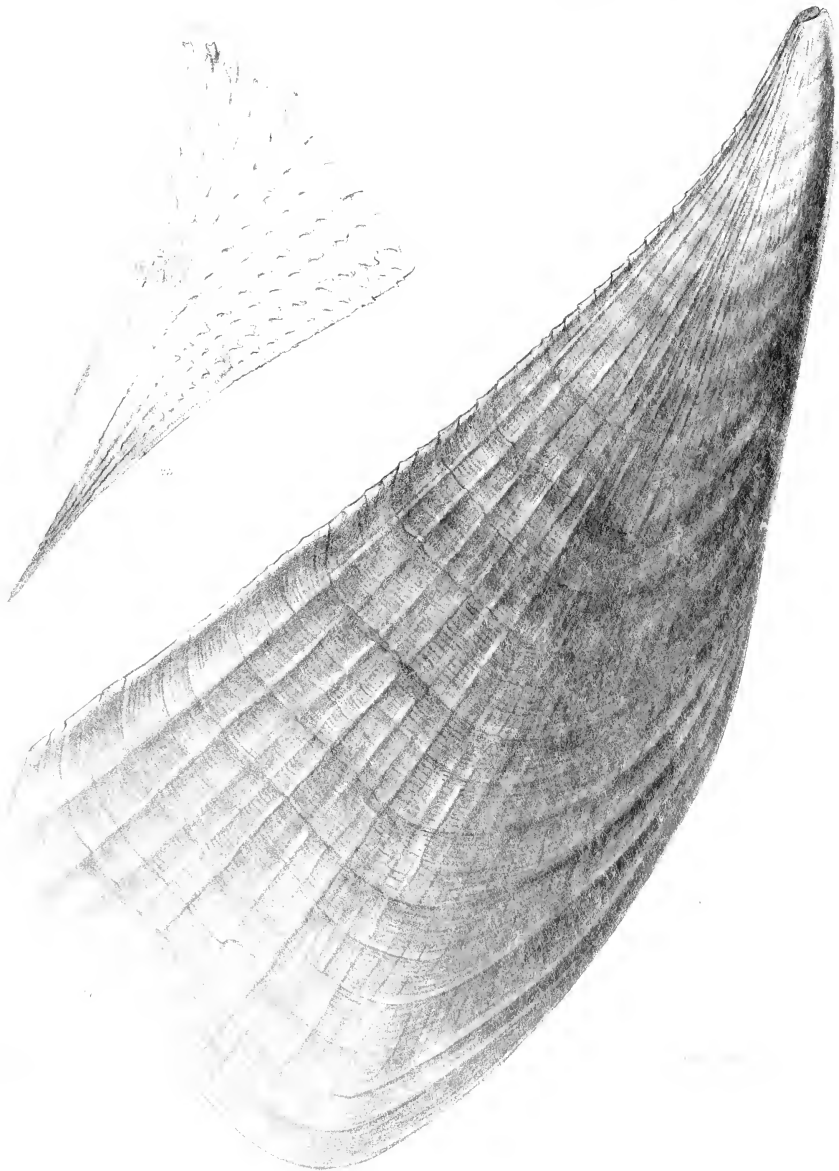
Hab. —²

PINNA FERUSA. *Pinna, testis subelongata, fimbriiformis, bizonaria, ventricosa, seg. ad septem, con. 56, costis unguis, spinatis, annulis nullis, tubosis, color regulaceus, subc. str., costarum 5. 5. Stilis late concoloris, raris, subc. str. b. spinatis straves-punctatis.*

THE LITTLE HORN PINNA. Shell somewhat elongately horn-shaped, rather thin, ventricose, six or seven-ribbed; ribs large, scated, scales large, tubular, somewhat irregular, rather erect; interstices between the ribs broadly concave; greenish-red, scales tinged with olive-yellow.

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 perula* is a deep amber-red colour, somewhat resembling that of *P. rubra*, and the scales have a semi-transparent yellowish tinge.

May, 1855.



PINNA.

PLATE XIII.

Species 23. (Mus. Cuming.)

PINNA MURICATA. *Pinna* *testis* *subelongato-fusiformis, lateribus* *curvatis, imbricatis, subretrocurvis, obscure muricatis, costis* *spinescentibus, angulosis, utrobique* *crurata.*

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

LINNEUS, Syst. Nat., p. 160.
Hab. West Indies.

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

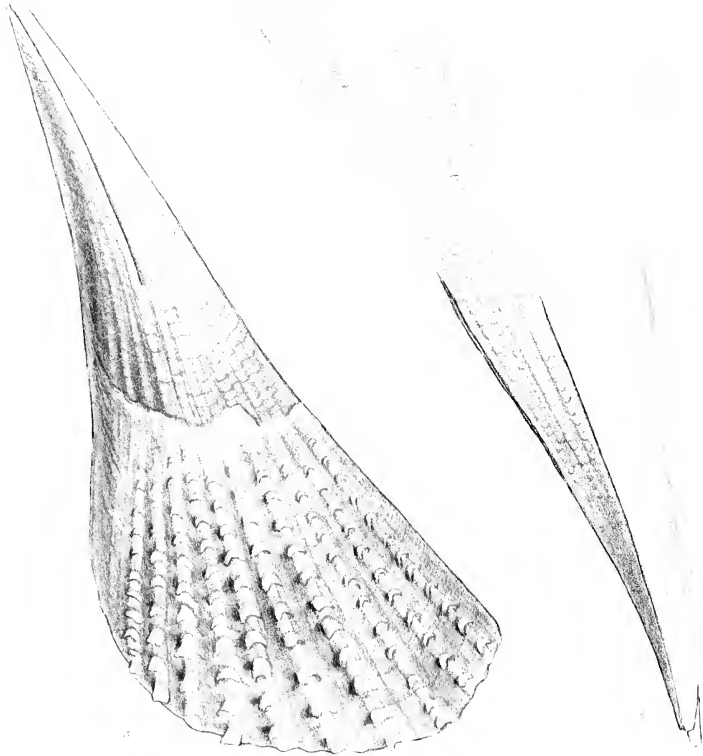
Species 24. (Mus. Cuming.)

PINNA LURIDA. *Pinna* *testis* *subelongato-fusiformis, lateribus* *curvatis, laevi, subretrocurvis, postice* *collatina* *libratis, marginibus* *subincurvis, obscure muricatis, costis* *concentricis rugosis, margine* *rotundato.*

THE LURID PINNA. Shell somewhat elongately fan-shaped, lurid-berry, 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 ducassated sculpture which is characteristic of that species is wanting in the specimen before us.



PINNA.

PLATE XIV.

Species 27. (Mus. Cuming.)

PINNA *TRICORNATA*. *Testis* *triangulo-subul-*
belliferae, tenuis, pallide obscurata, cervice rubrono-
vidis, areolis dimidiatis, liris fissi dualitis
modice, areolis areolis, areolis areolis, areolis;
areolis, areolis, areolis.

THE WHITE PINNA. Shell narrowly fan-shaped, incurved at the sides, an obly centricose in the middle towards the middle, radially flexuously sulcated, ridges almost obsolete, scaled towards the margin, scale short, open, amber-red, variously clouded.

Hab. Malacca.

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.)

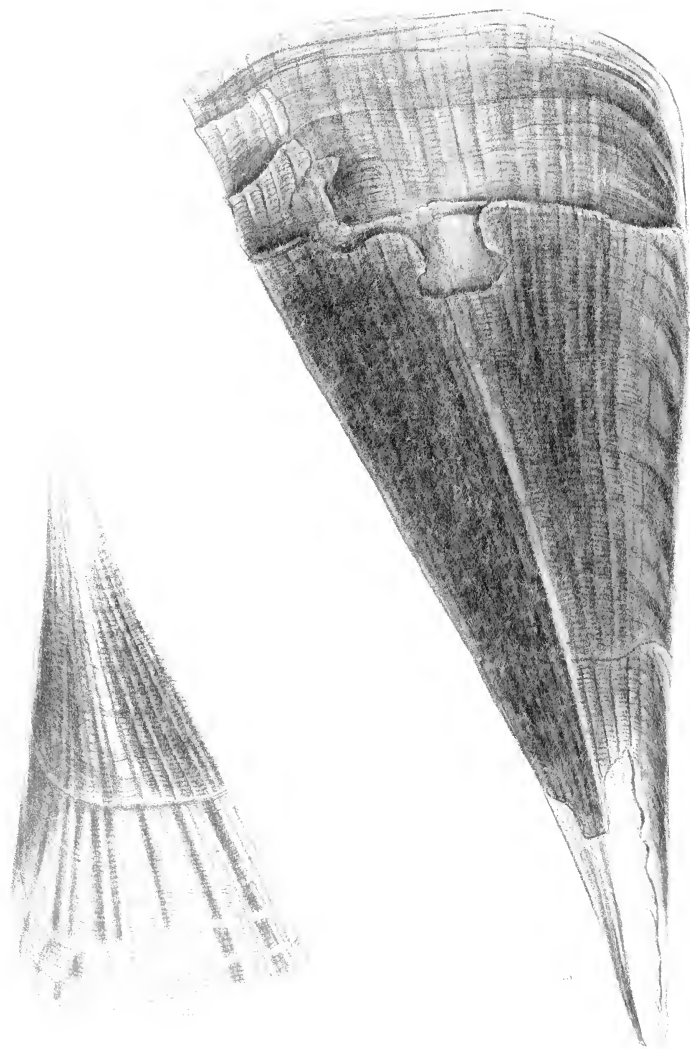
PINNA *ZEBUENSIS*. *Pinna, testis elongato-triangulari, subul-*
belliferae, tenuis, pallide obscurata, cervice rubrono-
vidis, areolis areolis, areolis areolis, areolis plus areolis ob-
latis, costis, areolis obscurate areolis.

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

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.



PISNA.

PLATE XX

Species 47. (Fig. 27, 28, Mus. Cuming.)

PISNA URMATA. *Pisna, testis elongato-trigona, radiatio
brada, liris unicolor, lachrya submarginata, interstitia
caucata, cicatrix concentrica, base depressa, alveo-
lari submarginata, lachryo-rimosa, sinuato-auriculata, fu-
cata.*

THE SMOKY PISNA. Shell elongately triangular, cordately
ridged, ridges thin, smooth rather flexuous inter-
spaces cogulate, densely crossed with concentric lines,

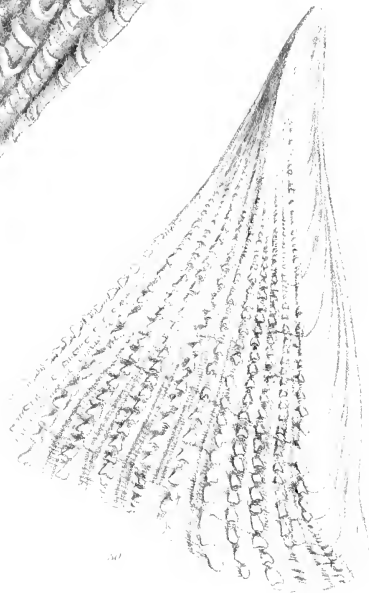
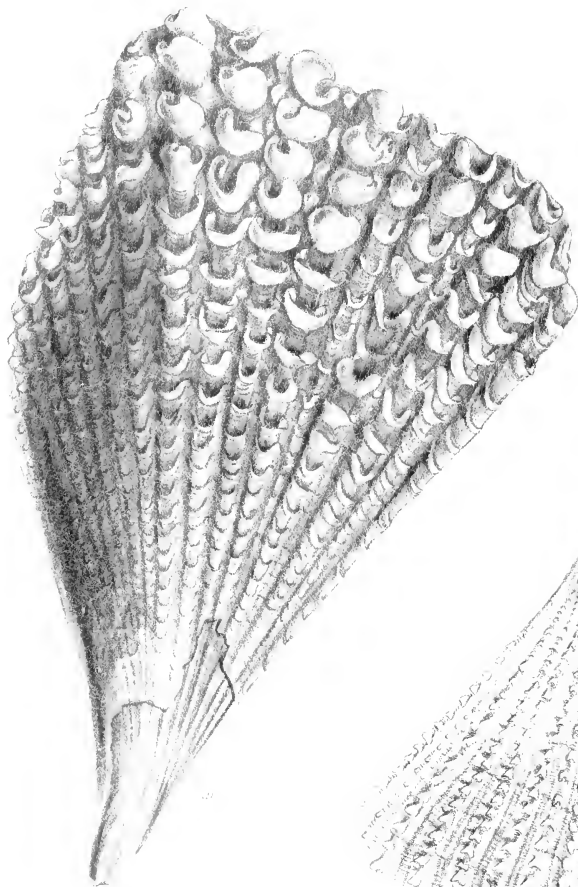
anterior side rather rugose, livid-ash smoked with
olive-black.

HANLEY, Proc. Zool. Soc. 1858.

Loc. 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.



PINNA.

PLATE XVI

Species 49. (Mus. Cuming.)

FIGURE 1. *PINNA CUMINGII*. *Pinna testa subquadrate, shell oval, white, with reddish-brown bands, rather narrow, rounded, dorsal spine, squarish late inflated, and triangular, subcircular serrated, iris, olivaceous.*

FIGURE 2. *PINNA*. Shell somewhat square fan-shaped, very stout, ventricose, radiately ribbed, ribs large, rounded, densely serrated, scales broadly inflated, sometimes globose, interstices serrated. Irid-olive.

HASLEY, 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.

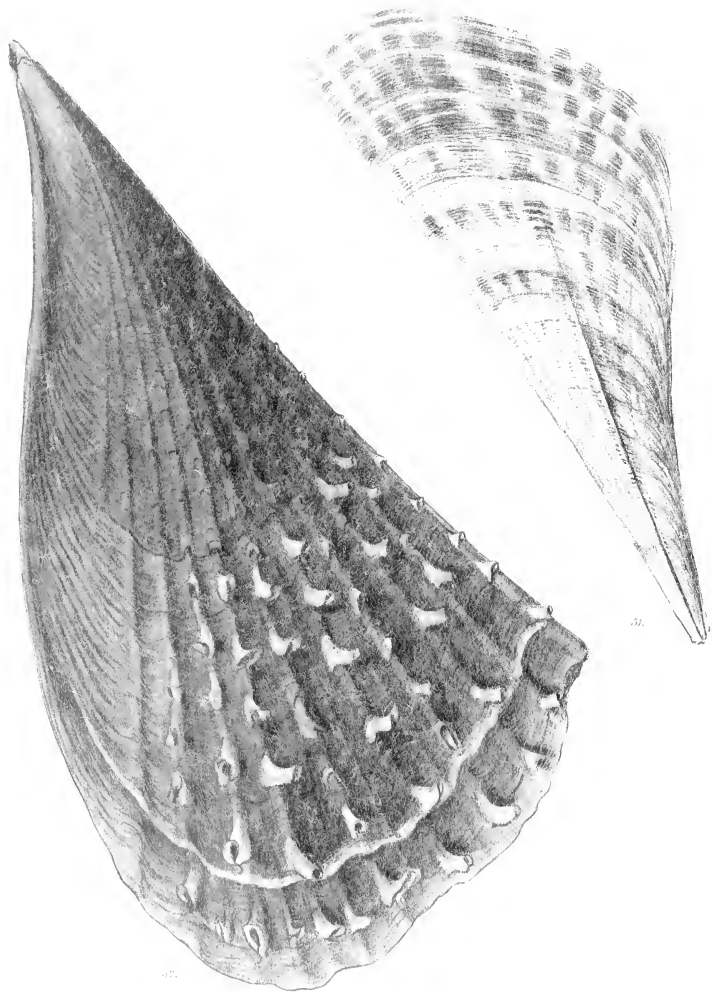
Species 50. (Mus. Cuming.)

FIGURE 3. *PINNA SEMICOSTATA*. *Pinna, testa triangular, prope umbones aculei, ventricosa, albicante-cornua, fasciis rufescentibus, lateribus rotundis, tenuicostata, iris squarissimis parvis palatis obsoletis, latere antico antice.*

FIGURE 4. *PINNA*. Shell triangular, sharply ventricose near the umbones, 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.



PINNA.

PLATE XVII.

Species 31. (Mus. Cuming.)

PINNA MADIDA. *Pinna testâ obliquè triangulari, subangustâ, ad latera incurvâ, cæcis anticosis acutè elevatâ, tenuissimâ, sicuti cæcis, testâ cancellatâ, squamis appressis, subobovatis, subrotundis, latis, detestabilatâ, lineamentis radiis transverse cæcis interruptis.*

THE SADDLE PINNA. Shell obliquely triangular, rather narrow, incurved at the sides, sharply raised towards the angles, rather thin, evenly concentrically lamellate, lamellæ appressed, rather obsolete, radiately obscurely wavy-ribbed, undulate, with interrupted sin. keel-like 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 in vertical development of the layers of growth.

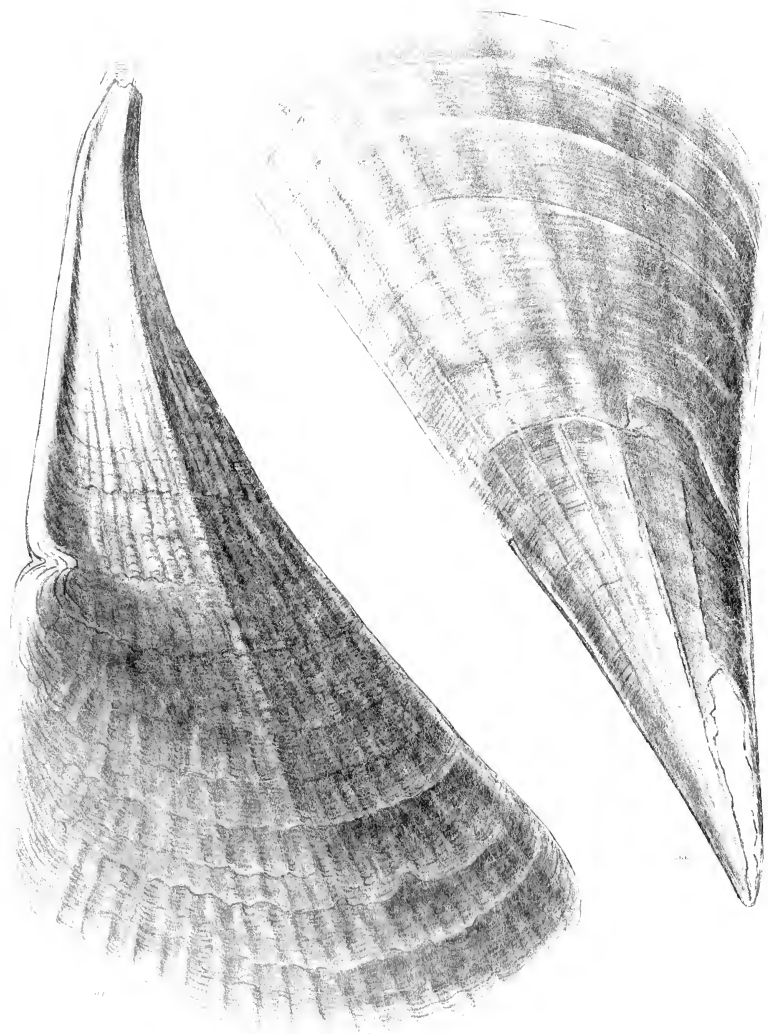
Species 32. (Mus. Cuming.)

PINNA SUBVIRIDIS. *Pinna testâ trigonè-falcatâ, anguligine postice recurvâ, antice rotundatâ, radiatâ simpliciter, costis squamis, squamis grandibus, recurvis subulobosis, costarum interstitiis late excavatis, latera antice conspicuè concentricè corrugatâ, olivaceo-cæcidâ, subpellucidâ.*

THE GREENISH PINNA. Shell triangularly fan-shaped, posterior margin incurved, anterior rounded, radiately ribbed, ribs scaled, 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.



P I N N A.

PLATE XVIII.

Species 1. (Mus. Cuming.)

PINNA MEXICA. — *Pinna testâ cono-pito-trigona, obobliquâ, loricatâ, radiatâ, undatis-liratâ, liris paucis, anticè plus minus obsoletis. rufescenti, fumeo-fusco lineâ.*

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 54. (Mus. Cuming.)

PINNA MENKEI. *Pinna testâ subtriangulâ, curvato-fimbriatâ, margine postico valde incurvo, radiatâ loricâ, liris confertis, subrotundis, undatis, anticè irregulariter rugosâ; rufescente-cinerea, fumeo-nigrescente tinctâ.*

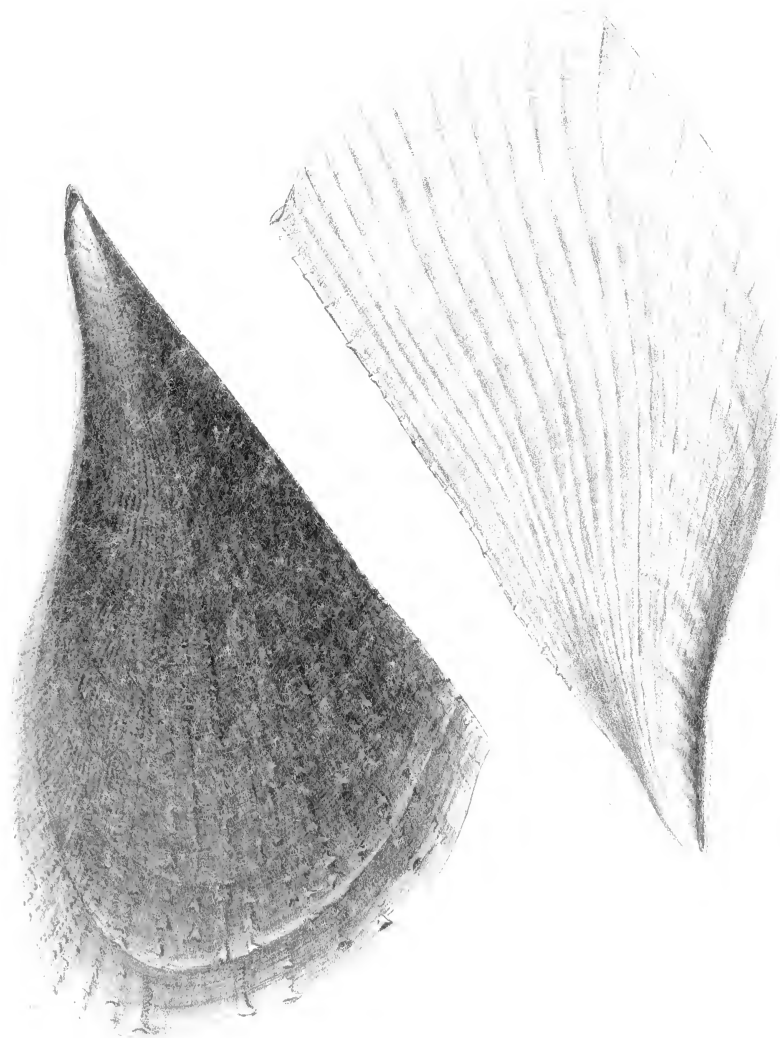
MENKE'S PINNA. Shell somewhat triangular, curved-fan-shaped, posterior margin much incurved, radiately ridged, ridges close-set, somewhat rude, waved, anteriorly irregularly rugose: reddish-ash, tinged with smoky-black.

HANLEY, Proc. Zool. Soc. 1858.

Hab. —

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

June, 1858.



PINNA.

PLATE XIX.

Species 10. (Mus. Cuming.)

Species 7. (Mus. Cuming.)

PINNA TRISULCATA. *Pinna testa ovata fimbriata, subventricosa, limbo undulato-angulato, obsolete radiata, radiis limbo fimbriato angulatis, regularibus, interstitiis compressis, radiis fimbriatis et irregularibus postice squamatis.*

THE TRISULCATE PINNA. Shell rudely fan-shaped, rather ventricose in the middle, semitransparent, radiately ridged, ridges rather narrow, regular, interstitia compressed, and the edges thinner, posterior edge scalded.

PRIMUM. Linn. 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.

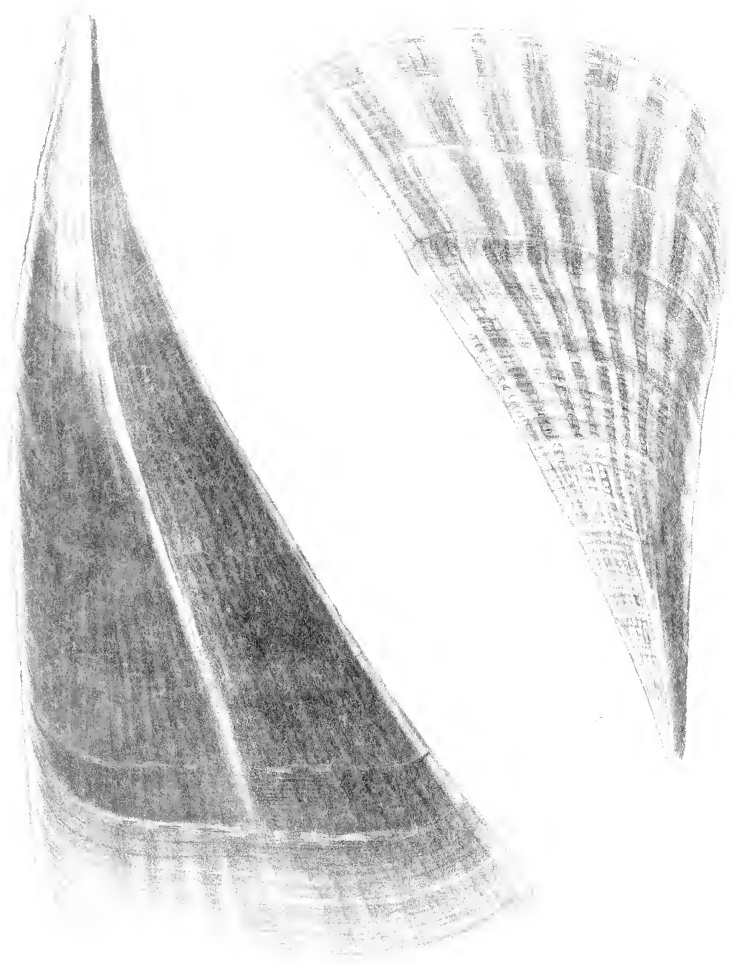
PINNA VENTRICOSA. *Pinna testa trigono-fimbriata, subventricosa, radiis limbo fimbriato, limbo parvis, radiis irregularibus et posterioribus squamatis, interstitiis promissis, rugositate limbo fimbriato, rugis irregularibus frequenter.*

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

BORN. Mus. Vindobonensis. pl. 4. E. 5.

Hab. Amboyna.

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



PINNA.

PLATE XX.

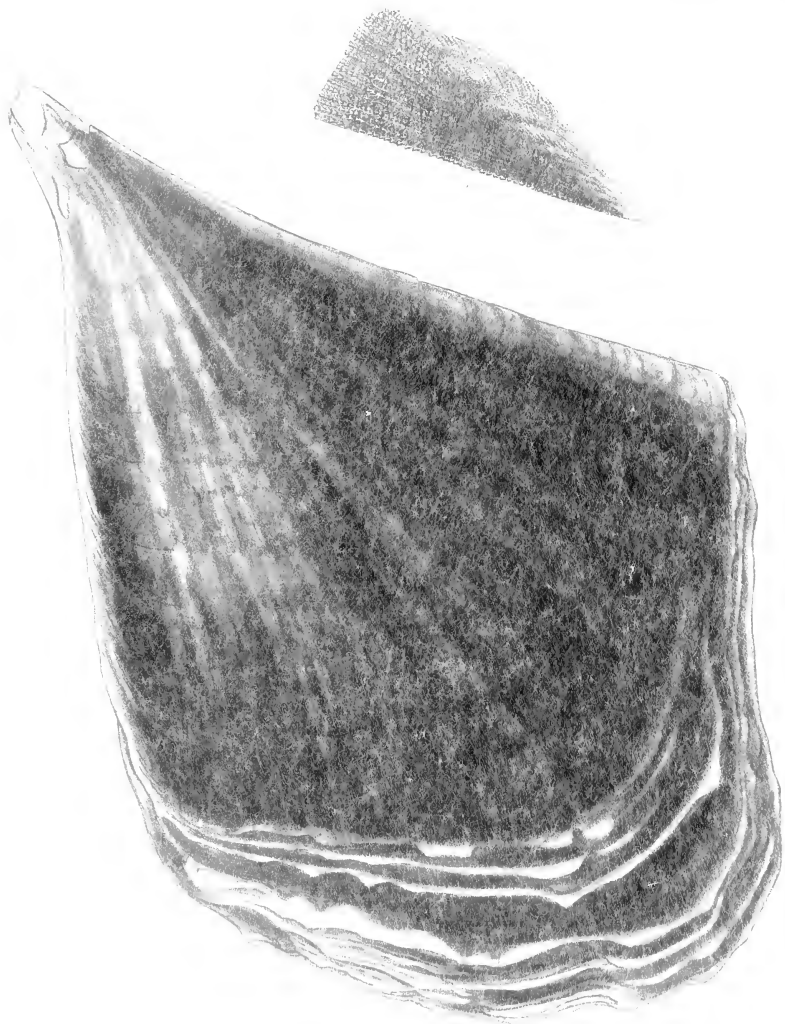
122. (Pl. 58; Mus. Cuming.)
 CUMING'S PINNA. *Pinna elongata-trigona*, posticè un-
 umbosa, umbones medio angulato-lanceolati, et
 radiis brevibus, brevibus, plus minus pellucidis, min-
 us minus atroce striatis, brachio-internali, versus um-
 bores minus radii olivaceo-flavescente fimo-
 sa, ut radii aut undato-radiati.
123. (Pl. 58; Mus. Cum.)
 HANLEY'S PINNA. Shell elongately triangular, in-
 creased posteriorly, angularly raised in the middle,
 not ridged on each side towards the umbones, smooth,
 and more or less transparent, very minutely concentri-

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

HANLEY, Pro. Zool. Soc. 1858.

Hab. Amboyna.

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



P I N N A .

PLATE XXI.

Species 39. (Mus. Cuming.)

PINNA PISNA. *Pinna testâ oblongo-trigona, testâ densè retâ, et spiculis minutis dissimulâ obliquis tuberculatis subrotundis serratis-serratis, nigrâ, versus ambum purpureo-roseo-testâ.*

THE LITTLE WING PINNA. Shell oblong triangular thin, densely ridged, ridges very thickly set with minute scales, anterior side somewhat roughly wrinkled, olive purple-d to 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.)

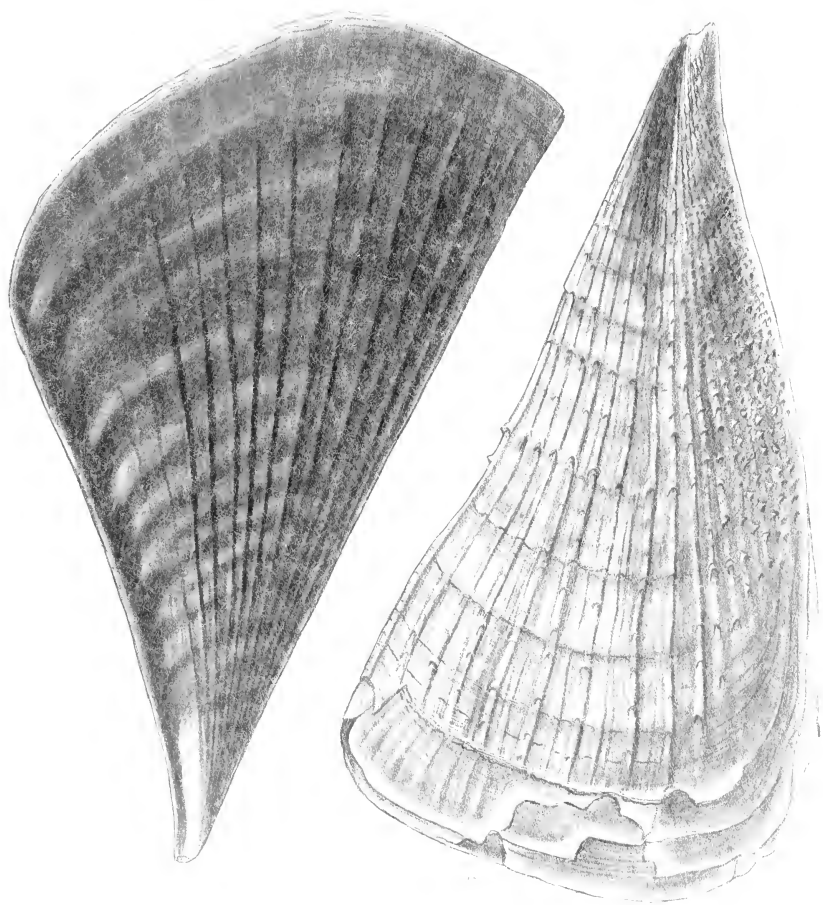
PINNA DELTOIDES. *Pinna testâ late trigono-fusulata, radiè planulâ, radiatum costatâ, costis irregularibus, fixâ obsolete; radiâ-fusâ, ferruginâ.*

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

MENK., 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.



P I N N A .

PLATE XXII.

Species 41. (Mus. Fleming.)

PINNA CROCOPURPUREA. *Pinn. testâ trigonâ, subrotundâ, radiatâ, rugâ, radiatâ, costâ, costâ irregularibus, regularibus, pectinatis, antice, utroque, utroque.*

FIG. CROCOPURPLE PINNA. Shell triangular fan-shaped, rather oblique, radiately ridged, ridges smooth, regular, anterior side not ridged, dark purple.

SOWERBY. Tankerville Catalogue, Appendix, p. 5, no. 101a.
Id. Anbayan.

The species is well characterized by the peculiar regularity of its ridged sculpture and by its dark purple coloring.

Species 42. (Mus. Cuming.)

PINNA PECTINATA. *Pinn. testâ trigonâ, subrotundâ, radiatâ, rugâ, radiatâ, costâ, costâ irregularibus, regularibus, pectinatis, antice, utroque, utroque.*

FIG. PECTINATED PINNA. Shell triangular, rather ventricose, radiately ridged, ridges somewhat twisted, sparsely spinose, anterior side rough and prickly-sided, semitransparent-olive.

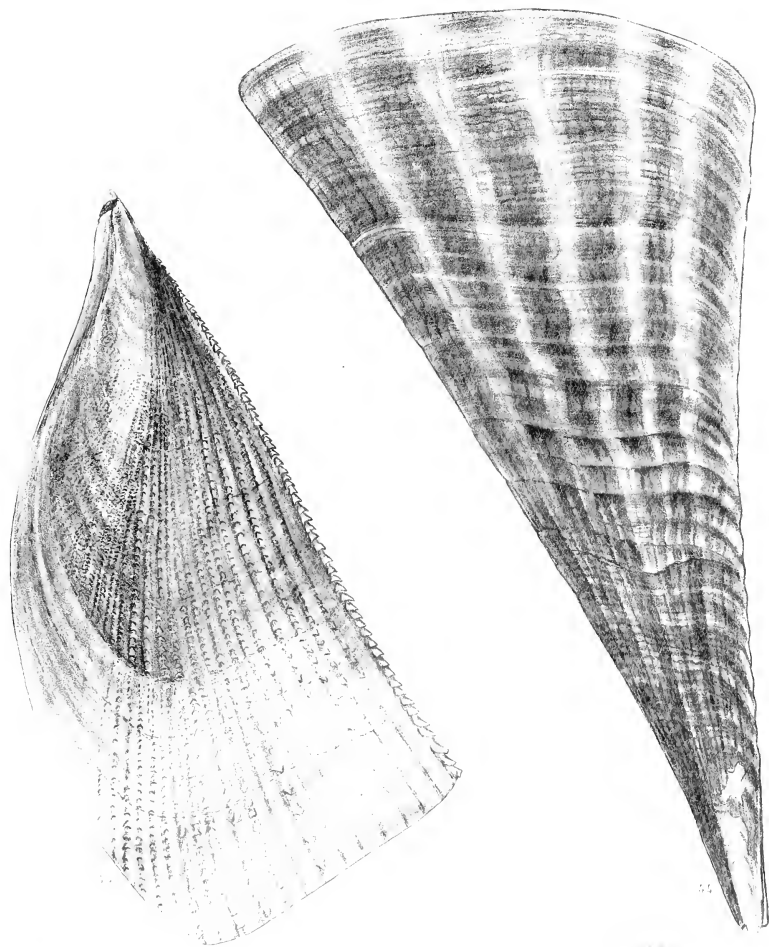
LINNEUS. Syst. Nat. p. 1169.

Pinna inflata, Chemnitz.

Id., Britan.

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

June, 1855



PINNAC.

PLATE XXIII

SPECIES 3. (MUS. CUMING.)

PINNA SEREA. *Pinna testa subquadrata, p. dilatata, leviter conchis sic, radiatum latus, latus frontibus, set. quatuor, densè spinosus, spinæ c. 10, acris, hinc hinc, ut supra postis spinosus, p. in. p. in. depressa, set. 10, inferius et in radiis costis, posticis, et radiis spin. subseriatis, emat. p. in. costis.*

TOO SAW PINNA. Shell somewhat square finished, thin, obtuse angled, ridged ridges thin, costate, densely scabed, scales small, setae, posterior edge densely serrated with large spines, 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, being the posterior

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

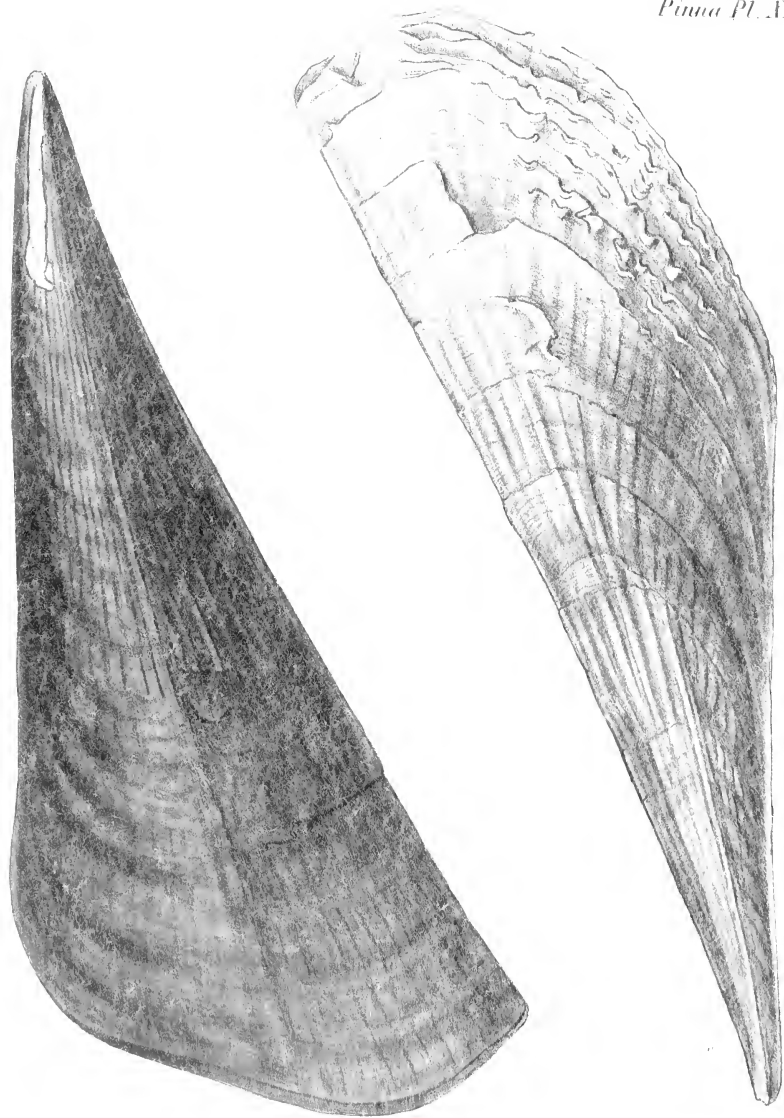
SPECIES 4. (MUS. CUMING.)

PINNA VESPERTINA. *Pinna testa elongato-triangulari, subterea subincurvata, prope marginem leviter, deinde leviter gibba; utraque clavicula, costis, frontibus et plicis costis creata.*

THE SCUBLAM PINNA. Shell elongately triangular, rather incurved at the side; ridged towards the angles, then smooth; olive-buff, ornamented with rays of smoky-brown and yellow.

Hab. ———

A beautifully-coloured species, partaking of the characters of *P. foetida* and *P. anglypta*.



PINNA.

PLATE XXIV.

FIGURE 17. (Magnified.)

1. *PINNA AFFINATA*.—*Pinna* (affinis) *affinata* n. sp. (color as in fig. 18).—*Stomatopoda*, *Pinna*.—*Pinna* *affinata* n. sp. (color as in fig. 18).—*Stomatopoda*, *Pinna*.—*Pinna* *affinata* n. sp. (color as in fig. 18).—*Stomatopoda*, *Pinna*.

FIGURE 18. PINNA.—Shell of *Pinna* (affinis) *affinata* n. sp. in outline towards the common radial ridge, (pages near the umbos produced) and regular thin corrugated anterior side connected wrinkled (color as in study-draw).

MUSEUM, Moll. New Holl. p. 36.

FIGURE 19. *Pinna* (affinis) *affinata* n. sp.

FIGURE 20. *Pinna* (affinis) *affinata* n. sp. in outline towards the common radial ridge, (pages near the umbos produced) and regular thin corrugated anterior side connected wrinkled (color as in study-draw).

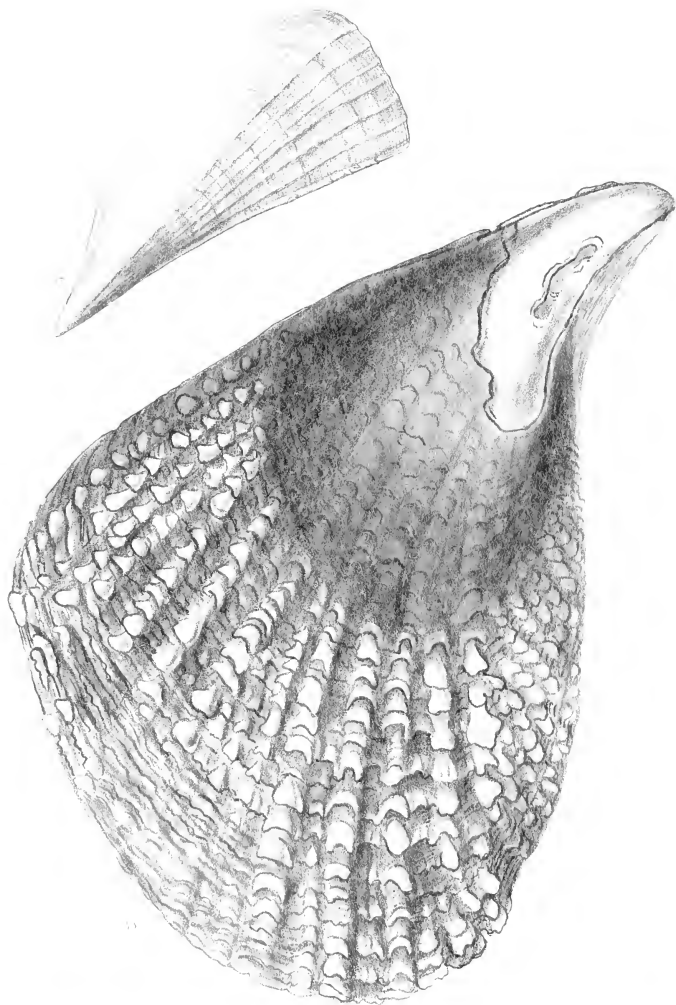
Species 16. (Mus. Cuming.)

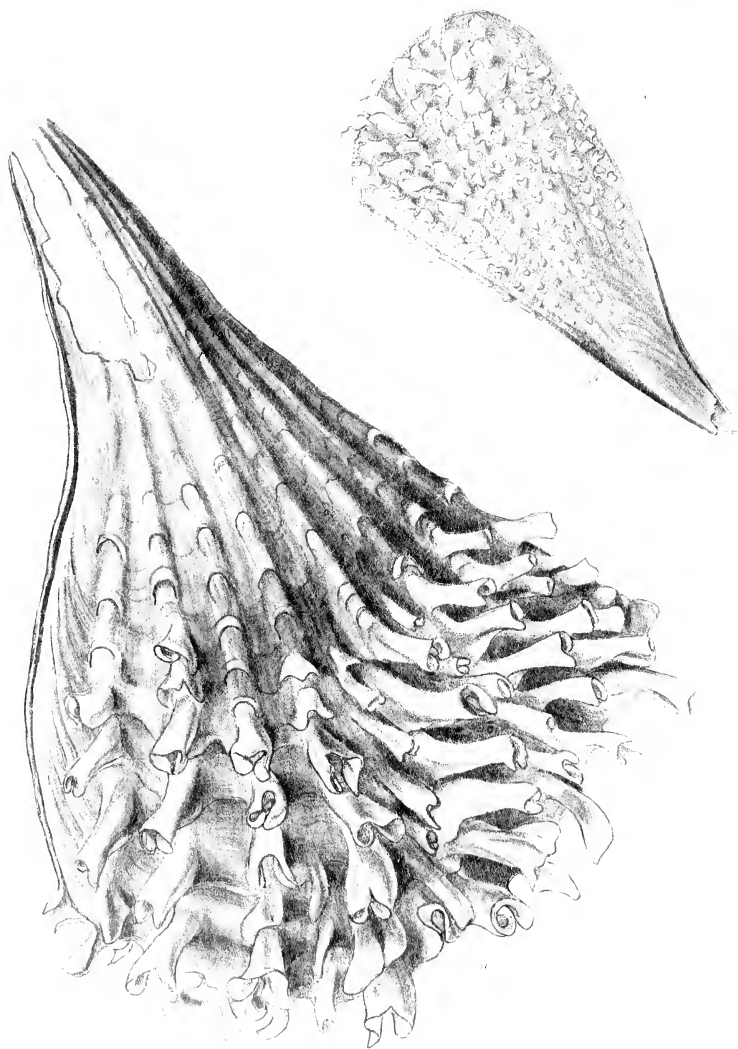
PINNA AFFINATA.—*Pinna* (affinis) *affinata* n. sp. (color as in fig. 18).—*Stomatopoda*, *Pinna*.—*Pinna* *affinata* n. sp. (color as in fig. 18).—*Stomatopoda*, *Pinna*.—*Pinna* *affinata* n. sp. (color as in fig. 18).—*Stomatopoda*, *Pinna*.

FIGURE 21. PINNA.—Shell of *Pinna* (affinis) *affinata* n. sp. in outline towards the common radial ridge, (pages near the umbos produced) and regular thin corrugated anterior side connected wrinkled (color as in study-draw).

MUSEUM, Moll. New Holl. p. 36.

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





PINNA.

PLATE XXXI

Species 49 (Mus. Cuming.)

PINNA COLUMBIANA. *Pinna tuberosa* Cuming, *Report, p. 23*
Ann. Acad. Nat. Sci. Philadelphia, p. 23, 1828
Proc. Acad. Nat. Sci. Philadelphia, p. 23, 1828

P'ORCIGNY'S PINNA. Shell somewhat narrowly triangular, ventrals, transparent-horny, tubately sealed, scales towards the margin spiculate, prominent, variously twisted.

HANLEY, *Proc. Zool. Soc.* 1878.

Il., West Indies.

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

Species 50 (Mus. Cuming.)

PINNA COGSA. *Pinna tuberosa* Cuming, *Report, p. 23*
Ann. Acad. Nat. Sci. Philadelphia, p. 23, 1828
Proc. Acad. Nat. Sci. Philadelphia, p. 23, 1828
Ann. Acad. Nat. Sci. Philadelphia, p. 23, 1828
Proc. Acad. Nat. Sci. Philadelphia, p. 23, 1828

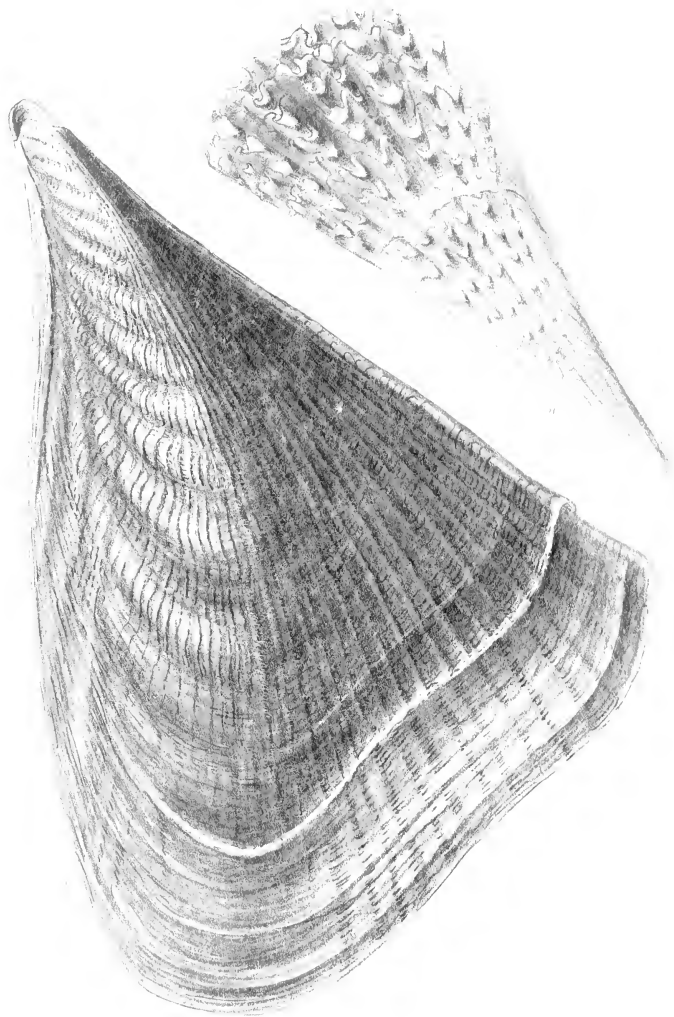
FIG. 1000. PINNA. Shell large, wide, triangular, contracted towards the umbones, longitudinally, obscurely radiately ribbed, ribs flat, of scales towards the margin, scales large, elongated, irregular, somewhat to curved, tubaceous, tubular.

SOVERBY, *Proc. Zool. Soc.* 1875, p. 87.

Il.! Isle of Rey, Bay of Panama (from seal-snakes) Cuming.

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

August, 1878.



P I N N A.

PLATE XXVII.

Species 51 (Mus. Cuming.)

1838. ANGLISANS. *Pinna testis angustiorumata*, *truncat.*
pinnae *et* *testis* *radialis*, *versus* *umbones* *in* *duo* *an-*
gulis, *spines* *et* *radialis*, *umbilis*.

TYPE: KARROW'S PINNA. Shell narrowly wedge-shaped,
rayed with purple-black, rugled in the middle
towards the umbones, scalid, scales short, waved.

LAMOUR. *Annales* *Sci.* *Nat.* *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 STRANGLI. *Pinna* *1* *52* *Strangli*, *line* *pubescenti*

solito, *umbili*, *virido* *nygra*, *purpurea* *lineata*, *radiato-*
lineata, *linea* *anterioris*, *sub* *umbilis*, *versus* *marginis*,
pinna *umbones* *obsoletis*, *latera* *umbilico* *ventricosa*, *rugoso-*
lineata *radiali* *pleuro* *conjugata*.

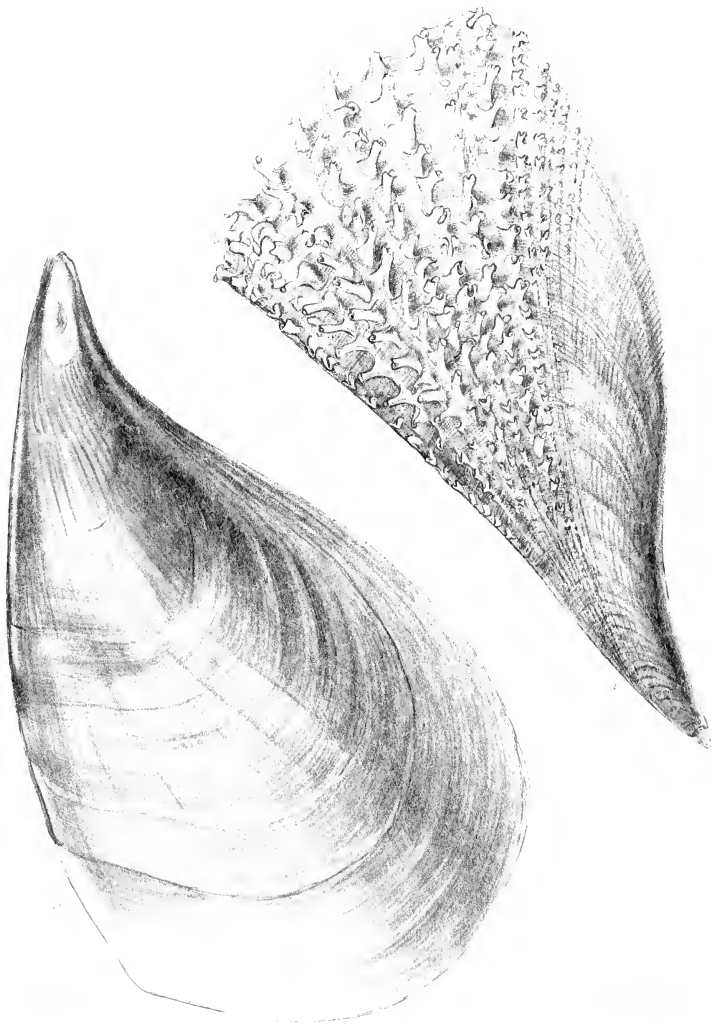
STRANGLI'S PINNA. Shell triangular, broadly fan-shaped,
somewhat irregular, livid-black, tinged with purple,
radially ridged, ridges numerous, rather sharp, more
or less obsolete towards the margin, anterior side
ventricose, rough, broadly, strongly, plicately wrinkled.

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

Hab. Moreton Bay.

A bold characteristic species, of a broad, ineoarth, tri-
angular, 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. *Pinna testis trigona, margine post. convexo, antio flexuoso-cuneolato, tenui, semipellucida, crassa, radiata levi, tria, conspicue squamulis, spinosis tubulosis, acule erectis, irregularibus, lateribus nitido.*

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.

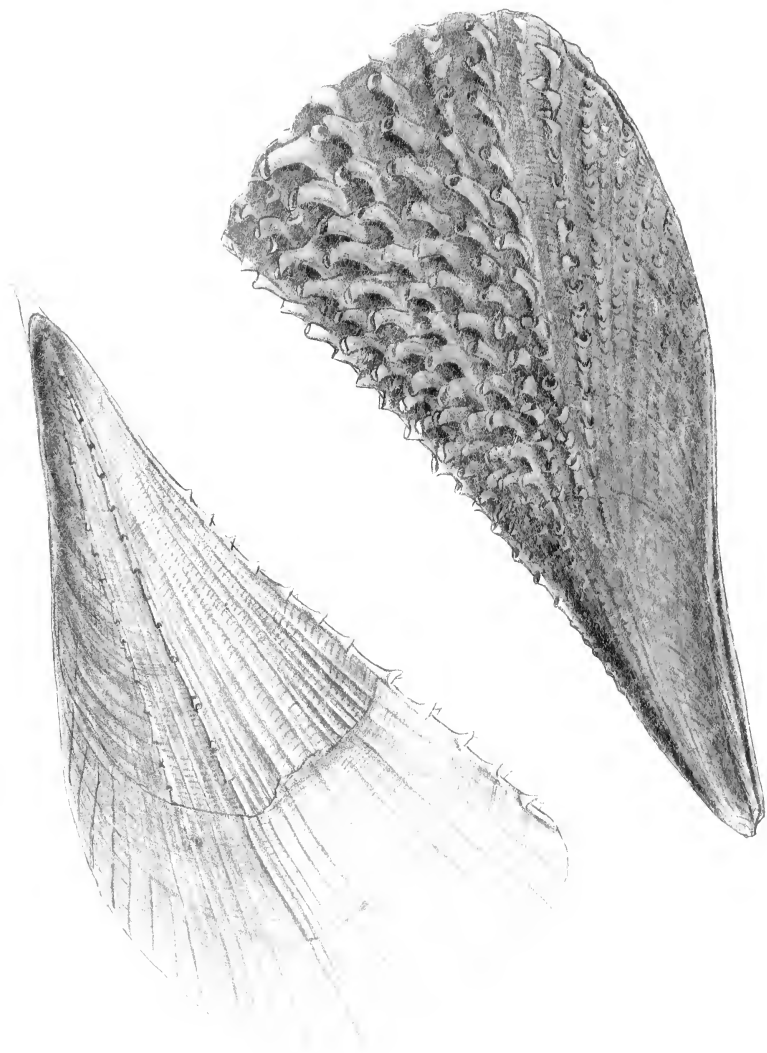
Hab. West Indies.

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

Fig. 53. (Mus. Cuming.)

The shell here figured, *Pinna angus* of Pennant, Brit. Zool. vol. iv. p. 115, and Lamarck, Ann. 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.

August, 1855



PINNA.

PLATE XXIX.

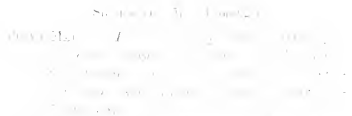


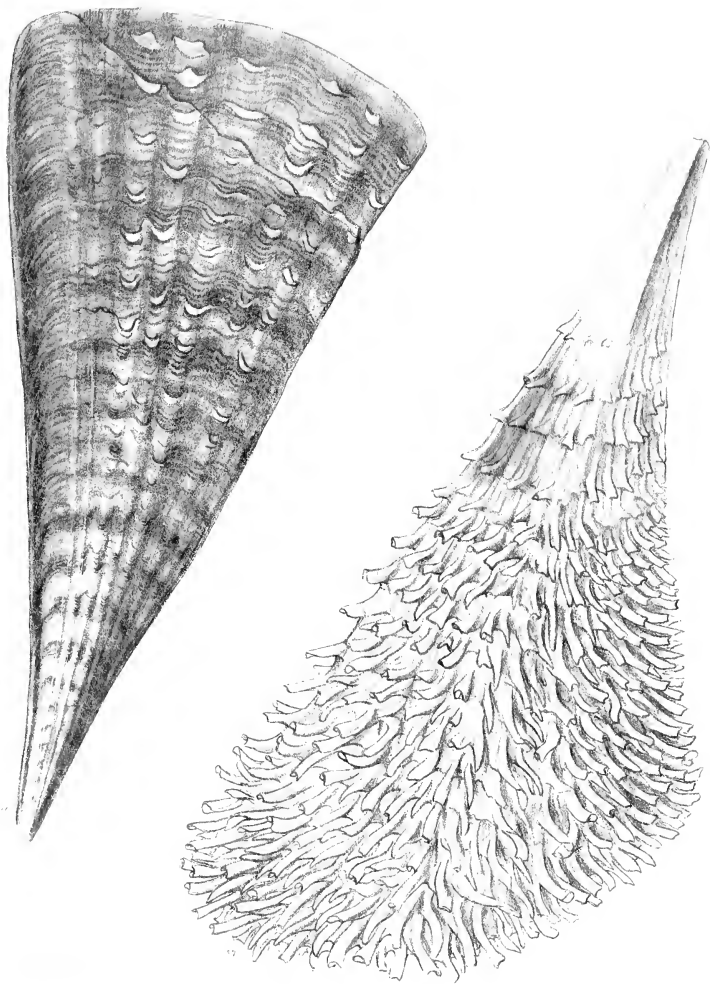
FIG. 4. (Linn.). Shell of *Pinna* (wood) in general, showing the long commutatory tubular ribs, shell-lamellae somewhat elevated posteriorly, and a small sessile pedicle (all by somewhat increased, but only rarely found).

SWOFFER, *Proc. Zool. Soc.* 1837, p. 84.
Pinna (from muddy bank), Cuning.

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

FIG. 5. (MUS. Cuning.)

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



PINNA.

PLATE XXX

Species 56. (Mus. Cuming.)

PINNA RECTA. *Pinna testâ oblongo-irregulari, lateribus sub-
marginatis, costâ, utrinque spina profusâ, subulâ, ab-
solutè intèr costata, costâ sup. effusâ in squamis brevis-
simo perparvis separatis.*

CHAR. OF P. PINNA. Shell oblong-irregular, sides slightly
curved, horny, profusely clouded with smoky-pur-
ple, absolutely broadly ribbed, ribs superfluous, rough-
ened with a few very short scales.

Loc. — Proc. Zool. Soc. 1858.
— Monterey.

Color. — Glossy, horny substance, rosy, purple and
blackish, and roughened with extremely short scales.

Species 57. (Mus. Cuming.)

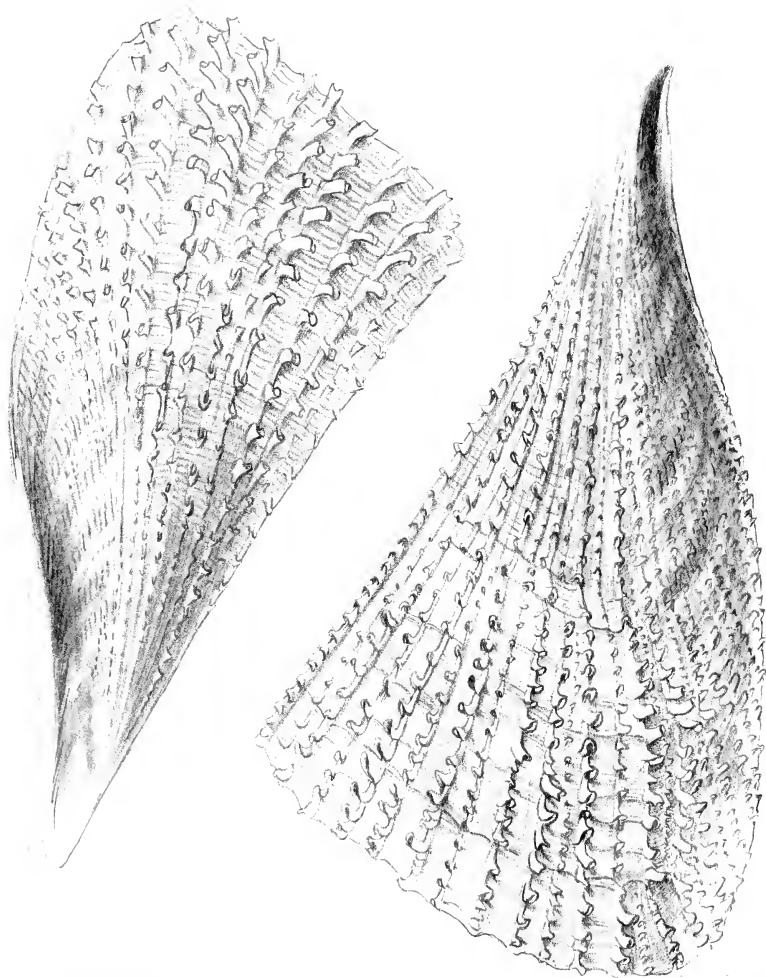
PINNA SOBILIS. *Pinna testâ trigono-fuselliferâ, sum-
pè v. discolorâtescente, costis radiâtes oblongo-oviferâ
collatis, costâ et dense velli oto-spinosâ, subulâ
lâvis, areolâtes, squamis variè divergentibus, lu-
tescentibus.*

CHAR. OF P. PINNA. Shell irregularly fan-shaped, semi-
transparent reddish, olivesh towards the umbos,
radially ribbed and densely prickly-scald, some of the
ribular, mostly recurved, scales vanishing diverging
yellow sh.

Loc. — Syst. Nat. p. 1460.

Ital. Adriatic.

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



PINNA.

PLATE XXXI

Species 58. (Mrs. Cuming.)

PINNA LINGULATA. *Pinna testis subtriangulata, antice
rotata, reflexo-angulata, medio et postice radiata
orbiculata, antice teste radiata, radiis spinulatis
spinosis regularibus, subtriangulari, convexa.*

THE LINGULATE PINNA. Shell linguately fan-shaped, reddish-brown, radately ribbed in the middle part on the posterior side, almost straight in the anterior; radial scales regular, somewhat oblong, recurved.

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

Hab. Near Puerto Rico (dredged from sandy mud at a depth of thirteen fathoms), Jamaica.

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

Species 59. (Mrs. Cuming.)

PINNA ASSIMILIS. *Pinna testis trigono-fanulata, antice
tamulata, subtriangulata, convexo-convexa, antice radiata
linea lineata, teste profunde squamulata, spinosis peculiari-
ter irregularibus.*

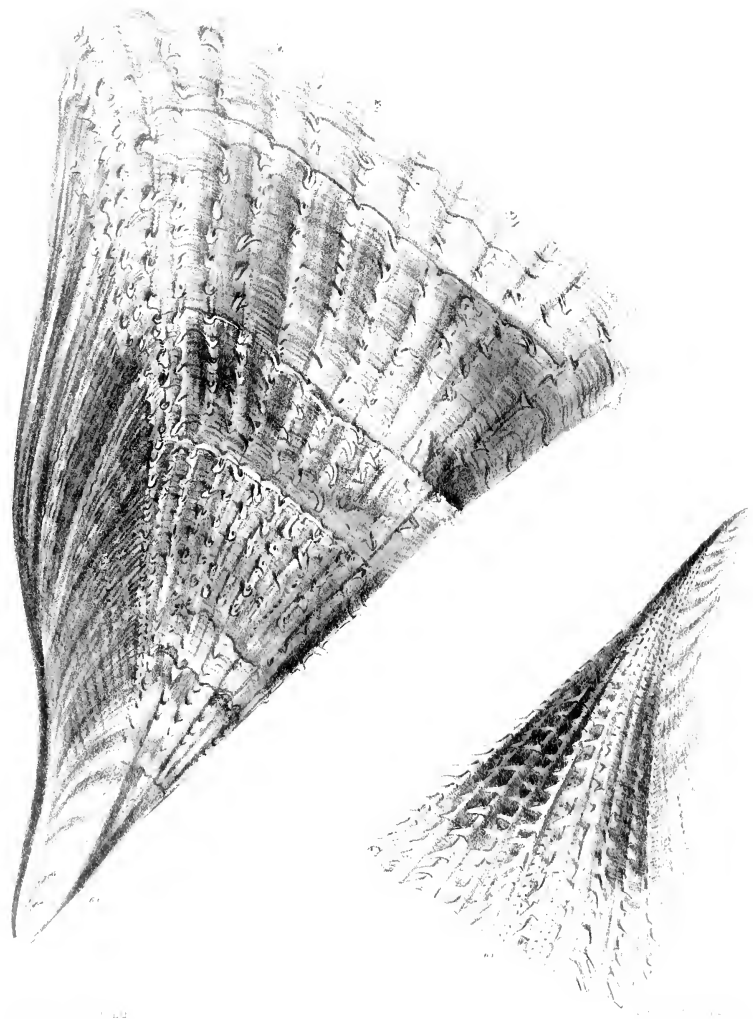
THE ALLOID PINNA. Shell triangularly fan-shaped, anteriorly swollen and somewhat rounded, ash-brown, everywhere rayed with ridges, ridges profusely scaled; scales peculiarly irregular.

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

Hab. Rames's Island, Torres Straits; Laut. Ince.

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

August, 1858.



PINNA.

PLATE XXXII

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

PINNA BYSTRIX. *Pinn. testâ lute canaliculata, leuicula, sagitata, posticâ subquadrali, coracâ, livido-purpureo-costâ et nigro-fesca variegatâ, multicostratâ, costis parvis, spinuatis, squamis subangustâ tubulosis, erectis, irregu archas, costarum interstitiâ latis, planis-costis, lamellis incrementi subcuspidatis*

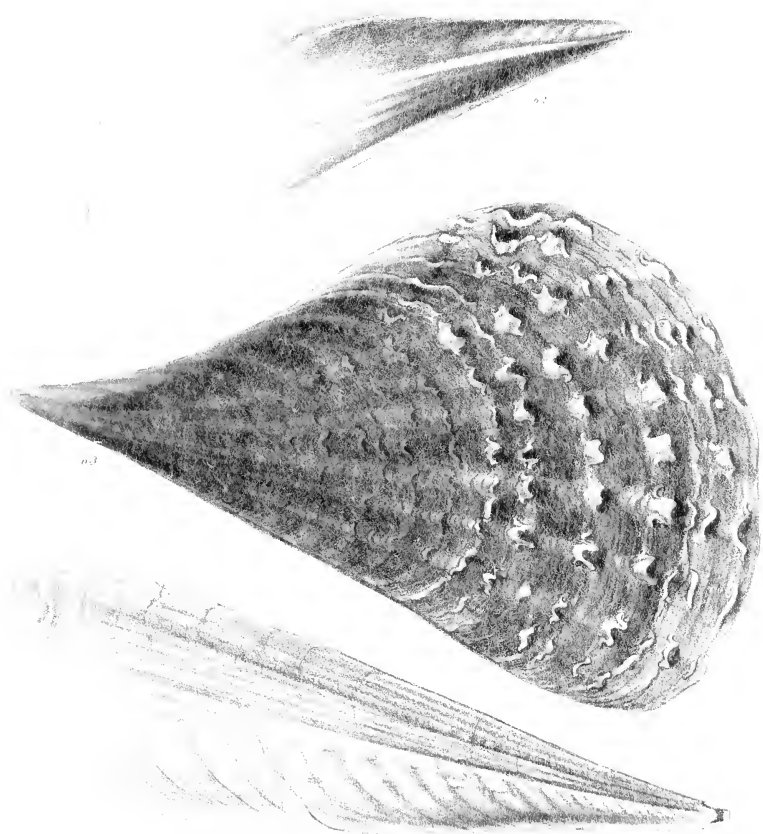
101 PORCUPINE PINNA. Shell broadly wedge-shaped, rather thin, inflated, posteriorly somewhat square, horny, variegated with livid-purple and black-brown,

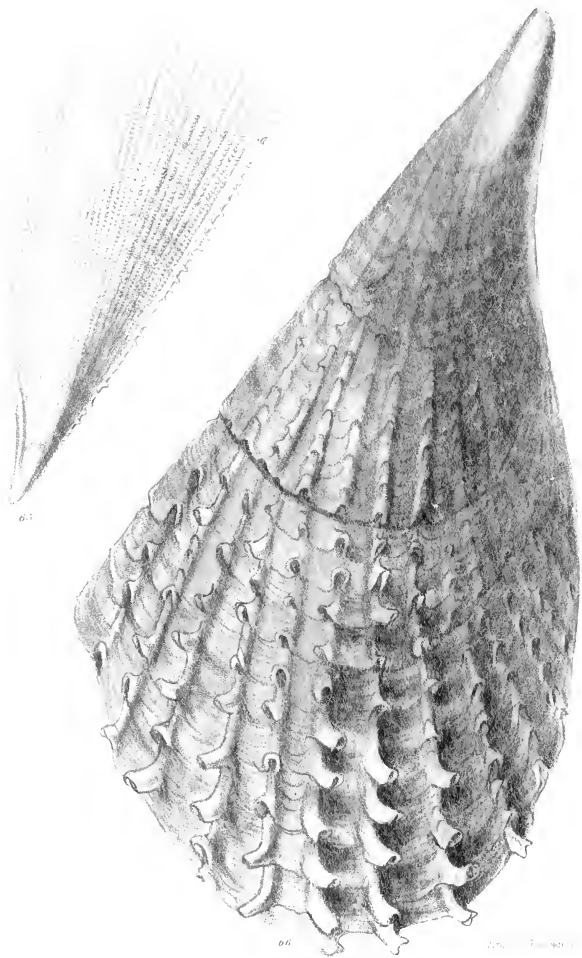
many-ribbed, ribs small, squamate, scales rather slenderly tubular, erect, irregular, interstices between the ribs flatly concave, with the lamellæ of growth rather conspicuous.

HANLEY, Pro. 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.





P I N N A .

PLATE XXXIV.

Species 65. (Mus. Brit.)

PINNA SERRATA. *Pinna testâ oblongo-fuselliformi, margine subquadrata, pellicula-corneâ aut vitrea, radiâliâ fibrâ, liris numerosissimis, testâ acutè spinulata, antice decussatè corrugato-striatâ, margine dorsali antè serrato-squamulâ.*

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. *Pinna testâ oblongo-fuselliformi, margine rotundatâ, solidioribus, subinflatâ, olicacè radiatâ costatâ, costis raris, subdistantibus, fortiter spinulatis, spinulis exsertis margineâ tubulosâ et recurvis, costarum interstitiâ 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. 1855, 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.

PINNA.

name	species	date	pages
<i>aculeatissima</i> , Clemenitz	VI.	10	nobilis, <i>Linnaeus</i> XXX
<i>aita</i> , <i>Sowerby</i>	VI	11	nigra, <i>Clemnitz</i> III.
<i>angustata</i> , <i>Linnaeus</i>	XXXVII.	51	nigrita, <i>Linnaeus</i> III
<i>assimilis</i> , <i>Hawley</i>	XXXI	59	<i>Natallia</i> , <i>Conrad</i> IV
<i>atro-purpurea</i> , <i>Sowerby</i>	XXII	41	<i>papyracea</i> , <i>Clemnitz</i> VIII.
<i>attenuata</i> , <i>Reeve</i>	XXIV	16	<i>pectinata</i> , <i>Linnaeus</i> XXII
<i>bicolor</i> , <i>Clemnitz</i>	IX	17	<i>pernula</i> , <i>Clemnitz</i> XII.
<i>bullata</i> , <i>Schrank</i>	IX	16	<i>Philippinensis</i> , <i>Hawley</i> XI.
<i>Carolinensis</i> , <i>Hawley</i>	XXXIV	66	<i>penna</i> , <i>Reeve</i> XXI.
<i>Clemnitzii</i> , <i>Hawley</i>	I.	1	<i>ramulosa</i> , <i>Reeve</i> XXVIII
<i>Cunningii</i> , <i>Hawley</i>	XVI	29	<i>regia</i> , <i>Hawley</i> XXX
<i>deltoides</i> , <i>Meade</i>	XXI.	49	<i>rigida</i> , <i>Bilbergii</i> V.
<i>dilatata</i> , <i>Linnaeus</i>	IX.	17	<i>rotundata</i> , <i>Linnaeus</i> II
<i>Dohertyi</i> , <i>Hawley</i>	XXXI	49	<i>rufis</i> , <i>Linnaeus</i> X
<i>electra</i> , <i>Reeve</i>	XIV	25	<i>rugosa</i> , <i>Sowerby</i> XXXI
<i>anglypta</i> , <i>Hawley</i>	XX	37	<i>Rumphii</i> , <i>Hawley</i> V
<i>fimbriatula</i>	XXXIII	63	<i>sacenta</i> , <i>Linnaeus</i> IV
<i>flabellum</i> , <i>Linnaeus</i>	X	18	<i>sanguinolenta</i> , <i>Reeve</i> XXXIII
<i>fumata</i> , <i>Hawley</i>	XV	27	<i>semitata</i> , <i>Linnaeus</i> II
<i>Gouldii</i> , <i>Hawley</i>	XI.	21	<i>semicostata</i> , <i>Conrad</i> XVI.
<i>Hawleyi</i> , <i>Reeve</i>	VIII	15	<i>sericea</i> , <i>Reeve</i> XXIII
<i>hauligabachii</i> , <i>Clemnitz</i>	X.	18	<i>serrata</i> , <i>Schneider</i> XXXIV
<i>hystrix</i> , <i>Hawley</i>	XXXII	60	<i>squamosa</i> , <i>Gmelin</i> II.
<i>meurata</i> , <i>Clemnitz</i>	X	8	<i>squamifera</i> , <i>Sowerby</i> VII
<i>inflata</i> , <i>Clemnitz</i>	III	5	<i>squamissima</i> , <i>Philippii</i> II.
<i>opena</i> , <i>Pennant</i>	XXVIII.	53	<i>Strangii</i> , <i>Hawley</i> XXVII.
<i>Japanica</i> , <i>Hawley</i>	XXV	47	<i>Stutchburii</i> , <i>Reeve</i> XXXIII
<i>lanceolata</i> , <i>Sowerby</i>	XXXI	58	<i>subvarialis</i> , <i>Reeve</i> XXII
<i>lurida</i> , <i>Reeve</i>	XIII	24	<i>truncata</i> , <i>Philippi</i> XIV
<i>madida</i> , <i>Reeve</i>	XXI	31	<i>tuberculosa</i> , <i>Sowerby</i> XX
<i>marina</i> , <i>Clemnitz</i>	II	3	<i>vespertina</i> , <i>Reeve</i> XXIII
<i>Maura</i> , <i>Sowerby</i>	XXX	54	<i>vestillum</i> , <i>Reeve</i> XIX
<i>Menckii</i> , <i>Hawley</i>	XXIII	34	<i>virgata</i> , <i>Meade</i> XXV
<i>muricata</i> , <i>Linnaeus</i>	XIII	23	<i>Zehrisis</i> , <i>Reeve</i> XXV
<i>mutica</i> , <i>Reeve</i>	XXVIII.	37	<i>Zelmaia</i> , <i>Gray</i> VII

FERRUC.

Plate XXII Sp. 42. *P. pectinata*, de synonym *P. inflata*, CLEMNITZ.

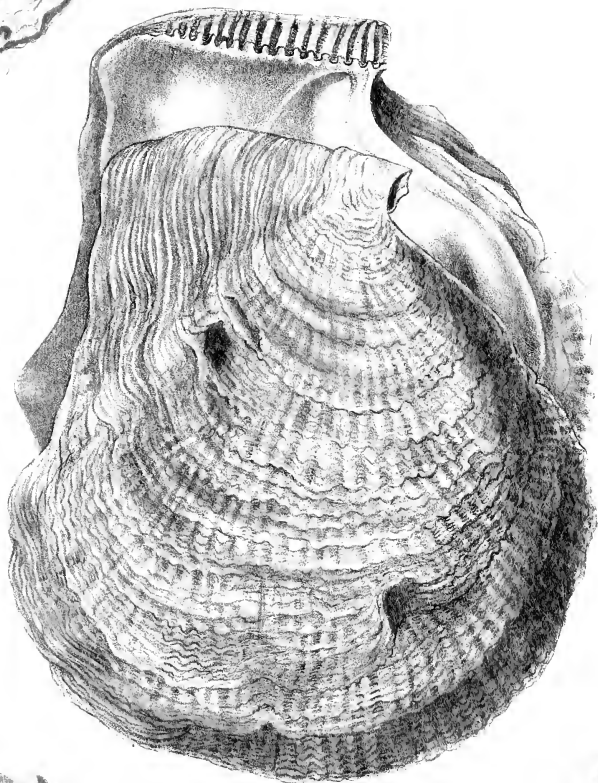
MONOGRAPH

OF THE GENUS

P E R N A .

This collection of bound made rough and sized
like to the standard form by tempo & halford.

Not open



PERNA.

PLATE I.

Genus PERNA, Lamarck.

Testa pleurali, utrimque laminae, subopercularis, nubilibus postice, utrimque sinuibus et alveis; Cardilatus, interguialis, solum parvulus Equivalonae, cervicebilis. Littera postica infra cardilis circumscripta postice. Impressio muscularis obliqua, distincta.

Shell lat. bilaminar, nearly equivalve, umbos small, often terminal and hooked. Hinge broad, marginal, with parallel grooves covering the ligament. Opening for the byssus beneath the post-ror 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 *Leval*, they attach themselves by a tough, bristly byssus. The hinge is in the form of a broad, marginal plane cut across with regular parallel grooves, and the intermediate ridges do not interlock with each other laterally, 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 *Urtica*, in respect of their winged and laminae 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 PERNA. *Testa bilobis subquadratis, utrimque convexa, utrimque sinuibus et alveis; Cardilatus, interguialis, solum parvulus; postica, utrimque sinuibus et alveis.*

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

Hab. —?

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

Species 2. (Mus. Cuming.)

PERNA PECTINATA. *Testa bilobis subquadratis, postice, utrimque sinuibus et alveis; Cardilatus, interguialis, solum parvulus; postica, utrimque sinuibus et alveis.*

THE PECTINATE PERNA. Shell somewhat orbicular, pectinate, thinner than, concentrically nearly laminated,

laminae fibrillately scaled, umbos arched, hooked; dull-olive.

Hab. —?

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

Species 3. (Mus. Cuming.)

PERNA CUMINGII. *Testa suborbiculari, latere anteriori basi producta, crassiusculi, concentricè rufè laminatè, radiatè sulcatè, lamina subfibrillatè; violaceo-purpureè, disco lineatè.*

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. ephippiana*, but it is well distinguished by its radiating grooves, which impart a frilled character to the concentric laminae.

Species 4. (Mus. Cuming.)

PERNA STRELIUS. *Testa subquadrato-orbili, convexè, utrimque sinuibus et alveis; Cardilatus, interguialis, solum parvulus; postica, utrimque sinuibus et alveis.*

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

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

Hab. —?

Less fibrillated than the preceding species, with the base broader, and the umbos still more sharply hooked.

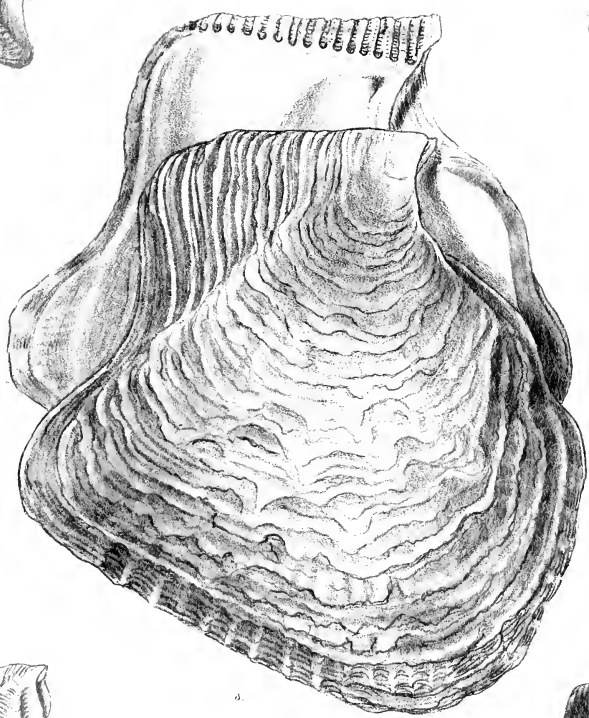
Species 5. (Mus. Cuming.)

PERNA CALDATA. *Testa bilobis subquadratis, postice, utrimque sinuibus et alveis; Cardilatus, interguialis, solum parvulus; postica, utrimque sinuibus et alveis.*

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, rubrâ auratâ, p. int. compresso-angustâ, versus cardinalia truncatâ dividi: ornatâ tenuè concentricè laminatâ, purpureo-agressivâ.*

THE SQUARE PERNA. Shell somewhat square, rudely angled, post. rarely concavely impressed, smooth towards the hinge, then ob-externally, 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 FLEXIFORMIS. *Perna, testâ longitudinali, versus cardinalia irregulariter concentricè laminatâ, dividi utriq. capsâ alba.*

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 lue.

Species 8. (Mus. Cuming.)

PERNA PHEIPIDÆ. *Perna, testâ subquadrato-orbiculari, planâ, compressè laminatâ, lacinis forè obsoletis, latere antice acuminatâ, concentricè laminatâ, immo angustè*

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

Ostrea ephippiana, Linnæus, Syst. Nat. p. 1149

Perna ephippiana, Lamarck.

Hab. Honolulu.

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-quadrangulatâ et conspicuè concentricè laminatâ dividi utriq. capsâ alba, peripura-agressivè versus ante-ventralia flexâ.*

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 VITREÆ. *Perna, testâ subquadrato-orbiculari, levissè laevigatâ, vix laminatâ, latere antice-costatâ.*

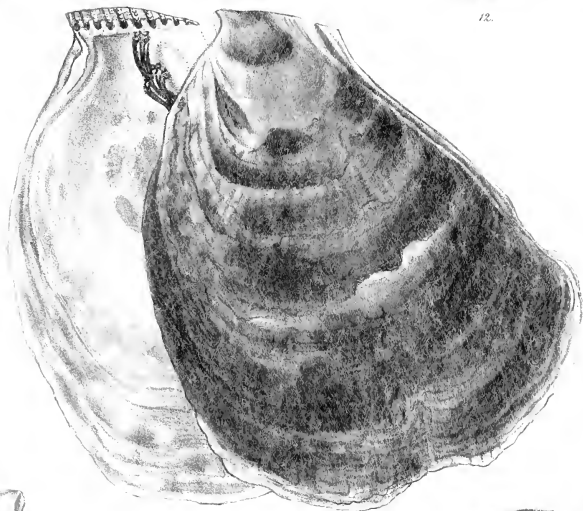
THE GLASSY PERNA. Shell somewhat squarely orbicular, thin, smooth, scarcely laminated; shining-chestnut.

Hab. Red Sea.

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



12.



13.



14.



15.

Vissena bicincta Linn.

P E R N A.

PLATE III

NO. 11. (Mus. Cuming.)

PERNA ANCHORED. *Perna*, *sp. nov.* (Mus. Cuming.)
testa, subtranslucent, concentricis pinnis orbiter radiatis-
lobatis; fulvae testibus.

THE ANCHORA-LIKE PERNA. Shell obliquely longitudinal,
 thin, rather transparent, concentrically peculiarly in-
 regularly laminated; yellowish-white.

Hab. California

A delicate yellowish-white semi-transparent shell, in
 which the concentric laminae are curiously embriated in a
 blistered-like manner.

Species 12. (Mus. Cuming.)

PERNA AUSTRALICA. *Perna, testa oblique foveolata, tenui,*
subpellucida, lavis sordidioribus serratis irregulariter
dentis radiatis; rufis albiculis.

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 sub-
 stance, peculiarly sculptured with irregularly flexuous de-
 cately serrated superficial ridges.

Species 13. (Mus. Cuming.)

PERNA CALIFORNICA. *Perna, testa oblique trigona vel*
quadrata, testis alba, lavis fulvescenti-fulva, lavis pur-
pureo nullo.

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.
 13. f. 13.

Hab. California; Conrad. Honduras. Dyson.

Clearly distinguished by its *Pedana*-like form, and
 clouded livid-purple colouring.

Species 14. (Mus. Cuming.)

PERNA SERRATULA. *Perna, testa trigono-orbiculari, tenui,*
pellucida, lavis serratis serratis dense concentricis ra-
diatis; sordide alba.

THE FINELY-SERRATED PERNA. Shell triangularly orb-
 ular, 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.)

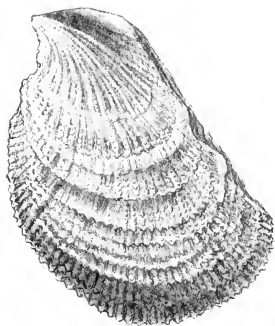
PERNA MARSUPIUM. *Perna, testa orbiculari, solidiuscula,*
radiis concentricis laminalibus; sordide alba, purpurascente
lucida.

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 sub-
 stance, indistinctly roughly laminated.



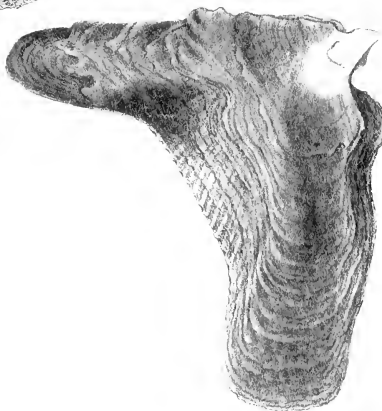
16.



17.



18.



19.

P E R N A.

PLATE IV.

Species 18.

Species 19. (M. Cuming.)

PERNA (PERNA) PERNA.—Shell elongated, rather thin, compressed, concentrically imbricated, scales produced, anteriorly winged, wing serrate in the middle and obscurely ridged; blackish-purple.

PERNA (PERNA) PERNA.—Shell elongated, rather thin, compressed, concentrically imbricated, scales produced, anteriorly winged, wing serrate in the middle and obscurely ridged; blackish-purple.

(See Plate III.) Phil. vol. 10, p. 116.
Rept. No. 10, p. 116.

The same as *PERNA (PERNA) PERNA*, but smaller.

Species 20. (M. Cuming.)

PERNA (PERNA) PERNA.—Shell elongated, rather thin, compressed, concentrically imbricated, scales produced, anteriorly winged, wing serrate in the middle and obscurely ridged; blackish-purple.

PERNA (PERNA) PERNA.—Shell somewhat elongated, rather thin, compressed, concentrically imbricated, scales produced, anteriorly winged, wing serrate in the middle and obscurely ridged; blackish-purple.

Rept. No. 10, p. 116.

The same as *PERNA (PERNA) PERNA*, but smaller.

PERNA (PERNA) PERNA.—Shell elongated, rather thin, compressed, concentrically imbricated, scales produced, anteriorly winged, wing serrate in the middle and obscurely ridged; blackish-purple.

PERNA (PERNA) PERNA.—Shell elongated, rather thin, compressed, concentrically imbricated, scales produced, anteriorly winged, wing serrate in the middle and obscurely ridged; blackish-purple.

Rept. No. 10, p. 116.

The same as *PERNA (PERNA) PERNA*, but smaller.

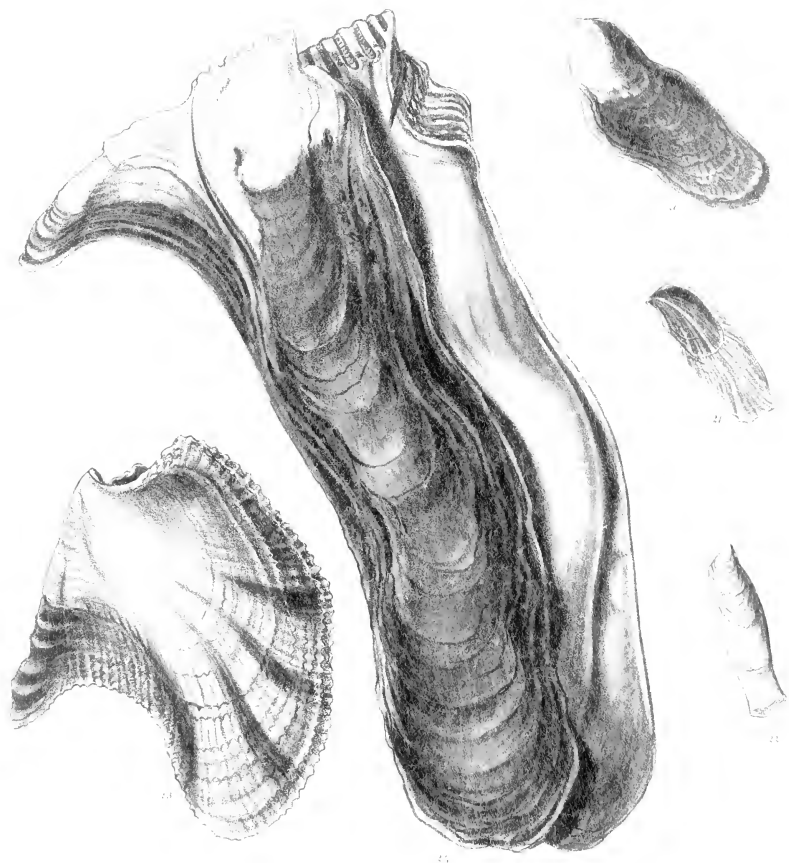
Species 21. (M. Cuming.)

PERNA (PERNA) PERNA.—Shell elongated, rather thin, compressed, concentrically imbricated, scales produced, anteriorly winged, wing serrate in the middle and obscurely ridged; blackish-purple.

PERNA (PERNA) PERNA.—Shell elongated, rather thin, compressed, concentrically imbricated, scales produced, anteriorly winged, wing serrate in the middle and obscurely ridged; blackish-purple.

Rept. No. 10, p. 116.

The same as *PERNA (PERNA) PERNA*, but smaller.



P E R N A .

PLATE V

Species 20. (Mus. Cuning.)

PERNA OTIDIS. *Perna testis sublaevissimipodis, radii laevissimati, umbones costatis, rufoparvo-testis.*

THE RUDE PERNA. Shell somewhat flexuously elongated, rudely laminated, umbones hooked, purple-brown.
Hab. ———

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

Species 21. (Mus. Cuning.)

PERNA VESSELLA. *Perna testis elongato-pandulato, ligamentosa, etc. albata, brachyfuseocolor, alba radiata brachio et fasciata, umbones parvis, rotatis.*

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

LAMARCK *Ann. Mus. Vert. vol. vii. p. 75*

Hab. ———

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

Species 22. (Mus. Cuning.)

PERNA LIGUMIN. *Perna testis elongato-ligamentosa, verrucos-umbones emul concentricis laevissimati, deinde brev. lat. irregularis, scabulis albid.*

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

Ostrea ligumina Gmelin, Syst. Nat. p. 3399.

Hab. Lord Hood's Island; Cuning.

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

Species 23. (Mus. Cuning.)

PERNA FIMBRATA. *Perna testis oblique ovato, antice late alata, laterali, versus marginem antice fimbriata et suboperculata; latiscuticellata, rufes marginosa lividopurpurea lincta et radiata.*

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

Hab. Moluccas

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

Species 24. (Mus. Cuning.)

PERNA ISOGNOMUM. *Perna testis elongata, plerumque sinu-flexuosa, depressa, radii laevissimati, basi antice anguste alata, ala plus minus curvata, postice abrupte late sinuata, purpureo-nigra.*

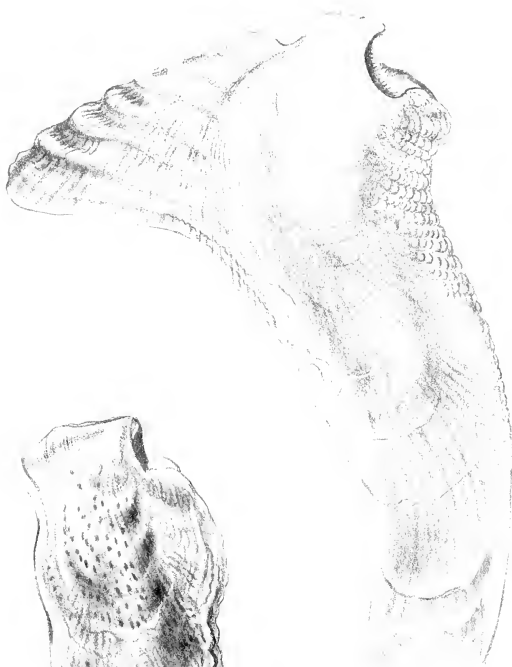
THE CARPENTER'S SQUARE PERNA. Shell elongated, generally rather flexuous, depressed, rudely laminated, base narrowly winged anteriorly, wing more or less curved, posteriorly abruptly broadly sinuated; purple-black.

Ostrea isognomum, Linnaeus, Syst. Nat. p. 1149.

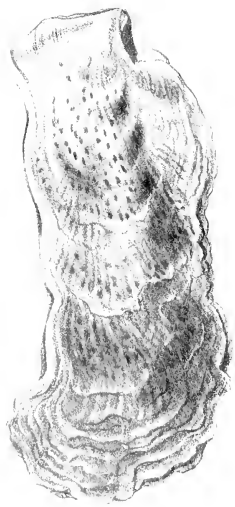
Varieties *P. fevorata* and *caesia*, Lamarck

Hab. Philippine Islands; Cuning.

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



23.



22.

20.



24.

P E R N A.

PLATE VI.

Species 25. (Mus. Cuming.)

PERNA ATTENUATA. *Peru, testâ elongatâ, rufâ laminatâ, antice fimbriatâ-clavata, versus umbones etâ ovata; purpureo-nigra.*

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 VESPERTILLO. *Peru, testâ elongatâ, arcuata, conspicuè latè alata, utriusque fimbriatâ-subulata; sordide lutescenti-ibâ, ad basin subpurpureo-ovata.*

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

Hab. Bay of Manila; Cuming.

The bat-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. *Peru, testâ elongatâ, irregulari,*

tenni, subpellucido-cornâ, irregulari, versus extremitatem laminatâ, basi angustâ; lutescente-albâ, nitentè, maculis purpureis undique tetraginis, ad marginem purpureo lineatâ.

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 I-lands; 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. *Peru, testâ subpyriformi-ovata, depressensidâ, irregulari, versus marginem rufè 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
Anomoides, <i>Reese</i>	III.	11	Limoides, <i>Reese</i>	IV.
attenuata, <i>Reese</i>	VI.	25	linguliformis, <i>Reese</i>	II.
Australis, <i>Reese</i>	III.	12	lobata, <i>Reese</i>	I.
Californica, <i>Coccard</i>	III.	13	marsupium, <i>Linnaeus</i>	III.
cauta, <i>Linnaeus</i>	V.	21	nucleus, <i>Linnaeus</i>	I.
caudata, <i>Reese</i>	I.	5	patibulum, <i>Reese</i>	IV.
costellata, <i>Coccard</i>	IV.	16	pectinata, <i>Reese</i>	I.
Cumingii, <i>Reese</i>	I.	3	quadrangulatis, <i>Reese</i>	II.
eghippium (<i>Ostrea</i>), <i>Linnaeus</i>	II.	8	rudis, <i>Reese</i>	V.
fenestrata, <i>Linnaeus</i>	V.	24	semitruda, <i>Linnaeus</i>	II.
finibrata, <i>Reese</i>	IV.	18	serratula, <i>Reese</i>	III.
finibrata, <i>Reese</i>	V.	23	spatulata, <i>Reese</i>	VI.
isognomonum (<i>Ostrea</i>), <i>Linnaeus</i>	V.	24	xipertilio, <i>Reese</i>	VI.
latecostata, <i>Reese</i>	II.	9	xipho, <i>Reese</i>	II.
legumen (<i>Ostrea</i>), <i>Linnaeus</i>	V.	22	Vulsellia, <i>Linnaeus</i>	V.
lentiginosa, <i>Reese</i>	VI.	27		

ERRATUM

Plate V., Species 23, for *P. finibrata* read *P. subreenta* *Reese*.

MONOGRAPH

OF THE GENUS

M A L L E U S.

.....

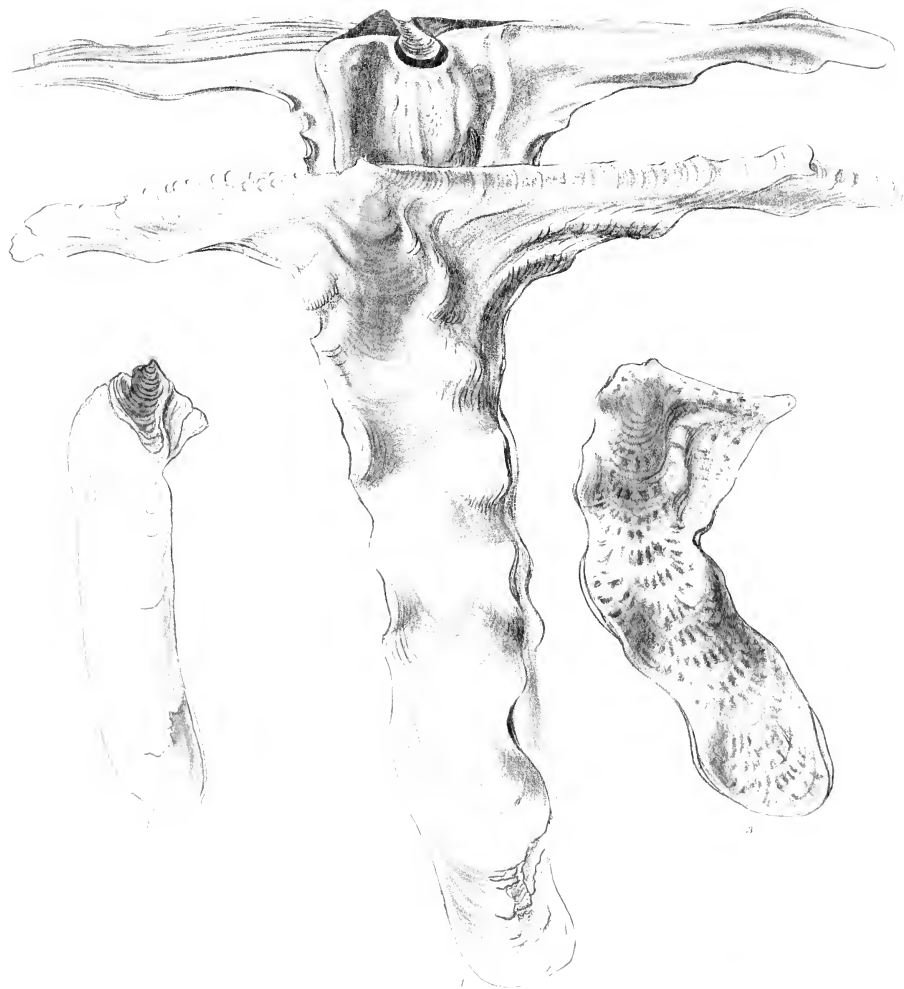
Esc.—'Canst tell le'v an (hammer) oyster makes his shell'?

Lev.—No.

Esc.—Nor I neither.

Shakespeare.

.....



MALLEUS.

PLATE I.

Genus MALLEUS, Lamarek.

Testa irregularis, subquadrata, angulata, ad basin interduam utraque lobata, submarginata, dextrorsis. Cardia oblongata, parvius partem externam in aequali ductu, partem internam in fossula nuda in testis, hinc ad parvum prolyso. Ampressa aequaliter compressa.

Shell irregular, nearly equilateral, elongated, sometimes lobed on each side, umbos dissimulate. Hinge toothless, with the ligament partly external on a sloping area, partly internal within a shallow 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 *Ballœus*, 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. nodulosus* 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 umbos 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 characterised, however, apart from the body of the shell, by a different spicula of colouring.

The *Malleus* are found in both hemispheres.

Species 1. (Mus. Cuning.)

MALLEUS ALBES. *Moll. testa longissima, ad latera compressa nuda, basi utrinque angulata lobata, lobis prolongis, laevibus, surculis albis.*

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

LAMAREK, Anim. sans vert. vol. VII. p. 21.

Obsteo Malleus-albus, Cuv. ann. 1.

Varietas *Malleus albus*, Lamarek.

Hab. Philippine Islands; Cuning.

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

Species 2. (Mus. Cuning.)

MALLEUS LIOGREN. *Moll. testa longissima, tenui, sub-laminata, ad latera recta, prope umbones distincte, convexos, basi plicata-lamellata; alba, umbro lobata perspersa.*

THE FOX MALLEUS. Shell very long, thin, slightly laminated, straight at the sides, distorted near the umbos, concentrically rudely plicately laminated; all the laminated nucleus purple.

Hab. Philippine Islands; Cuning.

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

Species 3. (Mus. Cuning.)

MALLEUS ANATILUS. *Moll. testa elongata, oblique sub-convexa, ad latera sublobata, basi ad latera postera sublobata; viridicallio, subp. luteida, aurantis porphyrocephala aspersa.*

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

LAMAREK, Anim. sans vert. vol. VII. p. 23.

Obsteo anatus, Gmelin.

Obsteo duckensis, Spengler.

Obsteo figurata, Chemnitz.

Malleus aurantius, Sowerby in a of Lamarek.

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. *Moll. testâ elongatâ, depressâ, inter-
dum undulato-dentatâ, prope umbones concentricè lirato-
laminatâ, basiâ d'inde irregularibus, plus minus decur-
vatis, basiâ posticâ subulatâ; purpureo-nigrâ.*

THE RUBE MALLEUS. Shell elongated, depressed, some-
times wave-distorted, concentrically ridge-laminated
near the umbones, laminae then irregular, more or less
decurvated, base slightly winged on the posterior
side; purple-black.

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

Ostrea acuta, Martin.

Valvula Malaccana, Chemnitz.

Ostrea Falstella, Gmelin.

Malleus subulatus, Lamarck.

Hab. Philippine Islands.

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

Species 5. (Mus. Cuming.)

MALLEUS VULGARIS. *Moll. testâ subulatatâ, valdè ru-
goso-contortâ, basiâ angustissimè subatâ lobis subulatis,
prolongis; intus exclusivè 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, Linnaeus, Syst. Nat. p. 1147.

Malleus vulgaris, Lamarck.

Hab. China Seas.

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

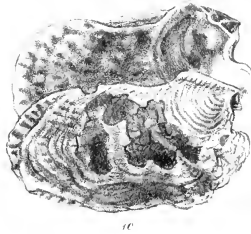
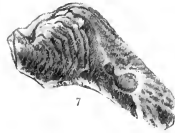
Species 6. (Mus. Cuming.)

MALLEUS DEMONIACUS. *Moll. testâ rudè linguaformi,
obliquâ, concentricè lirato-laminatâ, ad basin utrinque
auritâ; intus purpureo-nigrâ.*

THE DEMONIAL 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 umbones and ligamentary cavity be-
ing exactly central.



MALLEUS.

PLATE III.

Species 7. (Mus. Cuming.)

MALLEUS TIGRINUS. *Mall. testâ ovata, subquadrata, costâ concentricâ plurioblongata, deinde tenui, obliquè prolongata; albida, parte tenui nucleis purpureis aspersa.*

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

Hab. Melanes.

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 umbos, from which proceeds a more or less elongated, semitransparent, irregular lamina.

Species 8. (Mus. Cuming.)

MALLEUS RUFIPUNCTATUS. *Mall. testâ subquadrata ovali, concentricè plurioblongata, deinde tenui irregulari, ete tenui plicata; albida, parte tenui luteo-roseo-nigra, nucleis porphyreaceo-erubescens punctata.*

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

Hab. West Columbia; Cuming.

As in the preceding species, the most characteristic features lie in the colouring of the thin, irregular protruding lamina.

Species 9. (Mus. Cuming.)

MALLEUS MACULOSUS. *Mall. testâ trigono-subquadrata, parte semiconcavè triangulari, deinde tenui, amplius prolongata, luteo-rosea, pellucè roseo-roseo-nigra, purpureo maculata.*

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

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

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

Species 10. (Mus. Cuming.)

MALLEUS DEQUIRIATUS. *Mall. testâ ovata vel oblonga, parte semiconcavè ovali, deinde tenui, plicata; albida, parte tenui lutea et maculata.*

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

LAMARCK, Anon. sans vert. vol. VII, p. 93.

Hab. New Holland.

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

Species 11. (Mus. Cuming.)

MALLEUS AQUATILIS. *Mall. testâ trapezoidâ, concentricè ovali-subovata, deinde tenui prolongata, parte tenui pellucè roseo-nigra, obscure foveolata.*

THE RIPPLED MALLEUS. Shell trapezoid, concentrically wave-plated, 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 plates, whilst the thin portion is obscurely banded.

Species 12. (Mus. Cuming.)

MALLEUS VESICULATUS. *Mall. testâ subtrapezoidâ, concentricè dense plurioblongata, deinde tenui prolongata, parte tenui oblongo-pandata, longitudinaliter luteo-striata, albida, irregulariter vesiculata; intus rubro-purpurea.*

THE BUBBLED MALLEUS. Shell somewhat trapezoid, concentrically densely plicately laminated, then thinly prolonged, the thin portion oblongo-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. testâ obliquè oblongâ, tenuissimâ, pellucè, pallidè roseo-roseo-nigra, radiatum subultrata.*

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

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

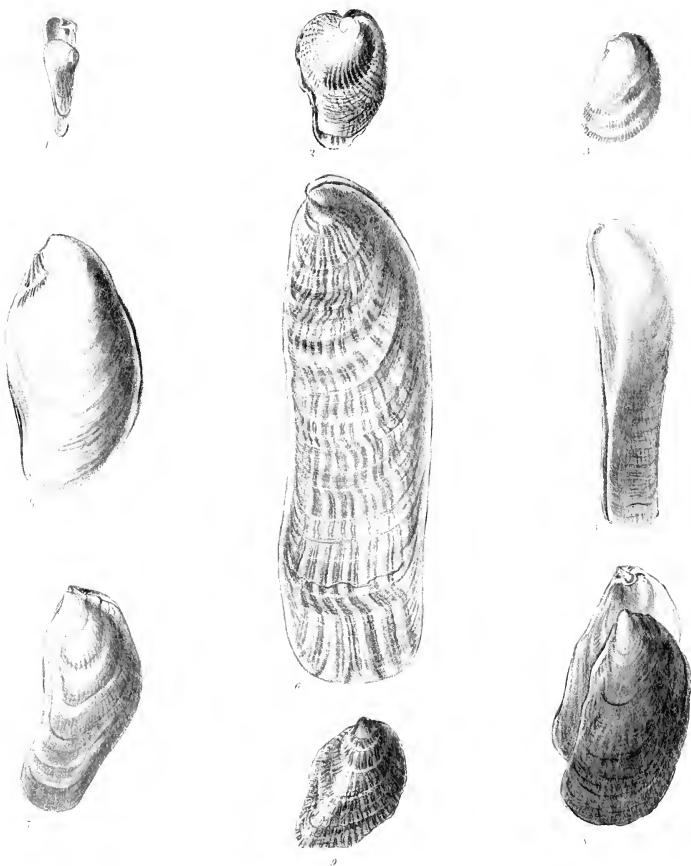
A delicate, transparent, coppery-tinted shell, not belonging to the nucleated type which is characteristic of the other species in this Plate.

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 (Cuming).

Test. long. 1.5-2.0, filamentis aerea squamulis, utrinque plicis. Umbones inaequalis. Vellus striatum in strigula costis praevia, superiora depressa, ciliata, sicuti sicuti obliqua, eccentrica depressa, ligamentum musculo. Impressio musculo subcentralis, cernens basin distincte tubulata.

Shell longitudinal, filio-laminal, equivalve, somewhat irregular, umbones equal. Hinge-callosity in each valve prominent, depressed at the upper part, impressed above with an obliquely-angled 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 umbones are invariably attenuated and more or less hooked. The most conspicuous structure of the hinge is a central spoon-shaped pit, as in *Hollus*; but besides this, the valves incline to recede from one another at the base, so as to form a sloping area.

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

Species 1. (Mus. Cuming.)

VULSELLA PROLIFERIFORMIS. *Val. testis elongato-trigoni, gracili, depresso-in-fimbriato-striata.*

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

Hab. Ceylon; F. L. Layard.

Distinguished by its slenderly triangular Pholas-shape.

Species 2. (Mus. Cuming.)

VULSELLA ISOCARDIA. *Val. testis ovata, depressa, umbonibus intortis, eae utriusque squamato-laminatis, squamis crenatis: scutulae albae obscure radiatae.*

THE ISOCARDIA VULSELLA. Shell ovate, depressed, umbones 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 umbones being convoluted inwards, as in *Isocardia*.

Species 3. (Mus. Cuming.)

VULSELLA TASMANICA. *Val. testis subtrigono-ovata, radiis distinctis, umbonibus parvis, deinde squamato-striatis. ferrugineo-alba.*

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

Hab. Tasmania.

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

Species 4. (Mus. Cuming.)

VULSELLA MYTILINA. *Val. testis oblongo-ovata, antice subdepresso, subintorta, obscure decussate squamato-striata; ferrugineo-alba.*

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. Ruppell.

More solid, and less definitely scaled than its congeners

Species 5. (Mus. Cuming.)

VULSELLA ATTENUATA. *Val. testis elongato-attenuata, ad extremitates depresso-subquadrata, radiatio obscure squamato-striata; corneo-albida, deinde livido-purpurascens-irradiata.*

THE ATTENUATED VULSELLA. Shell elongately attenuated, depressly subquadrate 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. testis elongata, recta, roacea-*

*Vul. striatâ, tarsi, lines fuscæ spe pallidioribus an-
cipitiâ peltâ*

FIG. 7. TONGUE-SHAPED VULSELLA. Shell elongated,
straight, concentrically striated, brown, painted in a
waved manner with lighter bands and lines.

Ugo Vulsellâ, Linneus, Syst. Nat. p. 1113.

Vulsellâ linguatâ, Lamarck.

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. *Vul. testâ obliquè oblongâ, subarenatâ,
planulatâ, longitudinaliter rugosâ, striis transversis
arenatis rugos decussatis, purpureo-fusâ.*

THE WRINKLED VULSELLA. Shell obliquely oblong, some-

what arched, flat, longitudinally wrinkled, with cren-
ated transverse striae crossing the wrinkles. Purple-
brown.

LAMARCK, *Anim. sans vert.* vol. vii, p. 295.

Hab. Red Sea.

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

Species 9. (Mus. Cuming.)

VULSELLA CRENULATA. *Vul. testâ ovatis, rugosâ,
spumato-lamiatâ, squamis crenulatis, scab. peltâ.*

THE CRENULATED VULSELLA. Shell ovately triangular,
spumately laminated, series crenulate, laticostate.

Hab. Red Sea.

Very similar to *V. leucorhina* in sculpture.



11



10a



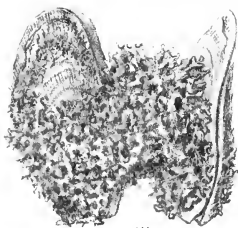
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10b



13a



13b



14



15



17



16

VULSELLA.

PLATE II.

Species 10. (Fig. 10 and 10 $\frac{1}{2}$, Mus. Cuming.)

VULSELLA LIMBIFORMIS. *Fal. testā subquadrata, striatā et ut, transverse crenulato-squamata; sordide alba.*

THE LIMB-SHAPED VULSELLA. Shell subquadrate, ventrally very finely-crenulate squamate, dirty-white.
Hab. Port Adelaide, South Australia.

This little species, of which Fig. 10 $\frac{1}{2}$ represents a group invested with sponge, is characterized by a subquadrate angulated growth on each side of the umbos, which gives it a *Lion's*-like appearance.

Species 11. (Mus. Cuming.)

VULSELLA PHEASANTIFERA. *Fal. testā elongato-ovariiformi, crepus umbos attenuatā, dense scabroso-striatā; fuscā, zonis pilulis angustis sordidatis utriusque pecti.*

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

Hab. Australia.

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

Species 12. (Mus. Cuming.)

VULSELLA RUDES. *Fal. testā oblongo-quadrata, obliquā, rudi, subregulariter laminatā, minutissimē crenulato-squamata; sordide fuscocerulea.*

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 UNIVALELLIS. *Fal. testā ovata, medio latiuscanti, medioque dense crenulato-squamata, squamis suberectis. spatuliformi.*

THE CAP-SHAPED 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 TORULATA. *Fal. testā attenuato-oviformi,*

concentricē et cō. fissurā, lamina crenulato-squamata, sordide fuscā.

THE TORNOSTED 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. *Fal. testā oblongā, arcuata, ut latius latiuscanti, umbonibus divergentibus, radiatim minutissimē crenulato-squamata; fuscocerulea.*

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

LAMUREK. Anim. sans vert. vol. vii. p. 268.

Hab. Swed.

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 RIANS. *Fal. testā oblongo-quadrata, subobliquā, utricū hians, rudi laminatā, radiatim crenulato-squamata, radiis undulatis; fuscā.*

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

LAMUREK. 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 wavy rays.

Species 17. (Mus. Cuming.)

VULSELLA TRITA. *Fal. testā subtriangulo-ovā, latiusculā, salubri, concentricē striatā, medio laevigatē; spatuliformi.*

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

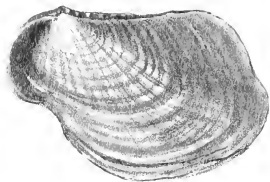
C R E N A T U L A .

* Nature never did betray

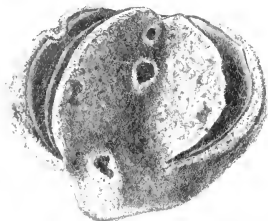
The heart that loved her ; tis her privilege,
Through all the years of this our life, to lead
From joy to joy ; for she can so inform
The mind that is within us, so impress
With quietness and beauty, and so feed
With lofty thoughts, that neither evil tongues,
Rash judgments, nor the sneers of selfish men,
Nor gloatings where no kindness is, nor all
The dreary intercourse of daily life
Shall e'er preclude her influence or disturb
Our cheerful faith, that all which we behold
Is full of blessings. — *H. Darwin.*



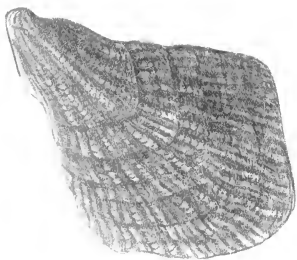
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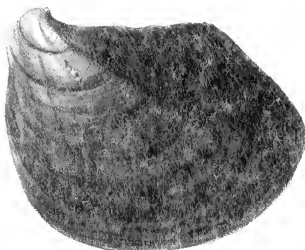
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16



13



14

CRENATULA.

PLATE I.

Genus CRENATULA *Lamarck*.

Testa tenuis, subquadrata, ovata, subobovata, subtriangulari striata, plicata in medio, et supra. Orbits laterales, lineares, marginatae, circulares; cavae in seriebus oppositis, ciliatis, subaequalibus, irregularibus, crepidulosis. Impressio concentrica adhaerens indistincta.

Shell thin, nearly equilateral, smooth, mostly concentrically striated, fibre-laminar, oblique. Hinge lateral, linear, marginal, emarginated; cavities set in a row, rabbets, rather hollow, receiving the ligament. Muscular impression oblong, indistinct.

This very character of the genus was established about half a century ago, by Lamarck, in the 'Annales du Muséum' of Paris. It is a member of the family of *Arctulaceae*, and is distinguished by a narrow linear hinge, presenting a row of hollow rabbets or fitting cavities for the reception of the ligament. But consistent 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 sponges.

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

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

CRENATULA NIGRINA. *Testa obliquè ovata, subobovata, anticè rotundata, posticè declivius angulata, nigra, cavae, concentricè interruptè plicato-striata; ciliata, succae nitibus distantibus subultrix subobovè picta.*

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, *Ann. 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 VIBRIS. *Testa transversè ovata, subobliquè, cavae, anticè rotundata, posticè subangulata,*

productè, tenuis, concentricè striata; viridi, pallidè radiata et fasciata.

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

LAMARCK, *Ann. sans vert.* vol. vii. p. 72.
Hab. Red Sea.

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

Species 3. (Mus. Cuming.)

CRENATULA AVICULARIS. *Testa triangulari-fimbriatè, declivè oblique angulata, rarius umbones attenuatè depressè, concentricè interruptè plicato-striata; refractè-nigra ciliata luculibus rufo-flovis profusè picta.*

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-rayed painting.

Species 4. (Mus. Cuming.)

CRENATULA BICOSTALIS. *Testa subquadrato-ovata, anticè cavae, rotundata, posticè cavae, abbreviatè angulata, acin obscure radiata bi-circulata, costa subultrix, concentricè striata; nigra.*

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, *Ann. 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.



3a



3b



6



7



8

CRENATULA.

PLATE II.

Species 5. (Fig. 1 & 2) *Mus. Cuming.*)

CRENATULA FLAMMIA. *Cren. testâ transversè ovali, subangustâ, obliquè, costis concentricè striatâ; radiâ, fuscâ, concentricè interruptè striatâ; punctis pallidis variè distans per lineas radiâs alternatim flammatâ.*

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. testâ transversè oblongo-punctatâ, obliquè subquadratâ, depressâ, umbonibus rostratis, concentricè interruptè plicatè striatâ, rufoconcentricâ, radiâ lineâbus plicatèis profusè pictâ.*

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

Obolus 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. acicularis*. The colouring is identical.

Species 7. (*Mus. Cuming.*)

CRENATULA FOLIA. *Cren. testâ transversè rhomboidâ, obliquè convexâ, utrinque obtusè angulatâ; livido-albidâ, costis nodosis opaco-albis radiatâ.*

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

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

Hab. Red Sea.

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

Species 8. (*Mus. Cuming.*)

CRENATULA MYTILOIDES. *Cren. testâ obliquè subquadratâ vel oblongâ, propè umboes convexâ, deinde depressâ, costis concentricè striatâ, lœvi; purpureo-nigrâ.*

THE MYTILUS-LIKE CRENATULA. Shell obliquely subquadrate 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.

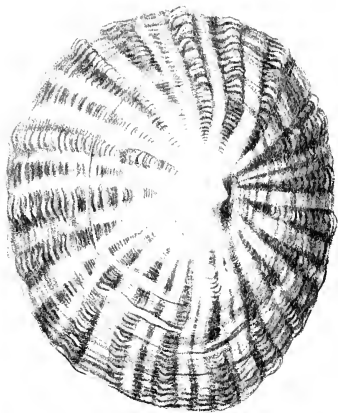
MONOGRAPH

OF THE GENUS

U M B R E L L A.

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

Mrs. Hemans



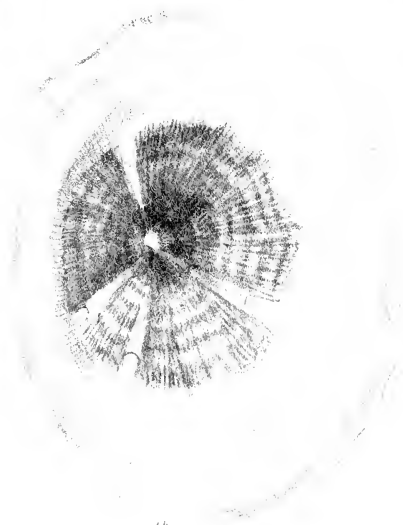
10.



2.



1.



11.

UMBRELLA.

PLATE I.

GENUS UMBRELLA, *Linnæus*.

*Testis orbiculato-ovata, plicata, superius convexa, ventrali
 parte concava, striata, superficie concentricâ, disco cen-
 tro, impressione concentricâ irregulari centrali ad
 marginem circumscribita tubulâ.*

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 central as 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 (small) warty mass, with the shell tubercled 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. 1a and 1b, Mrs. Cuming.)

UMBRELLA INDICA. *Umb. testis subtilis concentricâ, radiatim striatâ, alba, medio intus circumscriptâ sulphureâ, extus concentricâ striatâ, margini undulatâ; circumscriptâ, radiatim fasciatâ, fasciis fusciscentibus, epidermide plicatâ tubulâ.*

THE INDIAN UMBRELLA. Shell rather, concave beneath, radiatly 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.

Pecten umbellatus and *Stanois*, *Gmelin*
Hist. Eastern seas.

Fig. 1a 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. 1b shows the richly orange-sulphur interior of a specimen of larger and flatter growth.

Species 2. (Mus. Cuming.)

UMBRELLA MEDITERRANEA. *Umb. testis ovata, leviter
 depressâ, concentricâ in orbem rugoso-plicatâ; circum-
 scriptâ, submargini fusciscenti radiatâ, subtili medio
 pallide 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. Cuvierienne*, p. 199, 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. testis ovali, leviter, subplacidâ,
 plicatâ subtili concentricâ-albidâ, laevigatâ, extus concen-
 tricâ striatâ, margini integrâ, ventrici parvo; circum-
 scriptâ, fusciscenti pallide rufâ radiatâ, epidermide
 tenui tubulâ.*

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

CUMING, Proc. Zool. Soc. 1856, p. 161.

Hab. Mouth of the Chiriqui river, Bay of Panama; Cum-
 ing.

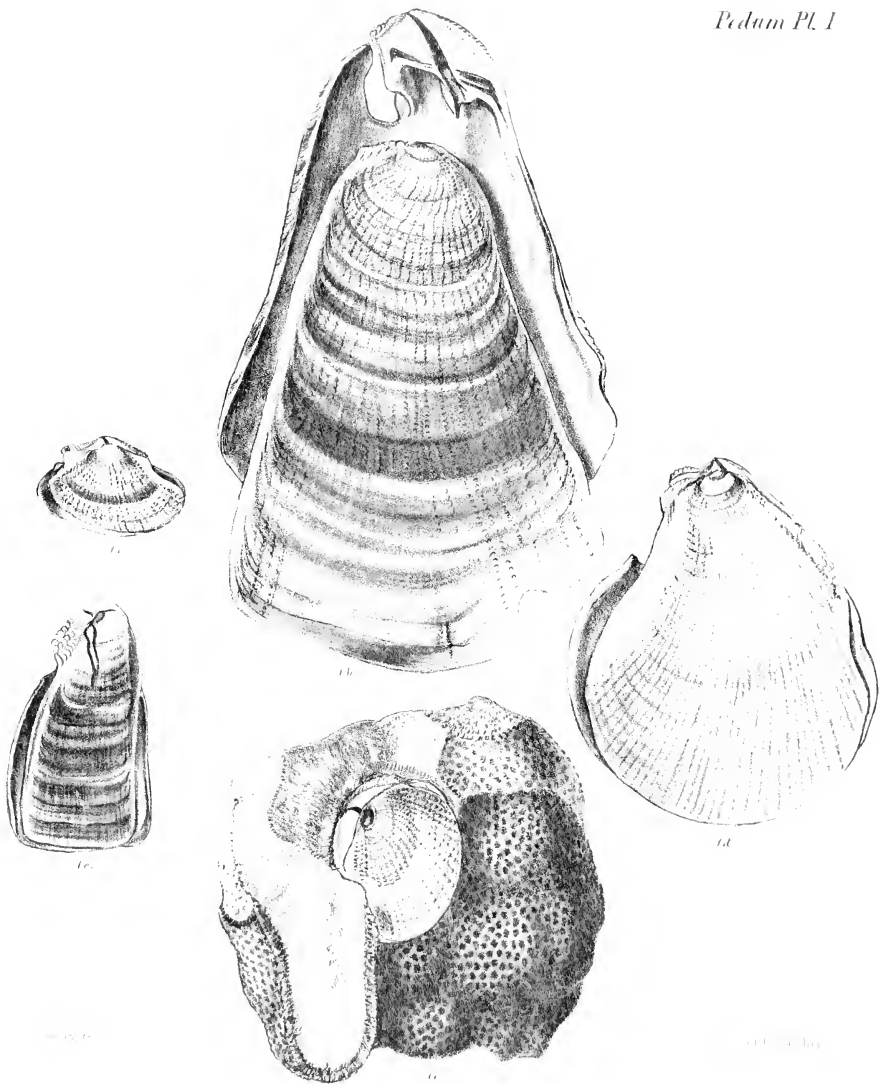
The specific differences in this genus are slight and variable, but the discovery in the above-named locality of a genus of so characteristic a type as *Umbrella*, hitherto known only in the eastern hemisphere, adds materially to the importance of the species.

MONOGRAPH

OF THE GENUS

P E D U M.

"O Natur! all-sufficient! over all!"
knoweth not with the knowledge of thy works!"
Plinius



PEDUM.

PLATE I.

Genus PEDUM, Bruguière.

Testa longu oblonga et ovalifera, compressa, inequivalvis, subtriangulari; costis in te. ac circumscriptis, ad latera reflectis, prope cardinem posticam sinuatis, costis superioribus planis. Cardo ovalis, angustata portio externa . . . fissura canaliformi subare. re producta cubo inferioris.

Shell longitudinal or wedge-shaped, compressed, inequivalve, slightly curved; 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 Spondylodes*;" but Bruguière, 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 madrepore. 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 hinging, with its ligamentary area, an unusually deep sinus for the passage of the byssus.

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

PEDUM SPONDYLOIDEUM. *Testa longitudinaliter et acutecurvata, planulata, superiore angulualiter striata, stria granulato-scabra; alba, purpureo-fulva; nuda, fœta et transverse fasciata.*

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

Ostrea Spondylodes, Gmelin. Syst. Nat. 13th edit. p. 5335
Hab. Red Sea (in madrepore).

Of the specimens of this well-known and interesting shell represented in the accompanying Plate, Fig. 1a illustrates its early stage of growth, while Fig. 1b is a fine adult, and Fig. 1c similarly adult, but a dwarf variety. Fig. 1d is a characteristic white variety, almost uniformly more rounded than the typical form; and Fig. 1e shows a mass of madrepore 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 beat upon a wild and violent sea
Each way and move. —*Shakespeare*



24



25



26



27



28



29



30



31



32



33

apex of the whorls ending, deep-violet line and color of the suture, and the suture itself, thin, twisted.

Hab. —

Though so very similar in form to the preceding species, there is a depression and marked character about the margins of the last whorl which appears to be constant. There is a indentation of the rostrum here which thins the aperture and columella like in all the specimens we have seen of *L. casta*.

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

LANTHUS GRANDIS. *Testis testis subglobosis-turbinatis, apice depresso-convexa, instructis lineis laevibus, radiatis, de sutura delectis, ultimo gradati, descendit oblique striata laevis, peris, flexa convolutis spiriter decessatis; intus convexa, prope apicem obtusate, etiam nisi tenuissimae cretatae, deinde attenuatae turbi.*

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

Hab. —?

This fine species may probably be the exotic representative of our British *L. convexus*, 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. 4a and 4b, Mus. Cuming.)

LANTHUS CASTA. *Testis testis depresso-turbinatis, circumflexis late declivibus, deinde sinuatis radiatis, stris laevibus impressis, etiam convolutis; prope*

apicem obtusate, etiam nisi tenuissimae cretatae, deinde attenuatae turbi.

THE COMMON LANTHUS. Shell depressively turbinated, whorls sloping, then markedly radiated, rounded throughout with fine impressed striations, rather white, bluish-white towards the apex, sinuously twisted, relieved, aperture crosswise, not sinuated in the middle.

Hab. —

Distinguished by a more than usually depressed top, so which the strength of growth are less conspicuously indicated whilst the spiral impressed striae, though minute, are numerous and well defined.

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

LANTHUS COMMUNIS. *Testis testis depresso-convexa, subis, sulcis pro convexa, angustibus declivibus, striata, decessata striata; supra obtusate, infra, prope apicem convexa, circa apicem alba, etiam striata, et subconvoluta-cretata, apertura transversa, etiam sinuata.*

THE COMMON LANTHUS. Shell depressively turbinated, flattish beneath, whorls sloping slightly, rather rudely decessately striated, white above, purplish-violet below, white round the columella, columella rather twistedly relieved, aperture transversely sinuated in the middle.

LAMARCK, Ach. syst. vert. vol. ix. p. 4.

Hellia lantus a. LAMARCK.

Lanthus lantus, MENKE.

Lanthus proconvexus, VETM.

Hab. Mediterranean and Atlantic.

This species is distinct from *L. jaynesi* 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



11a



11b



12a

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

IANTHINA FRAGILIS. *Ianth. testâ depressoconvexâ, angustata, subrotunda, decliviter, versus apicem minutis et spinulosis, rugosis, sublyce decessatis, spiraculis subrotundis, versus subapicem costatis; columellâ subrotundâ.*

THE FRAGILE IANTHINA. Shell depressly rounded, whorls rather flatly sloping, everywhere decessated 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 striolata, Carpenter.

Hab. West Indies; Maratlan; California.

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

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

IANTHINA CUCULLATA. *Ianth. testâ depresso-convexâ, spirâ parvâ, angustata decliviter, versus apicem subrotundâ plicato-striata, spiraculis dense micantibus multistriatis; costis carulo-convexis, versus apicem alternantibus, fasciâ latâ pallidâ circa columellam; columellâ subrotundâ, appresso-reflexâ; apertura transversâ, medio sinuata.*

THE BELL-SHAPED IANTHINA. Shell depressly turbinate, spire small, whorls slopingly convex, obliquely rather rudely plicately striated, spirally densely minutely punctately striated, deep blue-violet whitish towards the apex, with a broad pale lineal 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. 8*a* and 8*b*, Mus. Cuming.)

IANTHINA AFRICANA. *Ianth. testâ subpyramido-convexâ, conicâ, apicem subrotundâ, angustata decliviter, versus apicem subrotundâ, spiraculis superficialiter multistriatis supra carulo-convexâ, infra purpurascens-costata; columellâ reflectâ, subrotundâ, latere subapiciter sinuata.*

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

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

Hab. Zanzibar.

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

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

IANTHINA PLANOSPIRATA. *Ianth. testâ depressâ, angustata decliviter, versus apicem subrotundâ, spiraculis subrotundis plicato-striatis, carulo-convexis albidis, ad peripheriam purpurascens-costatis; columellâ arcuata, subululato-spiraculis; apertura transversâ, medio sinuata.*

THE FLAT-SHAPED 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 dilutely 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. 10*a* and 10*b*, Mus. Cuming.)

IANTHINA TROCHOIDEA. *Ianth. testâ pyramido-convexâ, subrotundâ, angustata decliviter, versus apicem angulata, ad basin plano-convexâ, decessata striatis, suturis subrotundis; carulo-albidâ basi purpurascens-costata; columellâ leviter reflectâ, subrotundâ, apertura ad angulum sinuata.*

THE TROCHOID IANTHINA. Shell pyramidally cone, rather solid, whorls slopingly convex, last whorl angled flatly convex at the base decessately 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



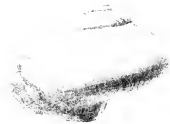
13 a



14 a



15 a



16 a



17 a



18 a



19 a



20 a

Species 15. (Fig. 15a and 15b, Mus. Cuning.)

LANTHINA SMITHII. *Lanth. testa depressurovata, spiræ
laevi, infravertibus subangustis, decussata striatis, rix
angulatis; aëtractis utriusq; peripheriâ rotundâ, spiræ
et circum columellam albâ; columellâ leviter reflectâ.*

SMITH'S LANTHINA. 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 re-
flected.

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

Since our figure was drawn, from a shell in Mr. Cuning-
ham's possession, unaccompanied with any information
as to its locality, I had the good fortune to have my at-
tention 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
Helix janthina, but no more appeared there until three years ago
when many were left on the sands alive.—M. Hill.

"*Llandovery House, April 11th, 1829.*"

The three specimens accompanying this memorandum,
especially characterized by the presence of a white band
round the columella, being identified with the one figured
from Mr. Cuningham'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.



17 a



16 a



17 b



18 a



19 a



19 b



20 a



21 a



21 b



22 a

IANTHINA.

PLATE IV.

Sp. (1892), p. 27, and 1893, Mus. Cuming.)

IANTHINA STRIATA. *Ianth. testis subglobosa, infrafrons rotunda, spiris brevibus, sicut in basi, impressis, ut bene striatis, columella tenui reflexa, aperturae aperturæ, medio sinuatae, ut supra.*

THE STRIATED IANTHINA. Shell somewhat globose, whorls rounded, impressed at the sutures, obliquely finely striated, gradually sinuated in the middle; columella thin, reflexed, somewhat channelled; aperture somewhat sinuated in the middle.

MATERIAL. Sib. p. 141. (Capp. Linn. Moll. p. 194, pl. 9, f. 15.)

Antilles. (1892), p. 27, and 1893, Mus. Cuming.)

Hab. Mediterranean.

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

Species 17. (Pl. 1892 and 1893, Mus. Cuming.)

IANTHINA TRIBUS. *Ianth. testis ovato-rotunda, infrafrons rotunda, spiris brevibus, sicut in basi, impressis, ut bene striatis, columella tenui reflexa, aperturae aperturæ, medio sinuatae, ut supra.*

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

Hab. ———.

Closely allied to *E. trochus*, but it is more globose, come from a lacy color, and is easily recognized.

Species 18. (Fig. 1892 and 1893, Mus. Cuming.)

IANTHINA GIBBOSA. *Ianth. testis globosa, tenui, rotunda, spiris brevibus, sicut in basi, impressis, ut bene striatis, columella tenui reflexa, aperturae aperturæ, medio sinuatae, ut supra.*

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 reflexed, prolonged, aperture large, open, slightly sinuated in the middle, channelled at the base.

SWAINSON. *Zoological Illustrations, First Series, vol. ii, pl. 55.*

Antilles. (1892), p. 27, and 1893, Mus. Cuming.)

Hab. ———.

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

Species 19. (Fig. 1902 and 1903, Mus. Cuming.)

IANTHINA UNCOLLATA. *Ianth. testis globosa, spiris brevibus, sicut in basi, impressis, ut bene striatis, columella tenui reflexa, aperturae aperturæ, medio sinuatae, ut supra.*

THE UNCOLLATED 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 reflexed, appressed at the upper part, then prolonged; aperture rather large, slightly sinuated in the middle, channelled at the base.

CARPENNER. *Cat. Reagen Coll. in Brit. Mus.*, p. 187.

Hab. Malacca.

Until better information is obtained on the habits of the *Eschsch*, 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. 2002 and 2003, Mus. Cuming.)

IANTHINA PALLIDA. *Ianth. testis globosa, spiris parvis, infrafrons rotunda, spiris brevibus, sicut in basi, impressis, ut bene striatis, columella tenui reflexa, aperturae aperturæ, medio sinuatae, ut supra.*

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 reflexed; 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 pallida*, Philippi.

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

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



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*, Mss. Cuming.)

IANTHIA BIFIDA. *Ianth. testā turbinatā, spirā acuminato-conicā, anfractibus rotundatis, subangustis, concentricē densē lamellato-striatis, striis medio peroblique sinuatis, intense violaceā, columellā tenuē reflectā, arcuatā; aperturā parvā, enarranter emarginatā*

THE BIFID IANTHIA. Shell turbinated, spire acuminate 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. exigua*. Its principal characteristic is the enormous notch in the aperture, which gives the lip a bifid structure.

CANTHINA.

	Pla	Species	Pla	Species
<i>affinis, Reece</i>	I	2	<i>grandis, Reece</i>	I
<i>Africana, Reece</i>	II	8	<i>involuta, Reece</i>	III
<i>halictata, Reece</i>	III	11	<i>arideolor, Reece</i>	V
<i>laevior, Meuke</i>	I	5	<i>nitens, Meuke</i>	IV
<i>lilifida, Nalfohl</i>	V	25	<i>pubes, Hareng</i>	IV
<i>Britannica, Leach</i>	III	14	<i>periscephala, Veron</i>	I
<i>costa, Reece</i>	I	4	<i>plumos-prata, Adams and Reece</i>	II
<i>caeruleata, Reece</i>	II	7	<i>prolongata, Payraudeau</i>	IV
<i>communis, Latreille</i>	I	5	<i>prolongata, Blainville</i>	IV
<i>decolorata, Carpenter</i>	IV	19	<i>roseola, Reece</i>	I
<i>depressa, Reece</i>	III	13	<i>Smithia, Reece</i>	III
<i>exigua, Loewek</i>	V	21	<i>striolata, Carpenter</i>	II
<i>fubula, Reece</i>	IV	17	<i>striolata, Adams and Reece</i>	V
<i>fragilis, Loewek</i>	II	6	<i>tricholeuca, Reece</i>	II
<i>globosa, Scoumon</i>	IV	18	<i>umbilicata, D'Orbigny</i>	V
				22

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

Miss Helen Clark of well known name.
New York.



COLUMBELLA.

PLATE I.

Genus COLUMBELLA, Lamarck.

Testa parviscula, ovato-oblonga vel trigona, interdum acicularis vel fusiformis, plerumque solida, aut levigata aut costata. Columella supra arcuata, interdum denticulata, labro plerumque incrassato, plus minus varicoso, indus 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 *stroutiformis*, 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 Montfort, 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 *Columbella* 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 varicâ, spirâ subulatâ, anfractibus decem, longitudinaliter costatis, ultimi medio gibboso-angulato, basi reflexo; apertura 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-pyramidatâ, spirâ subulatâ, anfractibus decem, albidis, fusco reticulatis, prope suturam articulis; apertura oblongâ, superâ acuminatâ, subcanaliculâ, labro incrassato, peritreme albo, subreflexo, intus laevi, columellâ arcuatâ.*

THE TURRETED COLUMBELLA. Shell elongately pyramidal, spire subulate, whorls ten, whitish, reticulated with brown, articulated near the suture; aperture oblong, acuminated 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 Montija 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, turritâ, albidâ, fulcro caridâ, spirâ acuminato-pyramidatâ, anfractibus decem ad duodecim, serie unâ tuberculorum instructis, ultimi dorso subgibbo, parte inferiore transversina striatâ; apertura longulatâ, et basia subcanaliculata et recurvâ, labro incrassato, varicoso, intus medio lamibâ et denticulatâ.*

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.

SOWERBY, 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, al-bā, fusco variegatā et reticulatā, epidermide tenui, filatā indatā, anfractibus undecim ad duodecim, primis parvis laevibus, caeteris longitudinaliter costatis, ultimo intra spiram sulcato; apertura parvisculā, oblongā,*

columnā subarcuatā, labro incrassato, varicoso, ciliatā, 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, varicosely strongly toothed within.

SOWERBY, 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.



6a.



6b.



7a.



8a.



8b.



7b.



9a.



9b.



10.



COLUMBELLA

PLATE III

Number 112. (Fig. 6.) Mus. Cuning.)

COLUMBELLA COLUMBINA. *Col. testa ovata, spirally ribbed, white, stained with dark-chestnut, whorls six, abruptly angled at the upper part, interstices between the ribs densely-set, aperture contracted, acuminate at the upper part, peristome denticulated within.*

Col. testa ovata, spirally ribbed, white, stained with dark-chestnut, whorls six, abruptly angled at the upper part, interstices between the ribs densely-set, aperture contracted, acuminate at the upper part, peristome denticulated within.

COLUMBELLA COLUMBINA. Shell ovate, spirally ribbed, white, stained purple, spirally angled at the top, ventrally, and a ridged and grooved, occasionally perforated, yellowish, ridges "ridged with red" out to the rim, peristome purple, contracted within. The upper part, denticulated beneath. Teste lip thin, polished, acuminate.

SWINNEY, Proc. Zool. Soc. 1832, p. 117.

Hab. Gulf of Bala, Central America.

One single specimen of this remarkable species has been discovered. It was dredged by Mr. Cuning in the Gulf of Bala, and locally from a sandy beach, but not at the place of capture.

Species 11. (Fig. 6.) Mus. Cuning.)

COLUMBELLA CALARINA. *Col. testa ovata, spirally ribbed, white, stained with dark-chestnut, whorls six, abruptly angled at the upper part, interstices between the ribs densely-set, aperture contracted, acuminate at the upper part, peristome denticulated within.*

COLUMBELLA COLUMBINA. Shell ovate, longitudinally finely ribbed, spirally pyramidal, white, stained and broadly banded with dark-chestnut, whorls six to seven, abruptly angled at the upper part, interstices between the ribs densely-set, aperture contracted, acuminate at the upper part, peristome denticulated within.

SWINNEY, Proc. Zool. Soc. 1832, p. 116.

Hab. Panama (under stones), Cuning.

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

Species 12. (Fig. 6.) Mus. Cuning.)

COLUMBELLA FASCIATA. *Col. testa ovata, spirally ribbed, white, stained with dark-chestnut, whorls six, abruptly angled at the upper part, interstices between the ribs densely-set, aperture contracted, acuminate at the upper part, peristome denticulated within.*

Col. testa ovata, spirally ribbed, white, stained with dark-chestnut, whorls six, abruptly angled at the upper part, interstices between the ribs densely-set, aperture contracted, acuminate at the upper part, peristome denticulated within.

COLUMBELLA COLUMBINA. 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.

SWINNEY, Bankerville Catalogue, App. p. 25.

Hab. ———.

As the shell is oblong-ovate smooth, the pattern of whorls is oval rather than banded.

Species 13. (Fig. 6.) Mus. Cuning.)

COLUMBELLA GILVATA. *Col. testa oblongo-pyramidalis, spirally ribbed, fulvous-chestnut, profusely sprinkled with white spots, aperture contracted, acuminate at the upper part, peristome denticulated within.*

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

SWINNEY, The same, Conchyliorum, p. 131 pl. 39, f. 124 *Hab.* ———.

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

Species 14. (Fig. 6.) Mus. Cuning.)

COLUMBELLA VARIA. *Col. testa oblongo-pyramidalis, spirally ribbed, fulvous-chestnut, profusely sprinkled with white spots, aperture contracted, acuminate at the upper part, peristome denticulated within.*

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

SWINNEY, Proc. Zool. Soc. 1832, p. 116.

Hab. Panama (under stones), Cuning.

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



16a



15a



16b



17a



15a



17b



16b



17a



16b



17b



20a



21a



21b



22a



22b



22c



23a



23b



23c



24a



255a



255b



256a



256b



257a



257b



258a



258b



259a



259b

COLUMBELLA.

PLATE VI.

Species 25. (Fig. 26. Mus. Cuning.)

COLUMBELLA SPLENDIDULA. *Col. testâ oblongâ, lavi, arenâ, basi, maculis albis costarumque variegatâ, spirâ brevissimâ, sutura impressâ, anfractibus septem ad octo, laceratis, recessu basali latè subrotundis, apertura flexuosa, labio exteriori incrassato, vultu 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.

SOWLEBY. *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); Cuning.

Characterized by a peculiar obtusely cylindrical spire, and a finely tessellated style of painting.

Species 26. (Fig. a, b, Mus. Cuning.)

COLUMBELLA PAVONINA. *Col. ? sin. suffusivata, basi contractâ et recessâ, variegatae-albâ, fulvis-costarum oblique latistripatâ, spirâ acuminatâ, anfractibus sex ad septem, brevibus, convexis, ad basin linearisulcatis; apertura parvisulcâ, labio exteriori incrassato, vultu denticulato.*

THE PEACOCK COLUMBELLA. Shell somewhat fusiform, contracted and recurved at the base ash-white, obliquely broadly striped with fulvous-chestnut, spire acuminate, whorls six to seven, short, convex, linearly grooved at the base; aperture rather small, outer lip thickened, denticulated within.

HUBBS. *Mich. 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. Cuning.)

COLUMBELLA FLAVA. *Col. testâ cylindrico-oblongâ, lavi, florescente-rufâ, albis maculatâ et punctatâ, spirâ subacuminatâ, anfractibus planis-convexis, ad basin linearisulcatis; apertura parvisulcâ, labio ext-rio parvis incrassato, vultu denticulato.*

THE YELLOWISH COLUMBELLA. Shell cylindrically oblong, smooth, yellowish-red, spotted and dotted with white, spire somewhat acuminate, whorls flatly convex, linearly grooved at the base; aperture rather small, outer lip but little thickened, denticulated within.

Buccina flava, Brugnière, *Diét. No. 53*

Columbella flava, Lamarek.

Hab. ———?

A cylindrically oblong shell, neatly blotched and dotted with white upon a yellowish-red ground.

Species 29. (Fig. a, b, Mus. Cuning.)

COLUMBELLA CORONATA. *Col. testâ oblongo-acuminatâ, albi, basi non variegatâ, anfractibus septem ad octo, laceratis, testâ altius serie vultu tuberculorum incrassatorum circumscissâ; labio exteriori latus denticulato.*

THE CORONATED COLUMBELLA. Shell oblong acuminate, white, variegated with brown, whorls seven to eight, smooth, the last three coronated with a row of pointed tubercles; outer lip denticulated within.

SOWLEBY. *Proc. Zool. Soc.* 1832, p. 114.

Hab. Bay of Panama.

The variegated brown painting of this species has mostly a freckled-reticulated appearance.



171



172



173



174



175



176



177



178



179



180

COLUMBELLA.

PLATE VII.

Species 30. (Fig. 30. Mus. Cuning.)

COLUMBELLA HARETIIFORMIS. *Col. Testa ovato-subtriangul.,*
gibba, in auro eburnea, aperturæ lobis junior indurati;
spira brevis, conica, sulci octaves sex ad septem, superioris
aperturæ subrotundæ, in auro albique decussatis
5. 8., apert. oblongata, in concha parviterata sub-
rotunda, parviterata, testæ exteriori incrassata, lob. superioris
rotas dentatas, juniori subrotunda.

THE HARETIIFORM COLUMBELLA. Shell ovately subtriangular, black, spotted with white, covered with a thin fulvous epidermis; spire short, sharp; whorls six to seven, angled and indurated in 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; ear slightly recurved.

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

Hab. Bay of Panama (found on dead shells in ten fathoms).
Cuning.

Curiously distinguished from all other species of the genus by its channel-winged aperture, which gives the shell a characteristic sharp shape.

Species 31. (Fig. a, b, Mus. Cuning.)

COLUMBELLA VALLIOSA. *Col. testâ oblongo-ovata, albâ,*
â roseis, auro reticulatâ et punctatâ, ad suturas
grossulatâ, spira conica, antecamerâ sex ad septem,
exteriori rotundâ; aperturâ quadrilaterâ, lobis exteriori
superâ; auro, intus dentatâ.

THE VARIOUSE COLUMBELLA. Shell acuminate oblong, fulvous, reticulated and dotted with black, opaque white at the sutures; spire turrited, whorls six to seven, variously ribbed; aperture rather small, outer lip thickened, notched towards the upper part, denticulated within.

GUSSON, *Proc. 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. Cuning.)

COLUMBELLA RUGOSA. *Col. testâ oblongâ, auro gibbo-*
sâ, albâ, auroâ perstriptâ nigra lineatâ, spira
turritâ, ad apicem plerumque erosa, anfractus septem,
longitudinaliter rimosa-costata, costis superioribus tubercu-
latis, aperturâ subapertâ.

THE RUGOSE COLUMBELLA. Shell oblong, rather gibbous in the middle, whitish, stained with large black blotches; spire turrited, generally eroded at the apex, whorls seven, longitudinally rugosely ribbed, ribs tubercled at the upper part, aperture rather open.

SOUMERY, *Proc. Zool. Soc.* 1832, p. 115.

Hab. Panama and Nariapi (under stones); Cuning.

A strongly tubercled elaiik-white shell, ped with one or two large black blotches.

Fig. 33. (Fig. a, b, Mus. Cuning.)

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. Cuning.)

COLUMBELLA FLEXOSA. *Col. testâ fœfo-rufâ-oblongâ,*
albâ, fusca densè flexuoso-reticulatâ, spira acuminatâ,
anfractibus sex, planioribus; aperturâ parvâ, lobis
exteriori incrassatâ.

THE FLEXOSE COLUMBELLA. Shell fusiformly oblong, white, densely flexuosity reticulated with brown, spire acuminate, whorls six, flatly convex; aperture small, outer lip thickened.

Brevina flexuosa. Lamarck, *Ann. sans vert.* vol. 8, p. 175.

Hab. — ?

Chiefly remarkable for its very densely netted chestnut pattern.



55a



56a



56b



57a



58a



58b



59a



60a



60b



61a

COLUMBELLA.

PLATE VIII.

Species 35. (Fig. 35a, b.)

COLUMBELLA OREGORA. *Col. testa subquadr. laevi, obtusè*
spira, striis longitudinalibus nigrescentibus, spiræ
rotæ, septibus septem, conicè truncatè, labio
ext. rariè denticulatè, columella rotæ sub
obtusè, tubo canali h. r. 28, 30, 32, 34, 36.

THE OREGON 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 relieved.

SOWERBY, Transac. Conch. vol. 1, p. 121, pl. 37, f. 79, 71.

Hab. North-west coast of New Holland.

The coloring of this species is peculiar, the obvious longitudinal black-brown streaks appearing over a faint network or stained band of scorched-fulvous.

Species 37. (Fig. n, 3 Mus. Cuming.)

COLUMBELLA TYLERI. *Col. testâ ovato-oblongâ, laevi,*
subtus, f. r. 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 480, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502, 504, 506, 508, 510, 512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 576, 578, 580, 582, 584, 586, 588, 590, 592, 594, 596, 598, 600, 602, 604, 606, 608, 610, 612, 614, 616, 618, 620, 622, 624, 626, 628, 630, 632, 634, 636, 638, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710, 712, 714, 716, 718, 720, 722, 724, 726, 728, 730, 732, 734, 736, 738, 740, 742, 744, 746, 748, 750, 752, 754, 756, 758, 760, 762, 764, 766, 768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 832, 834, 836, 838, 840, 842, 844, 846, 848, 850, 852, 854, 856, 858, 860, 862, 864, 866, 868, 870, 872, 874, 876, 878, 880, 882, 884, 886, 888, 890, 892, 894, 896, 898, 900, 902, 904, 906, 908, 910, 912, 914, 916, 918, 920, 922, 924, 926, 928, 930, 932, 934, 936, 938, 940, 942, 944, 946, 948, 950, 952, 954, 956, 958, 960, 962, 964, 966, 968, 970, 972, 974, 976, 978, 980, 982, 984, 986, 988, 990, 992, 994, 996, 998, 1000.

TYLER'S COLUMBELLA. Shell ovately oblong, smooth white reticulated and streaked with rusty black; spire somewhat obtusely acuminate, whorls seven, rather ventricose; aperture rather broad, outer lip slightly thickened, denticulated within, columella arched.

GRAY, Griffith's, Cuvier's Annual Kingdom.

Columbella Tyleriana, Dufren.

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. n, 6, Mus. Cuming.)

COLUMBELLA FLEUCTATA. *Col. testâ subtriangulo-ovata,*
crassa, ustulato-nigricè, laevi, fulvous-albis nente angu-
latis transversis fluctuatis, spira conicè-truncatè, au-
fractibus septem, superè rotulè tuberculatis; aperturâ
subangustâ, labio ext. rariè superè carinatosinuato, medio
intus denticulatè.

THE WAVED COLUMBELLA. Shell somewhat triangularly ovate, thick, scorched-black transversely waved with sharply zigzag fulvous-white lines, spire conically truncated, whorls seven, strongly tubercled at the upper part; aperture rather narrow, outer lip callously sinuated, denticulated within in the middle.

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

Hab. —?

A solid strongly-tubercled shell, of a dark burnt-brown colour, puffed out with fine transversely zigzag yellowish-white lines.

Species 39. (Fig. n, 5, Mus. Cuming.)

COLUMBELLA SPONGIARUM. *Col. testâ ovali, medio obusâ,*
ad basin contractâ, laevigatâ, albidâ, fulvescenti-lividâ
et reticulatâ, spirâ acuminatâ, conicè, anfractibus septem ad octo, superè subreticulatis; aperturâ angustâ,
labio ext. rariè subincurvato, medio intus truncato et aculeo denticulatè.

THE SPONGE COLUMBELLA. Shell ovate, stout in the middle contracted at the base, smooth whitish, stained and reticulated with yellow, spire acuminate, 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.

DUFRENOY, 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.



41.a



42.a



43.b



44.a



45.a



46.b



47.b



48.a



49.b



50.b

COLUMBELLA.

PLATE IX.

Species 40. (Fig. 31. *♂*, Mus. Cuming.)

COLUMBELLA BEIDJESI. *Col. testâ arenâ, utrinque attenuatâ, fuscescente-costâ, v'apiculatâ, arenâ albiâ angulâ obliquâ in medio, spirâ breviusculâ, acuminatâ, angustius superâ, dentibus; aperturâ superâ angulato-angustiusculatâ, latâ, callosâ-denticulatâ.*

BIRD'S COLUMBELLA. Shell ovate, attenuated at each end, brownish-red, white-dotted, with a large, white, oblique band in the middle, spine rather short, acuminate, whorls seven, smooth; aperture narrow, angularly acuminate 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 angle.

Species 41. (Fig. 32. *♂*, Mus. Cuming.)

COLUMBELLA RETICULATA. *Col. testâ opacâ, arenâ densâ, subangustâ, costâ forâ breviusculâ, fuscescentâ, punctis albis parviscumâ extenuatâ, spirâ brevâ, acutâ, angustiusculâ superâ, septem; aperturâ subangustâ, superâ angulato-productâ, callosâ callosâ-denticulatâ.*

THE RETICULATED COLUMBELLA. Shell ovate, obtuse in the middle somewhat angular, spirally linearly grooved, fuscous-red, prominently reticulated with white dots, spine short, sharp, whorls six to seven; aperture rather narrow, angularly produced at the upper part, callously denticulated within.

LAMARCK. *Ann. Mus. vert. t. 6, p. 470.*

Hab. Brazil.

Of a solid, angularly ovate form, mostly fuscous-red, interrupted promiscuously with aggregations of white dots.

Species 12. (Fig. 33. *♂*, Mus. Cuming.)

COLUMBELLA PLELI. *Col. testâ subangulato-ovata, imbricatâ, spirâ laterâ subalbâ, albiâ, fuscescentâ costâ angulâ, spirâ breviusculâ, acuminatâ, angustiusculâ superâ, septem; costâ angulato-angustiusculâ, aperturâ oblongâ, superâ sinuatâ, callosâ-denticulatâ.*

PLELI'S COLUMBELLA. Shell somewhat angularly ovate, swollen, spirally grooved, white, variegated with fus-

cous-red, spine rather short, acuminate, whorls six, depressly concave round the upper part; aperture oblong, sinuated at the upper part, callously denticulated within.

KEYSER. *Icon. Conchilias Vivantes, p. 24, pl. 5, f. 2.*
Columbella plelii, Sowerby.

Hab. Philippine Islands: Cuming.

Distinguished by a rather tumid growth, the whorls being depressly concave round the upper part.

Species 43. (Fig. 34. *♂*, Mus. Cuming.)

COLUMBELLA BOIVINI. *Col. testâ opacâ, crassa, varicoso-nigrâ, minutè allapiculatâ, spirâ rudè turritâ, angustiusculâ sex ad septem, superâ tuberculatâ, inferâ spirâ laterâ subalbâ; aperturâ ovatâ, breviusculâ, superâ sinuatâ, latâ, crassâ, callosâ denticulatâ, denticatis purpureo-fulvâ.*

BOIVIN'S COLUMBELLA. Shell ovate, thick, blue-black, minutely white-dotted, spine rudely turrited, 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 Newyo, 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. 35. *♂*, Mus. Cuming.)

COLUMBELLA XIPHIELLA. *Col. testâ cylindrico-ovata lævigatâ, vilente, albâ, aurantiâ-rufa strigatâ et variegatâ; aperturâ oblongâ, atrinque denticulatâ, denticulis intersitiis intersâ purpureis.*

THE YELLOW-STREAKED COLUMBELLA. Shell cylindrical ovate, smooth, shining, white, streaked and variegated with orange-red; aperture oblong, denticulated on both sides, intersices between the denticles dark-purple.

DELOS. *Morog. 4a genre, pl. 9 f. 13, 14.*

A delicately painted, shining, cylindrical ovate shell curiously stained with dark-purple in the intersices between the denticles of the aperture.

April, 1858.



g.10.



g.11.



g.12.



g.13.



g.14.



g.15.



g.16.



g.17.



g.18.



g.19.

COLUMBELLA.

PLATE X.

Species 45. (Figs. *a, b*, Mus. Cuming.)

COLUMBELLA JAPONICA. *Col. testâ ovata, utrinque attenuata, excavato-cultri, nigro strigatâ et reticulatâ, spirâ acutâ, suturis impressis, infractibus sex, plano-convexis, cœcis basi spiritaliter levatis; apertura oblongâ.*

THE JAPAN COLUMBELLA. Shell ovate, attenuated at each end, bluish-white, streaked and reticulated with black, spine 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. testâ subulata, gracili, siliâ, opacissimo fluc. aulogae fuscoe, nultique cœnigâ, spirâ acutâ, infractibus septem, plano-convexis; apertura parvâ, labio exteriori incrassato, intus denticulato.*

THE NEEDLE COLUMBELLA. Shell subulate, slender, solid, variegated throughout with minute brown flames and opaque-white, spine sharp, whorls seven, flatly convex; aperture small, lip thickened, denticulated within.

Hab. California.

A solid, subulate shell, beautifully painted with bands of fine longitudinal brown flames, relieved with opaque-white.

Species 47. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA MERCATORIA. *Col. testâ ovata, tumidiusculâ, nultique spiritaliter subulata, cavâ pictâ, interlobâ arcuata, spirâ brevi, infractibus sex, superâ convexo-depressâ, ad basin recurvis; apertura oblongâ, subangustâ, labio exteriori tolidi cœcilo-denticulato.*

THE COMMON COLUMBELLA. Shell ovate, rather swollen, spirally grooved throughout, variously painted, sometimes articulated, spine short, whorls six, concavely depressed round the upper part, recurved at the base; aperture oblong, rather narrow, outer lip thickened, very callously denticulated.

Voluta mercatoria, Linneus, Syst. Nat. (Gmelin's edit.) p. 3446.

Columbella mercatoria, Lamarck.

Hab. West Indies.

This well-known species is chiefly characterized by its somewhat tumid growth and grooved sculpture, and by its pointing, which is generally sparingly articulated.

Species 48. (Fig. *a, b*, Mus. Cuming.)

COLUMBELLA DECUSSATA. *Col. testâ oblongâ, crassâ, alidâ, fusco-maculatâ, spirâ turratâ, infractibus quinque, tergitibus ovalis, decussatâ costatis; apertura parvâ, subtriangulâ, labio exteriori incrassato, depresso-angulato, intus denticulato.*

THE DECUSSATED COLUMBELLA. Shell oblong, thick, white, marbled with brown, spine 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. 59, 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. testâ subacuminatâ, turratâ, excavato-cultri, siliâ-fuscatâ, spirâ acutâ, infractibus octo ad nona, longitudinaliter lyrate-costatis, cavâ fusciâ; apertura parvisculâ, intus denticulatâ.*

THE LONG-MOUTHED COLUMBELLA. Shell somewhat acuminately turreted, blue-white, hard-banded, spine sharp, whorls eight to nine, longitudinally lyrate-ribbed, ribs brown, aperture rather small, denticulated within.

ANON. MS. Mus. Cuming.

Hab. California.

A sharply acuminated species, lyrate-ribbed throughout, distinguished by a peculiar arrangement of colouring.



214



215



216



217



218



219



220



221



222

COLUMBELLA.

PLATE XI.

Species 50. (Fig. *a, c*, Mus. Cuming.)

COLUMBELLA FULGURANS. *Col. testâ ovata, crassiusculâ, purpureo-âtrâ, ab. vel punctata vel fulguratâ, spirâ brevi, acutâ, anfractibus sex et se. plura, lacinis superioribus; aperturâ oblongâ, labio externo incrassato, intus albâ-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.

Colaba flavescens, var., Gmelin

Buccina 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 VESICOLOR. *Col. testâ ovatâ, antra ventricoseâ, pallidâ, coloribus variis punctâ, spirâ brevi, acutâ, anfractibus sex, transversim sulcatâ, superioribus; aperturâ oblongâ, flexuosâ, labio externo intus callisoso-denticulato.*

THE VARIO-COLORED 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, laci, nitente, albicante, fulvis-rufovente maculatâ, spirâ brevi, acutâ, anfractibus septem, planis-concavis; 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 nitida, Sowerby.

Hab. West Indies.

Mr. Sowerby thinks that this is the *Buccina nitidulus* of Linnaeus, but M. Deshayes does not agree with him in this opinion.

Species 53. (Fig. *a, b, c*, Mus. Cuming.)

COLUMBELLA LEVIGATA. *Col. testâ ovatâ, truncatâ, subcentricâ, levigatâ, aurantio-âtrâ, fusco et roseo strigatâ et variegatâ, spirâ brevi, acutâ, anfractibus sex, concavis; columella subnatactâ, 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.

Buccina levigata, Linnaeus, Syst. Nat. (Gmel. edit.) p. 3497.

Columbella caucana, Sowerby

Hab. — ?

An extremely pretty, light, ventricose species, striped and variegated with fulvous-brown or delicate rose





a 1



a 2 a



a 1 b



a 2 a



a 2 a



a 1 b



a 2 b



a 2 a



a 1 b



a 2

COLUMBELLA.

PLATE XIII.

Species 60. (Fig. a, b, Mus. Cuming.)

COLUMBELLA SELVA Cuming. *Col. testa ovato-pyriformi, subrotunda, nitida, alba, spirae pinnatis, suturae albae, subrotunda, nitida, alba, spirae pinnatis, suturae albae, subrotunda, nitida, alba.*

THE TESTED COLUMBELLA. Shell ovate, spire shortly conical, acute at the base, notched and denticled with pale purple-streaked striatae, flaked with white at the sutures; aperture small, not denticulated, swollen within and nearly closed.

KEY NOTE. Cuming's *Selva*; *Col.* p. 11, f. 1.
Hab.—Aviculae.

An elegant both shining species, richly painted with white flaked epiphosian.

Species 61. (Mus. Cuming.)

COLUMBELLA GILBERTI Cuming. *Col. testa ovato-pyriformi, subrotunda, nitida, alba, spirae pinnatis, suturae albae, subrotunda, nitida, alba, spirae pinnatis, suturae albae, subrotunda, nitida, alba.*

THE GILBERTI COLUMBELLA. Shell ovately pyramidal, spire subulate, whorls flatly convex, clouded with brown, the last somewhat gibbous, variegate at each side, varices white; aperture small, not denticulated, canal short, rolled.

NOTE. *Proc. Zool. Soc.* 1852, p. 115.

Hab. Bay of Caracas and Puerto Barreiro, Central America (in sandy mud, at the depth of eleven fathoms); Cuming.

A solid sculptured species, rather gibbously angled round the lower part, with a white calla as varice on either side.

Species 62. (Fig. a, b, Mus. Cuming.)

COLUMBELLA COLUMBIANA Cuming. *Col. testa oblongo-pyriformi, subrotunda, nitida, alba, spirae pinnatis, suturae albae, subrotunda, nitida, alba, spirae pinnatis, suturae albae, subrotunda, nitida, alba.*

THE SPINIFLUX COLUMBELLA. Shell oblong-pyramid, yellowish, reticulated with chestnut, smooth, spire acuminate, moderately dehiscent; aperture rather

short, lip denticulated within, notched at the upper part.

NOTE. QUOY and GAIMARD, *Zool. Voy. de l'Australie*, vol. II, p. 271, pl. 30, f. 21, 22.

Columbella gilberti, Sowerby.

Hab.—Pauian (common under stones); Cuming.

This species confounded originally with *Buccina*, may be recognized by its characteristic notched painting.

Species 63. (Fig. a, b, Mus. Cuming.)

COLUMBELLA TUMIDA Cuming. *Col. testa ovato, medio truncata, epiphosiana, alba, spirae pinnatis, suturae albae, subrotunda, nitida, alba, spirae pinnatis, suturae albae, subrotunda, nitida, alba.*

THE SWOLLEN COLUMBELLA. Shell ovate, swollen in the middle, bluish-white, covered with a yellow epiphosian, 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.

NOTE. Cuming, *Monog. de Genre*, pl. 13, f. 13, 14.

Hab.—?

A stout white species, finely grooved across, swollen with a light yellow epiphosian.

Species 64. (Fig. a, b, Mus. Cuming.)

COLUMBELLA BICANALEGATA Cuming. *Col. testa ovato-pyriformi, subrotunda, nitida, alba, spirae pinnatis, suturae albae, subrotunda, nitida, alba, spirae pinnatis, suturae albae, subrotunda, nitida, alba.*

THE TWO-CANALLED COLUMBELLA. Shell ovately pyramidal, sharp at the apex, spirally grooved at the base, spire acuminate, uppermost whorls longitudinally ribbed, ped-dial oblong, longitudinally waved with fulvous-d lines; aperture oblong, rounded at the upper part, into canal, lip thick, notched, pointed at the top, slightly reflected at the base.

NOTE. *Proc. Zool. Soc.* 1852, p. 115.

Hab.—Galapagos Islands; Cuming.

A strikingly characteristic species, distinguished by its channelled aperture and pointed extension of the lip.

Species 65. (Mus. Cönnig.)

COLUMBELLA PUELLA. *Col. testâ subâ siforâ, spirâ cor-
cili, anfractibus plano-convexis, longitudinaliter cost-
atis, albis ad basin laevibus; reflexo-obscurâ,
in medio et subaequalifurcâ; apertura parvis-
sâ, utraque dentatâ, ciliâ attenuatâ et recurvâ*

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.

SEWERBY, MS. in Mus. Cambie.

Hab. Philippine Islands.

A delicate fusiform species, contrasting curiously in form of the base with the preceding.



COLUMBELLA.

PLATE XIV.

MUSEUM.

1890. 1891. 1892. 1893. 1894. 1895. 1896. 1897. 1898. 1899. 1900. 1901. 1902. 1903. 1904. 1905. 1906. 1907. 1908. 1909. 1910. 1911. 1912. 1913. 1914. 1915. 1916. 1917. 1918. 1919. 1920. 1921. 1922. 1923. 1924. 1925. 1926. 1927. 1928. 1929. 1930. 1931. 1932. 1933. 1934. 1935. 1936. 1937. 1938. 1939. 1940. 1941. 1942. 1943. 1944. 1945. 1946. 1947. 1948. 1949. 1950. 1951. 1952. 1953. 1954. 1955. 1956. 1957. 1958. 1959. 1960. 1961. 1962. 1963. 1964. 1965. 1966. 1967. 1968. 1969. 1970. 1971. 1972. 1973. 1974. 1975. 1976. 1977. 1978. 1979. 1980. 1981. 1982. 1983. 1984. 1985. 1986. 1987. 1988. 1989. 1990. 1991. 1992. 1993. 1994. 1995. 1996. 1997. 1998. 1999. 2000. 2001. 2002. 2003. 2004. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092. 2093. 2094. 2095. 2096. 2097. 2098. 2099. 2100.

141. MEXICO. COLUMBELLA. Shell suboblong, white, smooth, with a few small, dark spots. Aperture narrow, with a small, dark spot. Suture with a small, dark spot. Columella with a small, dark spot. Shell with a small, dark spot.

H. A. M.

Distinguish this species by its slow growth, usually found with a small, dark spot. Spots are white-green.

Species 66. (Mus. Canning.)

COLUMBELLA. *Col. testis*. Shell suboblong, white, smooth, with a few small, dark spots. Aperture narrow, with a small, dark spot. Suture with a small, dark spot. Columella with a small, dark spot. Shell with a small, dark spot.

142. VASCO DA GAMA. COLUMBELLA. Shell suboblong, white, smooth, with a few small, dark spots. Aperture narrow, with a small, dark spot. Suture with a small, dark spot. Columella with a small, dark spot. Shell with a small, dark spot.

SOMEYER, *Trans. Acad. Sci. Phila.*, p. 128, pl. 77, f. 51, 52.

H. A. M. (Mus. Canning.)

A pretty, common species, slowly transitory, colored throughout, dotted with elements of brown, green, and white bands.

Species 68. (Mus. Canning.)

COLUMBELLA. *Col. testis*. Shell suboblong, white, smooth, with a few small, dark spots. Aperture narrow, with a small, dark spot. Suture with a small, dark spot. Columella with a small, dark spot. Shell with a small, dark spot.

143. (Mus. Canning.) *Col. testis*. Shell suboblong, white, smooth, with a few small, dark spots. Aperture narrow, with a small, dark spot. Suture with a small, dark spot. Columella with a small, dark spot. Shell with a small, dark spot.

taller, convex, longitudinally ribbed, ribs obsolete on the last whorl; aperture ovate.

SOMEYER, *Trans. Acad. Sci. Phila.*, p. 129, pl. 38, f. 111, 112. —?

Slightly variegated with various-sized chestnut blotches.

Species 69. (Mus. Canning.)

COLUMBELLA. *Col. testis*. Shell suboblong, white, smooth, with a few small, dark spots. Aperture narrow, with a small, dark spot. Suture with a small, dark spot. Columella with a small, dark spot. Shell with a small, dark spot.

MEXICO. COLUMBELLA. Shell narrowly acuminated, smooth, fulvous, encircled with an interrupted red band; aperture short, canal truncate, lip slightly notched in the upper part, faintly denticulated within. *Columella* *ovata*. MEXICO (not of Nuttall). *H. A. M.* (Australia).

This interesting Australian species has very much the appearance of a *Zenopsis*. 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, filled with white.

Species 70. (Mus. Canning.)

COLUMBELLA. *Col. testis*. Shell suboblong, white, smooth, with a few small, dark spots. Aperture narrow, with a small, dark spot. Suture with a small, dark spot. Columella with a small, dark spot. Shell with a small, dark spot.

144. (Mus. Canning.) *Col. testis*. Shell globose ovate, not encircled with suture lines, suture shortly conical, sutures rather impressed; aperture contracted, denticulated on each side.

DECATUR, *Mus. du Centre*, pl. 8, f. 13 to 16.

H. A. M. —?

to obscure subglobose shell, beaded throughout with large white grooves set in a colored ground.

Species 71. (Mus. Canning.)

COLUMBELLA. *Col. testis*. Shell suboblong, white, smooth, with a few small, dark spots. Aperture narrow, with a small, dark spot. Suture with a small, dark spot. Columella with a small, dark spot. Shell with a small, dark spot.

transverse, transversis sulcostriatis; apertura paleo-vestita, labra incrassata.

THE FINELY-SPRINKLED 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 oratâ, tenuicollâ, levigatâ, rufescente-fulvâ, prope suturas albiâ, spirâ brevissimâ, suturis impressis; aperturâ oratâ, 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, reticulated round the upper edge of the whorls with white

Species 73. (Mus. Cuming.)

COLUMBELLA AYARA. *Col. testâ subangustâ acuminatâ albiâ, fusca vel fulvo-aurantia nigro-fulvâ, suturis saepe impressis, interstitiis longitudinaliter decussatis, interstitiis stris reticulatis; aperturâ parvâ, labra variosa.*

THE GOULD'S COLUMBELLA. Shell rather narrowly acuminated, white, blotched with brown or fulvous-orange, sutures impressed, whorls longitudinally flexuously ribbed, interstices reticulated with scarce 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.



70



75a



71



71a



76a



76b



72



73a



73b



74

COLUMBELLA.

PLATE XV.

Sp. = 74. (Mus. Cuming.)

COLUMBELLA PARVALINA. *Col. testis ovato-acuminatus, lobis, pedibus, ceteris reticulatis-punctis, spiris brevibus, angustibus suboblongis, aperturâ parvis, labio tenui.*

THE LITTLE COLEMBELLA. Shell acuminately ovate, white-fanned with chestnut; spire sharp, whorls somewhat rounded; aperture small, lip rather thin.

GASKOIN, Proc. Zool. Soc.

Hab. Galapagos Islands.

An extremely acuminated species, conspicuous, painted throughout with chestnut flames upon a smooth white ground.

Species 75. (Fig. *a, b, c*, Mus. Cuming.)

COLUMBELLA PARVALINA. *Col. testis ovatis, lobis, pedibus, ceteris reticulatis-punctis, spiris brevibus, suboblongis, angustibus, aperturâ parvis, labio medio tumido et dilatato, ceteris ceteris, tenui.*

THE FAN-FILER COLEMBELLA. Shell ovate, smooth, white, ornamented with black beetle-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.

LACORDA, *Ann. Mus. vert.* vol. x, p. 279.*Hab.* Islands of Guinanas and Fiewo, 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 PUPIFORMIS. *Col. testis ovatis, oblongo-ovatis, lobis, pedibus, ceteris reticulatis-punctis, spiris brevibus, suboblongis, angustibus, aperturâ parvis, labio medio tumido et dilatato, ceteris ceteris, tenui.*

THE GOS COLEMBELLA. Shell ovate, acuminated at either extremity, longitudinally finely ribbed, dark brown, encased with two paler zones, interiorities of the ribs much 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. 13, 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 TABULA. *Col. testis ovatis, lobis, pedibus, ceteris reticulatis-punctis, spiris brevibus, suboblongis, angustibus, aperturâ oblonga, labio tenui, ceteris ceteris, tenui.*

THE LITTLE BEAN COLEMBELLA. Shell ovate, smooth, pale, variously reticulated-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.*Col. suboblonga, P. plumosa, DuRoi.**Hab.* Philippine Islands; Cuming.

A rather lightly convoluted shell, globose-ly solid in the middle, more or less finely reticulated with brown.

Species 78. (Mus. Cuming.)

COLUMBELLA AUSTRALIS. *Col. testis fusiformi-oblonga, pedibus, ceteris reticulatis, spiris brevibus, suboblongis, angustibus, aperturâ oblonga, denticulata.*

THE AUSTRALIAN COLEMBELLA. 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, Proc. Zool. Soc.

Hab. Sydney (under stones, at low-water).

This pretty and well-defined species partakes somewhat of the characters of the Brezinoid form of *Tribula*.

Species 79. (Mus. Cuming.)

COLUMBELLA ZEBRA. *Col. testis oblonga, subgranulata, lobis, pedibus, ceteris reticulatis-punctis, spiris brevibus, suboblongis, angustibus, aperturâ oblonga, denticulata.*

THE ZEBRA COLEMBELLA. 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



1812



1813



1814



1815



1816



1817



1818



1819



1820



1821



470



471



472



473



474



475



476



477



478



479

Species 86. (Fig. 86 and 87, *a, b*, Mus. Cuming.)

COLUMBELLA PUMPELLA. *Col. testâ acuminato-cylindrica; pallidâ, areolis, areolis fuscisque subtransversis raris, et, angustis superciliaribus longitudinaliter costatis, tuberculis interloba foveolatis; apertura parvâ, superâ emarginatâ, iatus denticulâtâ.*

THE FLAT-FLE 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. *Buccina patelliformis.* Kiener.

Hab. Caffaria.

An elegantly pointed species, partaking in a measure of the characters of *Totus* and *Pleuronax*.

Species 88. (Fig. *a, a*, Mus. Cuming.)

COLUMBELLA INSTANTEA. *Col. testâ aciculari, semipallidâ, punctata nodigis, flammis aurantiis; areolis subtransversis pictis, angustis plano-concavis transversis acuminatè striatis; apertura parviusculâ, labris levibus, iatus denticulâtâ.*

THE INTERVOX COLUMBELLA. Shell acicular, semi-transparent, everywhere dotted with opaque-white, pointed 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 truncatâ, alba, punctis rufiflavicis pictâ, angustis concavis, longitudinaliter costatis, intersticiis foveolatis; apertura parvâ, superâ emarginatâ.*

THE SUFFUSED COLUMBELLA. Shell oblong, spire truncated, 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 JASPEREA. *Col. testâ cylindrico-oblongâ, apice truncato, pallide roseâ, angustis concavis, costâ rima longitudinaliter costatis; apertura parviusculâ, superâ emarginatâ, iatus denticulâtâ.*

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 acutâ, medio ventricosâ, albidâ, coloribus variis pictâ, spirâ breviter pyramidaliter, angustis transversis sulcatis, superâ interdum nodulatis; apertura angustâ, flammis, superâ angulatâ, iatus denticulâtâ.*

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, areolis rufiflavicis nodigis streptatâ, spirâ breviter acutâ, angustis undique canalic. spirâlyter sulcatâ; apertura elongatâ, labris plano-incrassatâ, iatus denticulâtâ.*

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 *Conchella*.



93



95 a



95 b



95 c



96 a



96 b



97 a



97 b



97 c



98



100a



100b



101



103a



102



103b



104



105



106



107

COLUMBELLA.

PLATE XIX.

FIGS. 170-173. Mus. Cuming.

COLUMBELLA GASTRODONTA. *Col. gastrodonta* *Col. oblongata*
Col. gastrodonta *Col. gastrodonta* *Col. gastrodonta*
Col. gastrodonta *Col. gastrodonta* *Col. gastrodonta*
Col. gastrodonta *Col. gastrodonta* *Col. gastrodonta*

THE STRIPED COLUMBELLA. Shell broadly oblong, polished, polished, smooth, at an angle, absolutely free from any mark, but the suture, which is finely corded, change of line, the aperture small, the lip, and each side, with fine, up various small tubercles.

GASTROD., *Proc. Zool. Soc.* 1851, p. 11.
Hab. —?

A solid polished shell covered with opaque white brown-interrupted blotches upon a dull blue ground, while the aperture brings forward a white line.

Species 169. Mus. Cuming.

COLUMBELLA AUSTRIACA. *Col. austriaca* *Col. austriaca*
Col. austriaca *Col. austriaca* *Col. austriaca*
Col. austriaca *Col. austriaca* *Col. austriaca*
Col. austriaca *Col. austriaca* *Col. austriaca*

THE SOUTHERN COLUMBELLA. Shell oblongovate, ivory-white, shining, with a line encircled with a broad flesh band, aperture round, lip sparsely ovate, lip broadly notched at the upper part, conspicuously denticulated within.

GASTROD., *Proc. Zool. Soc.* 1851, p. 9.
Hab. Australia.

A shining ivory-white shell, broadly but not at the last whorl with soft blue-brown and having the lip broadly but rather superiorly notched at the upper part.

Species 191. Mus. Cuming.

COLUMBELLA ANTIATA. *Col. antiata* *Col. antiata*
Col. antiata *Col. antiata* *Col. antiata*
Col. antiata *Col. antiata* *Col. antiata*
Col. antiata *Col. antiata* *Col. antiata*

THE RINGED COLUMBELLA. Shell oblong-ovate, smooth, ivory-white, encircled round the middle with a con-

spicuous chestnut line, spirally rather obscure, suture somewhat sparsely ovate, lip faintly notched at the upper part, denticulated within.

Hab. Australia.

Of the same typical form as the preceding species, but of the same on an elastic substance. The conspicuous central chestnut line which encircles it appears throughout the space in the suture.

Species 192. Mus. Cuming.

COLUMBELLA CONFUSIVA. *Col. testis pectinifera* *Col. testis pectinifera*
Col. testis pectinifera *Col. testis pectinifera* *Col. testis pectinifera*
Col. testis pectinifera *Col. testis pectinifera* *Col. testis pectinifera*
Col. testis pectinifera *Col. testis pectinifera* *Col. testis pectinifera*

THE SEALED COLUMBELLA. Shell fusiform, white, stained with orange-brown or brown, whorls and round the middle, suture sharp, suture channelled, whorls rather flat, longitudinally plastically ridged, ridges on the last which disappearing towards the lower part; aperture rather small, lip thickened, various, denticulated within, canal caudate.

GASTROD., *Proc. Zool. Soc.* 1851, p. 7.
Hab. —?

This species may be only a variety of *C. pectinifera*.

Species 193. (FIGS. 193 a, 193 b, and 194. Mus. Cuming.)

COLUMBELLA BLANDA. *Col. testis orato-pyriformis* *Col. testis orato-pyriformis*
Col. testis orato-pyriformis *Col. testis orato-pyriformis* *Col. testis orato-pyriformis*
Col. testis orato-pyriformis *Col. testis orato-pyriformis* *Col. testis orato-pyriformis*
Col. testis orato-pyriformis *Col. testis orato-pyriformis* *Col. testis orato-pyriformis*

THE FINE COLUMBELLA. Shell ovately pyriform, pale, longitudinally wave-lined and flamed with orange-brown, lines near the dorsal suture ink-black, aperture broad, lip callous and finely beaded at the upper part, swollen at the lower, scarcely beaded within, canal rather broad.

SOULEBY, *Thesaurus Conch.* vol. 1, 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 195. (Mus. Cuming.)

COLUMBELLA UNICOLORE. *Col. testâ ovati, medio ventris-
caudâ, fulvo-ochraceâ, lineâ pallâ, suturâ subimpressâ,
aperturâ retusculâ, supra et infra subinflatis, labio in-
crassato, rotas denticulatis.*

THE ONE-COLOURED COLUMBELLA. Shell ovate, ventri-
cose in the middle, fulvous-chestnut, smooth, suture
rather impressed; aperture rather broad, somewhat
clused above and below, lip thickened, denticulated
within.

SWINNEY, *Proc. Zool. Soc.* 1832, p. 119.

Hab. Galapagos Islands; Cuming.

The clused contour of the aperture and outer lip of this
species arises from its inclination to become notched.

Species 196. (Mus. Cuming.)

COLUMBELLA PULCHA. *Col. testâ ovato-obovâ, imp. rotas
extusque saturatâ brunnâ, colâ mediâ elbâ, anfractuâ
concoloratâ, lacinâ, aperturâ retusculâ, labio
tenui.*

THE RUSSET-BROWN COLUMBELLA. Shell acuminately
oblong, dark-brown within and without, columella
white, whorls slightly convex, smooth; aperture
rather broad, lip thin.

GASCOIN, *Proc. Zool. Soc.* 1851, p. 6.

Hab. ———?

It is extremely doubtful whether this shell is ever to be
placed in the genus *Columbella*.

Species 197. (Mus. Cuming.)

COLUMBELLA UNIPUNCTATA. *Col. testâ ovato, rotas ovâ
lanceâ, zonââ, p. brunnâ-ellâ mediâ cingulâ, anfractuâ
concoloratâ, lacinâ, aperturâ retusculâ, supra et
infra effusi, rotas sinuatis denticulatis.*

THE ONE-BANDED COLUMBELLA. Shell ovate, fulvous-
chestnut, encircled round the middle with a narrow
fulvous-white zone, whorls convex, smooth; aperture
rather short, closed above and below, minutely den-
ticated within.

SWINNEY, *Proc. Zool. Soc.* 1832, p. 114.

Columbella maculata, 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. III.



COLUMBELLA.

PLATE XV.

Species 108 (Mus. Cuming.)

COLUMBELLA ALONDA. *Col. testâ ovata, albidâ, fasciâ nigrolineariâ ornatâ, infractionibus angustis obliquis costis, aperturâ ovata, labio varicoso.*

THE LITTLE ALONDA COLUMBELLA. Shell cylindrical ovate, fulvous-chestnut, obscurely banded, whorls obliquely ribbed round the upper part, aperture ovate, lip varicose.

DELOS. Monog. du congr. pl. 11. f. 5, 6.

Hab. West Indies.

Of a livid-chestnut colour, faintly banded, with the whorls partially obliquely ribbed.

Species 109 (Plz. 109, 110, and 112.)

COLUMBELLA PUSILLA. *Col. testâ ovata, albidâ, fasciâ nigrolineariâ ornatâ longitudinalibus flexuosis ovalibus costis, aperturâ ovata, infractionibus angustis, labio varicoso, aperturâ ovata, labio tenui callo, hemina, cir. denticulata.*

THE SMALL COLUMBELLA. Shell ovate, whitish, artfully painted with orange-brown longitudinal flexuously oval lines, whorls convex, smooth; aperture small, lip rather thin, brown, scarcely denticulated.

SOWERBY. Proc. Zool. Soc. 1844, p. 53.

Natalia Gouldi. 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 fasciæ.

Species 111 (Mus. Cuming.)

COLUMBELLA DEUTERUS. *Col. testâ ovata, albidâ, punctis nigrolineariâ fasciâ spiræ præmissâ punctâ, spirâ breviter costâ, costâ infractionibus deorsu denticulatis, infractionibus ovalibus, infractionibus deorsu costis; aperturâ parvâ, labio varicoso, superâ submarginata, labio denticulato.*

THE DEUTERUS COLUMBELLA. Shell ovate, whitish, sparsely promiscuously painted with orange-brown dots, spine 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, subheutâ, albidâ, fasciâ labi contractâ nigrolineariâ emarginatâ spirâ convexâ, infractionibus varicosis, longitudinaliter costatis, infractionibus deorsu cancellatis, costis infractionibus ultima præp. labium emarginatis; aperturâ ovata, labio superâ submarginata, labio denticulato.*

THE LITTLE COLUMBELLA. Shell oblong rather stout, whitish, encircled with a broad central blackish-chestnut band, spine conical, whorls convex, longitudinally ribbed, interstices densely cancellated, ribs of the last whorl disappearing near the lip; aperture ovate-lip slightly emarginated at the upper part, denticulated within.

SOWERBY. Proc. 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 *Maesgelia (Cylindrea, nonnull.)*

Species 115 (Mus. Cuming.)

COLUMBELLA DIMINUTA. *Col. testâ ovata, atriangâ attenuatâ, albidâ, spirâ fasciâ punctatâ, fasciâ nigrolineariâ basi, superficie unius deorsu callo cancellatâ, aperturâ parvâ, labio varicoso, superâ emarginatâ.*

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. testis ovata, tenuicula, laxigata, subpellucido-alba, arenulis punctisque aquidistantibus purpureo-fuscis ornata, anfractibus deorsum convexis; apertura ovata, labro truncato, supero submarginato.*

THE BEAUTIFUL COLUMBELLA. Shell ovate, rather thin, smooth, subpellucid-white, ornamented with purple-brown blotches and equidistant dots, whorls slightly convex; aperture ovate; lip rather thin, slightly notched at the upper part.

C. B. ADAMS, Cat. Shells of Panama, p. 31.

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 filiced at the sutures. The dots are more minute than is represented in the accompanying figure.

Species 117. (Mus. Cuming.)

COLUMBELLA MONILIFERA. *Col. testis oblongo-ovata, ovata, solidâ, anfractibus deorsum convexis, alba, areâ subquadratis fuscis bifasciatis, meta aperturae angustâ, rotis denticulatis.*

THE NECKLACE COLUMBELLA. Shell oblong-ovate, solid, strongly denticately ribbed throughout, white, margined with two bands of somewhat square brown spots; aperture rather narrow, denticulated within.

SOWERBY, Proc. Zool. Soc. 1834, p. 53.

Hab. West Indies.

The granules formed at the points of depression of the ribs have a delicate pearly appearance.



COLUMBELLA.

PLATE XXI.

Species 118. (Mus. Cuming.)

COLUMBELLA CILIOLIS. *Col. testâ pyramidalis-oblongâ, albâ, à base, lineâ tenuibus arcuatis longitudinaliter undatis eleganter punctâ, antrochilus subtransversis, superne tuberculato-costatis; aperturâ parvâ, columellâ tortuâ.*

THE CORN COLUMBELLA. Shell pyramidally oblong, whitish, shining, elegantly pointed 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 CAENATA. *Col. testâ oblongâ, crassâ, pallidâ, areolis lineisque arcuatis-costatis, tessellatis bifasciatis varicositatâ, spirâ subannulatâ, antrochilus longitudinaliter punctâ dense costatis, ad basin striatis, aperturâ parvâ-ciliâ, utrinque denticulatâ, labris superne emarginatis.*

THE CHAINED COLUMBELLA. Shell oblong, thick, pale, marked with two bands of tessellated orange-brown bands and lines, spire rather rounded, 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 caenata, 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. testâ ovatâ vel oblongo-cylindraceâ, tenui, pellucidâ, âtente, varietate pallidissimâ tinctâ et flavinulatâ, apice roseo; aperturâ brevi, labro subnuculato, superne emarginatâ, rix denticulatâ.*

THE MILKY COLUMBELLA. Shell ovate or oblongo-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. Babo, R. N.

So transparent that the columella may be seen throughout, from its commencement within the apex to the base.

Species 121. (Mus. Cuming.)

COLUMBELLA CARINATA. *Col. testâ pyramidalis-ovatâ, fulvâ, foveis duabus costaribus albidulo-circulatâ, antrochilus convexis, ultimo ceraso aperturam conspicere curvato; aperturâ subquadratâ, levissimè-costatâ, denticulatâ, effusâ, superne sinuatâ.*

THE KEELD COLUMBELLA. Shell pyramidally ovate, fulvous, encircled with two white-dotted circumferential bands, whorls convex, the last conspicuously beveled 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. testâ subfusiformi-oblongâ, costaribus costâ, pallidâ fulvo-olivaceâ, infra suturam albimaculatâ, spirâ acutâ, antrochilus convexis, spirâ interlineari-sulcatâ; aperturâ subquadratâ, foveâ violaceâ, labris superne emarginatis.*

THE SANTA BARBARA COLUMBELLA. Shell somewhat fusiformly oblong, rather ventriose, 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. 298.

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 cylindrico-oblongā, apice acuminatā, castaneo-nigrā, costis albidis medio cingulatā, basi albidis, anfractibus longitudinaliter dense costatis, costis subgranosis; aperturā parvā, subdenticulatā.*

THE BAY COLUMBELLA. Shell cylindrically oblong, acuminate 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.

PHILIPPA, 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, sparsim albipunctatā, spiritaliter dense sulcato-striatā, longitudinaliter plicato-costatā, costis inferius canalicatis; aperturā ovatā, denticulatā, fovea intus violaceā, labro superius subemarginatā.*

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, nigrā, aurantio-fusco pallide tinctā, superficie omnino cancellatā, spirā conicā, dense granulata; aperturā elongatā, angustā, labro superius emarginatō.*

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-corneā, apice basique roseaceis, superficie omnino cancellatā, infra saturos granulatā; aperturā brevī, intus denticulatā, labro superius subemarginatō.*

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

COLUMBELLA.

PLATE XXII.

Species 127. (Mus. Cuming.)

The shell here figured proves to be a variety of *C. Hindoi*, Gaskoin.

Species 128. (Fig. 128 and 129, Mus. Cuming.)

COLUMBELLA PYGMEA. *Col. testâ acuminato-ovato, albidâ, nitente, navis insensu castaneis infra suturas interruptè pictâ, anfractibus superâè obliquè costatis: aperturâ parvâ, labro incrassato, superne sub-emarginato.*

THE PYGMY 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 129. (Mus. Cuming.)

COLUMBELLA VENUSTA. *Col. testâ ovata, albâ, lineis castaneis equidistantibus undique circumdatâ, anfractibus subrotundatis, infra suturas tuberculato-costatis: aperturâ parvâ, labro superâè 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 pointing of parallel circular chestnut lines.

Species 131. (Mus. Cuming.)

COLUMBELLA MESTA. *Col. testâ elongatâ, fulvo-nigri-*

caute, anfractibus declivi-convexis, obliquè costatis, interstitiis cancellatis, costis anfractis ultimâ crenatis: aperturâ parvâ, labro convexo, superâè 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, whitest towards the lower part of the last whorls only the transverse striae are present.

Species 132. (Mus. Cuming.)

COLUMBELLA SULCOSA. *Col. testâ acuminato-cylindraceâ, plumbeo-nigrâ, longitudinaliter obliquè costatâ, costis pallidis, infra suturas geniculatis, interstitiis dense cancellatis: aperturâ parvâ, labro superâè emarginato, intus denticulato.*

THE GROOVED COLUMBELLA. Shell acuminately cylindrical, leaden-black, longitudinally obliquely ribbed, ribs pale, geniculated beneath the sutures, interstices densely cancellated; aperture small, lip notched at the upper part, denticulated within.

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

Hab. Annaa 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. testâ ovatâ, largiatâ, nitente, albâ, arcuato-tenues fasciatâ et tessellatâ marginatâ: aperturâ subquadratâ, labro superâè emarginato, intus denticulato.*

THE FLARE-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. testā oratā, utrinque attenuatā, nigricante-olivaceā, maculis parvis subquadratis albis promiscuē tessellatā, spirā acutā, anfractibus spiratiter lineari-sulcatis, longitudinaliter costatis, costis prope labrum exanidis; aperturā parviscūā, labro superāe emarginatā.*

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. a'ramentaria*.

Species 135. (Mus. Cuming.)

COLUMBELLA GOULDI. *Col. testā gracili, subfusiformi, livido-fuscā, nitente, spirā acuminatā, anfractibus declivi-converxis, dense lirato-costatis, anfractu ultimo medio lævigato, ad basin spiratiter sulcato; aperturā parvā, angustā, 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 DICHOEA. *Col. testā subpyramidali, levigatā, politā, albi, rosolavo-aurantio latē longitudinaliter reticulato-striatā; aperturā parvā, latiuscūā, labro vir denticulato.*

THE TWO-COLOURED COLUMBELLA. Shell subpyramidal, smooth, polished, white, longitudinally broadly net-striped with chestnut-orange; aperture small, rather broad, lip scarcely denticulated.

SEWERY, Pro. Zool. Soc. 1841, p. 50.

Hab. Island of St. Vincent, West Indies; Guilford.

Distinguished by a marked style of colouring, consisting of broad stripes of chestnut-orange network descending conspicuously from the apex.



133.



137.



139.



140.



141 a.



141 b.



142.



143 a.



143 b.



144.

COLUMBELLA.

PLATE XXIII

Species 137. (Mus. Cuning.)

COLUMBELLA ALGAEICANS. *Col. testa oblonga, striatulae obliquae 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.*

THE BLUEISH COLUMBELLA. Shell oblong, blue-black, acuminate at the apex, surface entirely embeled, denticulated beneath the sutures; aperture rather small, denticulated within, lip conspicuously notched.

SOWERBY, *Proc. Zool. Soc.* 1841, p. 52.

Hab. — Galapagos Islands.

Very similar in form and sculpture to *Mr. Gaskell's Columbella*, from the West Indies.

Species 138. (Mus. Cuning.)

COLUMBELLA ALBINOCTOSA. *Col. testa oblongo-ovata, pallide cinerea, punctis brownis oblique quadratis in seriebus trifasciatis, sinu non emulso, anfractibus superius plicatulo obtuso, costis apice albis; apertura oblonga, labio incrassato, labris denticulatis.*

THE WHITE-NODULED COLUMBELLA. Shell oblong-ovate, pearly, encircled with three bands of obliquely square brown spots in double rows, spine acuminate, whorls plicately nodule round the upper part, nodules opaque-white; aperture oblong, lip thickened, denticulated within.

GASCOIN, *Proc. Zool. Soc.* 1854, p. 3.

Hab. — ?

Pretty banded with three pairs of rows of obliquely square chestnut dots, the plicated nodules of the whorls below the sutures being flaked with opaque-white.

Species 139. (Mus. Cuning.)

COLUMBELLA BRODERIPPI. *Col. testa ovata, laevi, nitente, alba, areolis castaneo caris reticulatis; apertura oblonga, latiuscula, labio subincrassato, superne late emarginato, labris denticulatis.*

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.

SOWERBY, *Proc. Zool. Soc.* 1841, p. 53.

Hab. Alboran Island.

A smooth shining species of simple character, tessellated and inter-flecked with delicate orange-chestnut lines.

Species 140. (Mus. Cuning.)

COLUMBELLA FENATA. *Col. testa fusi et arcuata, castaneo-ovata, anfractibus plicatis, costis laevibus, sinu emulso, anfractibus planis-concavis, plicatulo obtuso, costis apice albis; apertura ovata, labio incrassato, superne sinuata.*

THE FENATED COLUMBELLA. Shell fusiform, ovate, reddish flesh-colour, filletted with square red-brown spots, whorls flatly ovate, smooth, shining; aperture small, lip thickened, sinuated at the upper part.

ADAMS AND REEVE, *Moll. Voy. Senearg.* p. 54, pl. 11, f. 19.

Hab. — Borneo.

In the typical specimen of this species, figured in the *Mollusca of the Voyage of the Sumatra*, 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. Cuning.)

COLUMBELLA GRISA. *Col. testa pyriformis ovata, castaneo-olivacea, arcuata-fusca, testatulo-arcuata, fusca alba centrali, anfractibus planis-concavis, plicatulo costulatis, costulis in anfractu albis emulso; apertura oblonga, labio superne emarginato, labris denticulatis.*

THE GREY COLUMBELLA. Shell pyriformly 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.

BACONIAN OBSERV., C. B. Adams, *Proc. 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. Cuning.)

COLUMBELLA INCISATA. *Col. testa trigono-ovata, straguliformi, filicescenti-olivacea, punctis pallidis lentiginosis, superne nuda alba laevi castaneo-olivacea interruptis cingulata, spirali brevissima, ovata, anfractibus planis superne undulosis, costis superne angulatis et*

aperturæ subrotis; aperturæ longitudinali, angulâ, foveâ rotundâ, rotundâ, circumscissâ, basi versus granulata; labro superio in canalium uncinatum porrecto, intus antrique 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 included at the upper part, the rest angled and finely 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.

SOWERBY, *Proc. 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. longipapilis*.

Species 143. (*Col. n. n.*, Mus. Cuming.)

COLUMBELLA HINDSHI. *Col. testâ oblongo-ovata, spirâ luteâ striatâ, rufescente-rufescenti, maculis saturatis obscurè lineata, angustibus superne uncinatis; aperturâ obliquovalvâ, intus denticulatâ, supra et infra effusa.*

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, *Proc. 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 DEERLESTOIDES. *Col. testâ oblongo-pyramidali, luteâ, albâ, fulvescente-eff. foveis maculisque albicantibus irregularibus, angustibus complanatis; aperturâ parvissecatâ, labro simplici, intus rufescentibus denticulato.*

THE LEATHER-WORM COLUMBELLA. 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.

SOWERBY, *Thesaurus Conch.* vol. I. p. 131, pl. 39. f. 123.

Buccinum deerlestoides, Kiener.

Hab. West Indies.

Mottled and banded with pale fulvous-red and white, beneath a shining enamelled surface.



250a



251



250b



257



254



259



258



253a



253b



252

COLUMBELLA.

PLATE XXIV.

Species 145. (Mus. Cuming.)

COLUMBELLA ADA-PERDITIS. *Col. testâ subfusiformi-lanceolata, truncata, spirâ acuminatâ, anfractibus concentricis, lœvibus, albâ inflata; albâ, varietis rufifasciâ bifasciâ, juncâ rufâ interstitiis dense leucigomis; columellâ spirâconcentricâ, orbitâ, ad basin multiplicatâ, aperturâ ovata, labro simplici.*

THE PARTRIDGE-WING COLUMBELLA. Shell fusiformly turbinate, rather thin, spire acuminated, whorls convex, smooth, last whorl inflated; whitish, encircled with two bands of red-brown spots, interspaces between the bands densely freckled; columella rather excavated, white, one-plated 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 PICTA. *Col. testâ ovata, crassiusculâ, spirâ elata, subovata, anfractibus lœvibus, planis-lœvibus, dense subgibbosis; costiscon-spicuis, varietis albis reticulatâ striatâ; aperturâ purpureosulcâ, labro incrassatâ, latâ denticulatâ.*

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 PUMILO. *Col. testâ abbreviatâ-fusiformi, crassâ, subgibbâ, spirâ truncatâ, anfractibus superâ rufâ angulâris et costatis, undis in anfractu ultimâ truncatis, irregulâribus, albâ, varietis-fusâ pallidâ lœvi; aperturâ angustâ, labro dense varicoso, sulco obtusâ denticulatâ.*

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. cœnerea*, 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. testâ ovato-lanceolatâ, subgibbâ, spirâ acutâ, cœvus apicâ tenuissimâ, anfractibus subobovatis, cœvixis, lœvibus; areolatâ-fusâ costate lœvissimâ, punctis albis varioratâ, columellâ lœvâ, aperturâ purpureosulcâ purpureoscutâ, labro incrassatâ, orbitâ subincrassatâ, latâ denticulatâ.*

THE BLUEISH COLUMBELLA. Shell ovately turbinate, rather solid, spire sharp, finely ribbed towards the apex, whorls rather stout, convex, smooth; orange-brown, shining, bluish, marbled with white dots, columella lippled, 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. testâ subfusiformi, crassâ, ovata, spirâ acutâ, anfractibus planis-lœvibus, ultimâ dorsâ juxta suturam plicatâ-lœvibus; orbitâ, costatis peripapillis variatis et orbiculâ variegatâ, aperturâ subangustâ, labro incrassatâ, sulco deatolato.*

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 subtrigono-ovata, in-
aidâ, spirâ brevi; Introlâ, epidermide levigatâ in-
dentâ, rufo ad suturas punctatâ; aperturâ oblongâ,
labro tenuiculo.*

THE YELLOWISH COLUMBELLA. Shell somewhat trian-
gularly ovate, swollen, spire short; yellowish, cov-
ered 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. Introla* without its epider-
mis, 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,
antrique validè costatâ, spirâ subulosa; fuscocoste-
ruffâ, 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 mid-
dle, white-dotted at the base; aperture small, lip
denticulated within.

Hab. Guatemala.

This species very much resembles the short gibbose
Mitres in appearance.

Species 152. (Mus. Cuming.)

COLUMBELLA ZEUSY. *Col. testâ cylindrico-oblongâ,
medio gibbosiusculâ, solidâ, spirâ brevi, obtusâ, levigatâ;
rufo-costatâ. lineis brevibus angulato-undatis
obliquè curvè sculptâ; aperturâ perangustâ, labro in-
tus denticulato.*

THE RIVAL COLUMBELLA. Shell cylindrically oblong,
rather gibbous in the middle, solid, spire short, ob-
tuse, smooth; reddish-chestnut, obliquely variously
scratched with short angularly waved lines; aperture
very narrow, lip denticulated within.

DUCLOS, Monog. pl. 4. f. 5, 6.

Hab. —?

A very characteristic and rare species, at once recog-
nizable by its singular peculiarity of marking.

Columbella Pl. III.



COLUMBELLA.

PLATE XXV.

Species 153. (Mus. Cuming.)

COLUMBELLA CUMINGI. *Col. testâ acuminato-oblongâ, lœvifidâ, spirâ conicâ, infractibus conicis, albâ ad basin sublimis, aurâ, latereculis, aurantio punctulatis, auratis aëris arcuato-convolutis infra suturas imbricatis, nigro-fulvâ infra latus denticulata.*

THE BIRDWIND COLUMBELLA. Shell acuminately 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 SERGAEVA. *Col. testâ ovata, brevifidâ, spirâ medio-lâ, infractibus conicis; purpureo-ovato-conicâ, strigis angustis s. angustis-constans longitudinaliter per ovam pectâ; operculari parviusculâ, latro scapiliâ.*

THE STREAMER COLUMBELLA. Shell ovate, smooth, spire indillegible, whorls convex; purple-s-h, 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-squared character.

Species 155. (Mus. Cuming.)

COLUMBELLA ELATA. *Col. testâ elongatâ, subfusiformi, spirâ, spirâ productâ, infractibus subangustis, longitudinaliter pleuicostatis; albâ, castanea variâ undulato-fulvâ; operculâ parvâ, columellâ tenui latâ.*

THE STAVELY COLUMBELLA. Shell elongated, somewhat fusiform, solid, spire produced, whorls rather narrow, longitudinally pleuicately ribbed; white, variously wave-lined with chestnut; aperture small, columella thickly flippid.

Hab. ———?

A narrow solid Miteo-like shell, conspicuously painted

with longitudinally waved chestnut lines upon a white ground.

Species 156. (Fig. c, d, Mus. Cuming.)

COLUMBELLA CUMINGII. *Col. testâ elongatâ, subcylindricâ, ad basin recurvâ, spirâ radiâ productâ, propæjicâ minute costatâ, ante apex angustis, plano-conicis, spiculis subcostalibus purpureo-aurantio-ribnecis, liphocintia subpunctatâ; operculâ parvâ lœvi, superiâ emarginatâ, latro subobovato, intâ denticulâ.*

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, noticed at the upper part, lip rather thickened, denticulated.

Hab. Island of Cebu, Philippines; Cuming.

A very interesting violet-coloured species, with the spiraciously produced.

Species 157. (Mus. Cuming.)

COLUMBELLA VACUUS. *Col. testâ fusiformi, solidâ, ad basin contractâ et recurvâ, spirâ acuminatâ, suturis subcandulosis, infractibus plano-declivibus; albâ, aurantio vittatâ et annulatâ; operculâ parvâ, columellâ labiatâ.*

THE CLUB COLUMBELLA. Shell fusiform, solid, contracted and recurved at the base, spire acuminated, 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, infractibus conicis, brevibus; albâ, aurantio nitidâ, reculatâ-convolutâ et strigatâ; aper-*

turā parvisculā superiē submarginatā, columellā excavatā, labro intus denticulatō.

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-turratā, spirā versus apicem plicato-costatā, anfractibus plano-convexis; fulvescente-castaneā, fasciā albā cingulatā, aperturā parvā, labro intus denticulatō.*

THE UNPOLISHED COLUMBELLA. Shell elongately turreted, spire plicately ribbed towards the apex, whorls flaily convex; fulvous-chestnut, encircled with a white band; aperture small, lip denticulated within.

SOWERBY, *Thesaurus Conch.* vol. i. p. 132 pl. 32 f. 127.

Hab. ——— ?

Only a worn specimen of this is known, but it is sufficiently indicative of a distinct species



111



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114



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COLUMBELLA.

PLATE XXVI.

Species 160. (Mus. Cuming.)

COLUMBELLA FLAVO-VIR. *Col. testâ sphultracra-ovata, in fatis, sæpè virida, maculis reticulatâ, apice-albis pro-niscenti; foveolâ spirâ suboblusâ, anfractibus concavis; labris; aperturâ parvis; labro columellâ excavatâ, labro simpli.*

THE FLAKED COLUMBELLA. Shell cylindrical ovate inflated, semitransparent, 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. testâ subfusiformi-ovata subinflata, æquique spirâ spirâ lucari-sulcatâ, subreptosis, lobis albidis, costis præpariter tessellâ, anfractibus superâ obtusè tumidis; aperturâ subangustâ, labro intus denticulato.*

THE PRICKED COLUMBELLA. Shell somewhat fusiformly ovate, rather solid, spirally linearly grooved throughout, grooves prickled, 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 SVÆNA. *Col. testâ fusiformi-ovata, levigatâ, versus basim sulcatâ, alidâ, foveis nigris conspicuè reticulatâ, spirâ suboblusâ, anfractibus plano-concavis; aperturâ subangustâ, 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. parviflora*, 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. testâ arcuato-ovata, longitudinaliter obscure albicantâ, lineis nigris bilobulatis variegatâ, spirâ oblongatâ, anfractibus convexis; aperturâ parvis; labro columellâ contracto sulcatâ, labro simpli.*

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. testâ ovata, levigatâ, livido-fusâ, anfractibus superâ tumido-productis, ad basin sulcatâ; aperturâ quadrato-ovata, labro sic 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. testâ fusiformi-oblongâ, longitudinaliter levigato-sulcatâ, alidâ, lineis rufo-fuscis subtilissime reticulatâ, costis subreticulatis; aperturâ subangustâ, labro sic denticulato.*

THE CALIFORNIAN COLUMBELLA. Shell fusiformly oblong, longitudinally finely ribbed, white finely reticulated with red-brown lines, ribs dark; aperture rather narrow, lip scarcely denticulated.

Hol. California.

Somewhat allied to *C. Topackere*, but of a quite distinct style of painting

Species 166. (Fig. *a, b*, Mus. Taylor.)

COLUMBELLA NIVOSA. *Col. testis ovata, acuta tumida, fulrescente, punctis castaneis bifasciatis, interstitiis punctis spaco-atis lentiginosis, spirâ breviusculâ, anfractibus convexis, superâe obtusè truncatis; aperturâ quadrato-oblongâ, lobis intus denticulatis.*

THE SNOWY COLUMBELLA. Shell ovate, tumid in the

middle, yellowish, encircled with two bands of chestnut dots, the inter-stices freckled with opaque-white dots, spire rather short, whorls convex, obtusely swollen round the upper part; aperture squarely oblong, lip denticulated within.

Hol. Guatemala.

A beautifully painted species, allied to *C. carolinæ*, freckled with chestnut network and snow-white dots

Fig. 167. (Mus. Cuming.)

A very characteristic orange-red variety of *C. jabala* described at Plate XV, Sp. 77.



Species 174. (Fig. a, b, Mus. Cuning.)

COLUMBELLA ESSINGTONENSIS. *Col. testâ monochromâ, arcuâ, lateri, pedatâ, livido-purpureâ vel albâ, rufotarsulatâ, spirâ acutâ, angulo-tibus subangustis, altiano subquadrato, apertura parvâ, superiôrâ sinuatâ, labro incrassato, varicoso.*

174 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. Cuning.)

COLUMBELLA PENETRATA. *Col. testâ arcuâ, transversâ et longitudinalibus multo, fere æqualibus, pallidâ rufo-fusciatâ, spirâ subtruncatâ, angulo-tibus rotundatis, costis subtuberculatis, apertura parvâ sinuatâ, labro incrassato, alis denticulatis.*

175 LATTICED COLUMBELLA. Shell ovate, smooth throughout with longitudinal and transverse ribs, whitish, faintly red-banded, spire somewhat truncated, whorls rounded, with the ribs slightly tubercled; aperture rather small, lip thickened, denticled within.

Hab. ———.

A faintly red-banded shell, roughly latticed throughout.



COLUMBELLA.

PLATE XXVIII.

Species 176. (Mus. Cuming.)

COLUMBELLA BERIDA. *Col. testâ oblongo-orata, pellucida in extreâ, punctis opacis-albis medio-fasciatis. In Suet. lancaensis, superâ leviter emarginata, ap. rivâ subopacâ, infra bipunctâ, superâ sinuata.*

THE IRVY COLUMBELLA. Shell oblong, ovate, transparent-white, glossy, 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 *Arcaha waë pœliferâ*, in coral sand, at a depth of six fathoms); Cuming.

A transparent, glossy shell, encircled round the middle with a necklace of opaque-white dots, like little pearls or dewdrops.

Species 177. (Fig. 161. Mus. Taylor.)

COLUMBELLA CRASSIPARIS. *Col. testâ ovata, nudique-convâ cancellatâ, obscure, in extreâ punctis opacis-albis bipunctâ sinuata, ad basim purpureo-auriculatâ, superâ leviter emarginatâ, aperturâ parvâ, labro crassiusculo, verrucoso.*

THE THICK-LIP COLUMBELLA. Shell ovate, finely cancellated through-out, yellowish, encircled with two bands of red-brown arrow-headed marks, purple-spotted at the base, spine rather short, sharp; aperture small, lip very thick, verrucose.

Hab. —?

A small, stout shell, with an unusually thickened varicose lip encircled with bands of brown arrow-head-shaped marks, with generally a conspicuous purple blotch about the base.

Species 178. (Mus. Cuming.)

COLUMBELLA FLUVIDA. *Col. testâ suboblongatâ, pellucida in extreâ, levissimâ, strigis maculis punctis aurantiis-fasciatis longitudinaliter punctâ, exteriâ subangustâ, labro interdentatâ.*

THE GLEETERING COLUMBELLA. Shell rather elongated, transparent-white, glittering, painted 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. diamanta*, C. B. Adams described at Pl. XX. Sp. 443.

Species 180. (Mus. Taylor.)

COLUMBELLA SAGITTA. *Col. testâ aciculari, pellucida in extreâ, superâ subopacâ, maculis sagittâ feris longitudinalibus, deinde punctis opacis-albis triangulatâ, infra-fasciâ punctatâ, ultra contractâ; aperturâ parvâ, superâ sinuata, labro latius dentatâ.*

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, aurâ subglobosâ, extreâ leviter costata, maculis sublongitudinalibus longitudinaliter punctâ, ad basim purpureo-auriculatâ; aperturâ parvâ, labro latius vix denticulatâ.*

THE LUNAR-MARKED COLUMBELLA. Shell ovate, somewhat globose in the middle, white, painted longitudinally with rather distant, wavy, chestnut lines, purple-tinged at the base; aperture small, lip scarcely denticulate within.

NOÏS, Inverteb. Voy. Journ. Acad. Nat. Sci. vol. v. p. 213. Bancroftiana lunata, 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 strip of rather distant wavy chestnut lines upon a white ground.

Species 182. (Mus. Taylor.)

COLUMBELLA VELATA. *Col. testâ ovata, levâ, obscure, costarum densissimâ reticulatâ, infra-fasciâ subpunctatâ, aperturâ parvâ, labro latius denticulatâ, superâ subsinuata.*

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.



Species 183. (Mus. Cuming.)

COLUMBELLA PINKETIA. *Col. testâ ovata, crassa, lavi-
culata, subopacis, trochilice planulatis, utrimq; gibbato-
sulcatis, subopacis, aperiturâ parvâ, labro sub-
virescente, albis, columella submarginata.*

THE PINK COLUMBELLA. Shell ovate, thick, smooth,
with lips which are flattened, the last rather gibbous,
contracted at the base, aperture small, lip subvirescent,
the two lips of yellow, slightly notched at the upper part.

Hab. — ?
Of smooth solid growth, coloured throughout with
chocolate, which is deeper towards the apex.

Species 184. (Fig. 2, 3, Mus. Taylor.)

COLUMBELLA LINCOLNENSIS. *Col. testâ acuminatâ,
sulcatis, albis, denticulâ, columella contractâ strigatâ, vel
pungentibus, aperiturâ parvâ, anfractibus planulatis,
superâ denticulâ, subopacis, tuberculis, superâ emarginatâ,
interâ denticulâ.*

THE LINCOLN COLUMBELLA. Shell acuminately solid,
smooth livid-white, streaked with chestnut network,
the tubercles 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. conoides*.

Species 185. (Mus. Cuming.)

COLUMBELLA ARAIA. *Col. testâ fuscatâ, acuminatâ,
sulcatis, albis, denticulâ, denticulâ contractâ strigatâ, vel
pungentibus, aperiturâ parvâ, anfractibus planulatis,
superâ denticulâ, subopacis, tuberculis, superâ emarginatâ,
interâ denticulâ.*

THE PITCHER COLUMBELLA. Shell fusiformly acumi-
nated, spirally grooved throughout, yellowish, varie-
gated with red-brown spots, whorls numerous, con-
vex, 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 *Col. arata*.

Species 186. (Fig. 4, 5, Mus. Cuming.)

COLUMBELLA TUMIDA. *Col. testâ cylindrico-acumi-
natâ, variegatâ, albis, subopacis, trochilice pallide reti-
culatâ, anfractibus planulatis, prope apicem longitudo-*

*nally sulcatis; aperiturâ parvâ, columella excavatâ
labro simplici.*

THE GREY 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 *T. celsa*-like form, marked with a faint
network of pink-brown.

Species 187. (Mus. Cuming.)

COLUMBELLA SAGHARATA. *Col. testâ acuminatâ, pro-
virescente, albis, aperiturâ parvâ, anfractibus contractis,
tuberculis, albis, interâ contractis; aperiturâ
parvâ, columella labropungentibus.*

THE CANDIED COLUMBELLA. Shell acuminated, trans-
parent-pink, opaque-white at the base, whorls con-
vex, smooth, the last contracted at the lower part,
and grooved; aperture ovate, lip and columella den-
ticated.

Hab. Van Diemen's Land.

Although a shell of comparatively stout growth, all
the specimens I have seen are of the same uniform trans-
parent-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 examin-
ing the original types of that species, now in the collec-
tion 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 ovata, tirido-
fuscatâ, vel purpurascente, spirâ loricatâ, anfractibus
superâ tuberculato-costatis, tuberculis nigris; aper-
turâ subquadrato-ovata, labro subvirescente, superâ
submarginata, interâ denticulata.*

THE BRUISED COLUMBELLA. Shell ovate, livid-brown
or purple, spire turreted, whorls tubercularly ribbed
round the upper part, tubercles nigris; aperture some-
what 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.





vezo, suturis excavatis: aperturâ 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, costarum-fusco subtilissimâ reticulatâ, anfractibus subcentricis, superâ longitudinaliter costellatâ; aperturâ parvâ, intus 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.



Stegis longitudinibus variegatis-fuscis oblita, infractibus superioribus concavo-impressis; aperturâ parvâ, columellâ excavatâ, labro simplici.

THE SMEARED COLUMBELLA. Shell acuminate oblong, minutely spirally deviously striated throughout, transparent-white, smeared with longitudinal orange-brown streaks, whorls concavely 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 CAVLA. *Col. testâ ovata, medio obscâ, rotundè obliquè tuberculato-costatâ, costarum costis purpureis; aperturâ oblongâ, labro superiorè emarginato, ostio denticulatâ.*

THE BIRD-EGG 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 TENERICA. *Col. testâ acuminato-ovata lavi, intensè fulco-castaneâ, obscure longitudinally striatâ, infractibus subtilissimè; aperturâ parvâ, foveâ nigro-costâ-castaneâ, labro simplici.*

THE DARK COLUMBELLA. Shell acuminate ovate, smooth, dark fulvous-chestnut, obscurely longitudinally streaked, whorls rather flattened; aperture small interior blackish-chestnut, lip simple.

Hab. ———?

Allied to *C. pullo* 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.



260. a



263



264. b



262. a



263. a



264. b



262. b



260. b



260. a



262. c

COLUMBELLA.

PLATE XXXII

Species 205. (Mus. Taylor.)

COLUMBELLA BIDENTATA. *Col. testâ oratâ, subglobatâ, pallidobluvescente, punctis rufis et opaco-albis angustibus apicis, elongatâ, albentâ, spirâ brevi, aperturâ superâ subcylindrica, d.ânte rotundatâ, apicâ angustatâ; aperturâ oblongâ, utroque denticulatâ, externâ intus bidentatâ, labro superâ subcarnoso-guttatâ.*

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, external double-toothed within, lip slightly notched at the upper part.

MEXICO, Sowerby, *Trans. Conch.* vol. 1, 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 rotundatâ, nudâ, ne spiculator levissimatâ, purpureo-nigrâ et castaneâ, punctis opaco-albis in maculis trianguloribus et in strigis punctatis ornatâ, spirâ parvâ, unicolorâ, aperturâ breviter elongatâ, angustâ, fance obovato-cuneatâ, labro intus superâ subsericeatâ, obsolete denticulatâ.*

THE PILED 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 obseely rounded at the upper part, attenuated towards the base; aperture elongated, narrow, interior bluish, lip slightly ascending at the upper part, absolutely denticulated within.

Columella picata, Swainson, *Treatise on Malacology*, p. 151, f. 17 a.

Columbella orata, Sowerby.

Columbella curia, Sowerby.

Hab. Australia.

The two shells represented at Fig. 206 and 209, intended to illustrate Mr. Sowerby's *C. orata* and *curia*, prove to be one and the same species, and the type of Mr. Swainson's genus *Columella*. 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 *Mela*.

Species 207. (Fig. a, b, c, Mus. Cuming.)

COLUMBELLA PHILIPPINARUM. *Col. testâ conoidâ, crassâ, albidâ, purpureo-fusca strigatâ et fuscantâ, spirâ brevi, acutâ, angustibus superâ gibbosâ-angulatis, d.ânte subconvexis, aperturâ ellipticâ ad basin convexâ et spirâliter sulcatâ; aperturâ elongatâ, angustâ, labro subincrassatâ, superâ subsericeatâ, 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, absolutely denticulated within.

RIU-DEU, *Proc. Zool. Soc.* 1842, p. 199.

Columella Philippinarum, Adams.

Hab. Philippine Islands; Cuming.

This species would also belong to Mr. Swainson's genus *Columella*, by reason of the ascending tendency of the outer lip, as distinguished from the decided conical species which constitute my genus *Mela*.

Species 208. (Fig. c, b, Mus. Cuming.)

COLUMBELLA DISCOES. *Col. testâ cylindrico-conoidâ, irregularitâ, cicidâ castaneâ, inferâ albidâ-punctatâ, superâ albivirenatâ, maculis grandibus, distantibus, spirâ obtusè globosâ, apicâ elevato, unicolorâ; aperturâ elongatâ, fance ellipticâ, labro subincrassatâ, superâ assericeatâ, intus obsolete denticulatâ.*

THE DIFFERING COLUMBELLA. Shell cylindrically conoid, smooth, bright-chestnut, white-dotted below, white-blotched above, blotches large and distant, spire obtusely globosic, apex elevated, pointed; aperture elongated, violet in the interior, lip somewhat thickened, ascending at the upper part, absolutely denticulated within.

Falata discors, Gmelin (fide Deshayes), *Syst. Nat.* p. 1555.

Buccinum punctatiss., Brugniere.

Columella semipunctata, Lamark.

Hab. Philippine Islands; Cuming.

This fine and long-known species belongs also to the *Columella* division of *Columbella*, as well as its very near ally *C. spiculatula*, and a few other species.



*reticulata, contractibus longitudinaliter costatis, striis transversis decussatis; aperturâ ovata, sinuosa, labri-
antis leviter denticulata*

GUILDING'S COLUMBELLA. Shell pyramidally oblong, pale, variegated with brown, spire acuminated, 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. *Co. testâ subtrigono-ovata, spirallyter tenuisulcata, laevigatâ, fulvo-castanea vel rosacea, spirâ brevi, contractibus superne obesis; aperturâ angustâ, labri-antis denticulata, interstitiis prepapillis.*

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. rosacea*.



COLUMBELLA.

PLATE XXXIV.

Species 216. (Mus. Taylor.)

COLUMBELLA URMOSA. *Col. testâ ovata, basi, albeata, pallide rosea, foveâ v. ciliatâ pallide aeneo-fulva, columella, nuchatibus plumbeo-roseis, aperturâ parviscissâ, lobis a 1^o recurvatis, labro simpli.*

THE LILY-TIPPED COLUMBELLA. Shell ovate, smooth, shining, pale pink, circled round the middle with a faint band of orange network, whorls flatly convex; aperture rather small, columella excavated, lip simple.

GASKOIN, *Proc. 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 ovata, basi, laeviciliâ, pellucido-oblucâ, medio aurantio reticulato, flavo-oblucâ, ret. laevâ, apice roseâ, nuchatibus aeneis, primis parvis, impatibilibus costatis; aperturâ parvâ, lobis sequâ v. emarginatè emarginatis.*

THE MARQUESSAS COLUMBELLA. Shell ovate, smooth, rather thin, transparent-white, reticulately flamed or leucated 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, *Proc. 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 LUDOSTOMA. *Col. testâ fusiformi, convexâ, medio obscâ, impatibilibus plicato-costatis, albidâ, utriusque ciliatâ, aurantio-fusca variè fasciatâ, auriflora v. aeneis, setosis impressis, ultimo basi in cantho brevè recurvâ; aperturâ brevi, utriusque denticulatâ, lobis variosis.*

THE VIOLET-MOUTH COLUMBELLA. Shell fusiform, thick, stout in the middle, longitudinally plicately ribbed whitish, violet at each end, variously banded with orange-brown, whorls convex, with the sutures unpressed, last whorl recurved at the base into a short band; aperture small, denticulated on each side, lip varicose.

GASKOIN, *Proc. Zool. Soc.* 1851, p. 13.

Hab. Port Essington.

Closely allied to *C. pallida*, which is smoother and more variably marked.

Species 219. (Fig. a, b, Mus. Taylor.)

COLUMBELLA HERUNDO. *Col. testâ fusiformi-obovata, subulâ, basi, albeata, albidâ, locis aurantio-fusca denticulâ leucigressâ, spirâ alt. aurantio-aurantâ, nuchatibus subplumbeis, ultimo gibbosa, ad basim cantho-oblucâ et costatâ; aperturâ angustâ, superâ v. emarginatâ et utriusque moidentatâ, columellâ recurvâ, lobis subvaricosis.*

THE SWALLOW COLUMBELLA. Shell fusiformly club-shaped, solid, smooth, shining, whitish, flecked 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, *Proc. 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-ovata, basi, superâ dense aurantio-reticulatâ, inferâ albidâ, apice pellucido-oblucâ, nuchatibus aeneis, ultimo ad basim circulatâ et sulcatâ; aperturâ parvâ, columellâ recurvâ, lobis vix incurvatis, latè denticulatis.*

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 224. (Mr. Taylor.)

COLUMBELLA POLITA. *Col. testâ oratâ, solidiusculâ, tere, nitentâ, aurantiâ-costatâ, albo-livâ, illic sparsâ au-*

culatâ et foliata, intricatâ, subtile-angulâ, apertura parvâ, columellâ excavatâ, limbo oratâ denticulatâ.

THE POLISHED COLUMBELLA. Shell ovate, rather solid, smooth, shining, orange-ochreous, here and there sparsely 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



227a



223b



225a



225a



225b



225b



226a



226b



227

COLUMBELLA.

PLATE XXXV.

Species 222. (Mus. Taylor.)

COLUMBELLA EXIMIA. *Col. testâ acuminatâ, subelevatâ, laevi, albentis, per basin aurantiâ, fusco travi reticulatâ, marginibus apicibus infuscatâ, cingulata, angustibus planis, ultimo truncato et subulato, subaequali; apertura laevi, labro convexo, superâ submarginata.*

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 ALPUGINOSA. *Col. testâ oratâ, laevi, albente, perivoidaeolith, areolato-fusco anilique nitidi reticulatâ, reticulâ hijuscitâ subaerata, angustibus plano-convexis, ultimo subelevato et subulato; apertura parvi, labro simpliciter, superâ submarginata.*

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 FINIS. *Col. testâ acuminato-acutâ, laevi, albenti, areolato-fusco areolariter flammulâ, angustibus convexis, ultimo truncato, leviter inflato, subulato angulato, et basin subulato; apertura subaequali, labro simplici, superâ sinuata.*

THE THIN COLUMBELLA. Shell acuminate-ovate, smooth,

whitish, irregularly flamed with orange-brown, whorls convex, the last whorl ventricose and thinly inflated, obsolete angled, grooved at the base, aperture a little expanded, lip simple, sinuated at the upper part.

GASKOIN, Proc. 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 oratâ, duro subgibbosâ, solutâ, laevigatâ, nitente, pellucidâ-albâ, areolato-areolato-areolatâ et leviter reticulatâ, spirâ subulata, angustibus plano-convexis, ultimo ad basin subulato; apertura quadrato-oratâ, columnâ subaequali, labro parvi incrassato, superâ marginato, 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, columnella 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 Louie 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 BIFLAMMULA. *Col. testâ cylindrico-oratâ, laevigatâ, nitente, albâ, areolato-fusco anilique densâ flammulâ, spirâ subulata, angustibus convexis; apertura parvi, columnâ subaequali, labro truncato, superâ submarginato, 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. *Co. testā cylindrica convexā, levigatā, nitente, pellucidobiancheā, labro tinctō, munitis parvis albidis fuscatisa cingulatā, spirā brevissimā, apice*

acuminatā, aperturā contractā, ultimo obliquè expansā; aperturā ovatā, labro simpliciter submarginatō.

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.



229 a



228



229 b



231 a



230 a



230 b



232 a



231 b



232 b



233

COLUMBELLA.

PLATE XXXVI.

Spec. 225. (Mus. Taylor.)

COLUMBELLA TETRALEPIA. *Col. testâ ovali, oblique attenuata, nigrescente, alba, maculis castaneo-fuscis crescentibus, laevigata, alba, spirâ subapicali, infra-rotâ supra apicem angulata, aliam crescentem præfandi, laevem, striatâ, spirâ supra subapicali, labra superiorâ subapicali, intus denticulata.*

THE INTERSEPTED COLUMBELLA. Shell ovate, attenuated at both ends, rather - did, white, encircled with a band of crescent-shaped chestnut-brown spots, spine somewhat truncated, 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 225. (Fig. a, b, Mus. Taylor.)

COLUMBELLA CALANIAS. *Col. testâ fusca, striatâ, subdilatata, laevigata, alba, spirâ subdilatâ, infra-rotâ supra apicem angulata, aliam crescentem præfandi, laevem, striatâ, spirâ supra subapicali, labra superiorâ subapicali, intus denticulata, labra varicosa.*

THE MILKY-WAY COLUMBELLA. Shell fusiformly ovate, rather solid, smooth, shining, spine 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. Elliptical with a broken, linear, red band, and sprinkled with opaque-white pearly spots.

Species 230. (Mus. Taylor.)

COLUMBELLA CITHARA. *Col. testâ subquadrato-ovata, subulata, albida, castaneo-crenulatâ, præpe salutaris nigrescente et albino-ovata, spirâ brevissima, contractilibus superioribus denticulatis, infra apicem rotâ supra apicem angulata, labra superiorâ angulato-producta et emarginata, intus laevâ denticulata.*

THE BARD COLUMBELLA. Shell somewhat sigmoidly ovate, rather solid, whitish, reticulated with chestnut, blackish, and white-blotched next the sutures, spine rather short, whorls pliantly 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 bard-shaped shell, approaching to *C. fluctuata*, but differing obviously enough in all particulars.

Species 231. (Fig. 231 a, Mus. Taylor.)

COLUMBELLA CREPUSCULUM. *Col. testâ subulata, subdilatata, laevigata, albida, castanea subtiliter reticulatâ, præpe salutaris nigrescente et albino-ovata, spirâ brevissima, contractilibus planis, striatâ, alutibus, aliam parvâ, ut latius subulata et crenata; aperturâ parvâ, labra varicosa, intus subtiliter denticulata.*

THE TWILIGHT COLUMBELLA. Shell subulate, rather solid, smooth, whitish, finely reticulated with chestnut, blackish, and white-spotted next the sutures, spine 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. 234 b, Mus. Taylor.)

COLUMBELLA FUSILLUS. *Col. testâ subulata, subdilatata, subcrenata, albida, maculis fuscis lineâ subulata, præpe salutaris maculata; aperturâ parvâ, labra varicosa, infra-rotâ supra apicem angulata.*

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 ALABASTEREUM. *Col. testâ fusiformi, subpyramidalî, marcescenteâ, prope suturas operâ, aniculis æstivæis distinctibus sparsim notatâ, subæolibus punctatis, ultimo ad basin contracto, evolutis et soluto: portâ parvâ, 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. testâ subulatâ, undique spiritaliter sulcatâ, æstivæis tubis convexis: aperturâ parvâ, labro superâ submarginato.*

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*.



COLUMBELLA.

PLATE XXXVII.

Species 234. (Mus. Taylor.)

COLUMBELLA NEROLATA. *Col. testâ oblongo-ovata, luteo-ovata, luteo-ovata, arcuatis-fusco-rufis marginata, aperturâ angustâ, suturebus emarginatis, apertura parva, labro supero emarginato, intus prominente denticulato.*

THE CLAYED 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, pellucidior-ovata, luteis punctis angularibus transversim notata, spirâ brevi, angustâ longitudinaliter plicato-costulata; apertura parva, oblongo-sinuosa, labro incrassato, suturebus emarginatis, intus denticulata.*

THE SCRATCHED COLUMBELLA. Shell ovate, transparent golden-yellow, marked transversely with angular pale lines, spine 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 BOEMTOR. *Col. testâ cylindrico-conoidâ, multiglo spirâliter striatâ et sulcatâ, rubro-â, spirâ brevi, sinuata; apertura oblongâ, angustâ, labro subincrassato, suturebus submarginatis intus denticulato.*

THE SLEEPER COLUMBELLA. Shell cylindrically conoid, spirally ridged and grooved throughout, violet, spine short, rather obtuse; aperture oblong, narrow, lip rather thickened, faintly notched at the upper part, denticulated within.

SOYERBY, Thesaurus Conch. vol. i. p. 143. pl. 40. f. 173.

Hab. Island of St. Vincent, West Indies; Guiling.

This little species, of a distinctly typical conoid form, may be regarded as a characteristic example of Mr. Swainson's genus *Cumella*.

Species 237. (Fig. a, b. Mus. Taylor.)

COLUMBELLA OCELLATA. *Col. testâ subulata, multiglo longitudinaliter plicato-costulata, albâ, arcuatis-fusco-rufis striatâ et ocellatâ, spirâ turrita, angustâ, suturebus plicato-emarginatis, angustâ, alba ad basin sulcata et recurva; apertura parva, labro rotundè emarginato, intus denticulato.*

THE EYED COLUMBELLA. Shell subulate, longitudinally plicately ribbed throughout, whitish, stained and ocellated with orange-brown, spine turrited, 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 subulata, longitudinaliter subobovata-costulata, albâ, arcuatis-fusco-rufis striatâ, spirâ turrita, angustâ, suturebus angustâ; apertura parva, labro rotundè emarginato, suturebus emarginatis, intus denticulato.*

THE DEEP SEA COLUMBELLA. Shell subulate, longitudinally somewhat tubercularly ribbed, white, marbled with orange-brown, spine turrited, 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 CROAVA. *Col. testâ ovata, variegatâ, luteis*

COLUMBELLA.—PLATE XXXVII.

Col. castaneo-fusca lentiginosa, spirā obtusā, anfractibus convexis; aperturā parvā, labro simplici, superne submarginata

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 wavy marks of chestnut-brown.

Species 240. (Mus. Taylor.)

COLUMBELLA LENTIGINOSA. *Col. testā ovatā, undique*

longitudinaliter costatā, olivaceo-nigrā, punctis albis bifasciatis lentiginosa, anfractibus convexis, ultimo ad basin sulcato; aperturā oblongā, labro superne concavato, 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

C O L U M B E L L A.

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|--|---------|-------|--|---------|-------|
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ERRATA.

Sp. 128. *Dolichopygus* (*Leucota*) *Philippi*

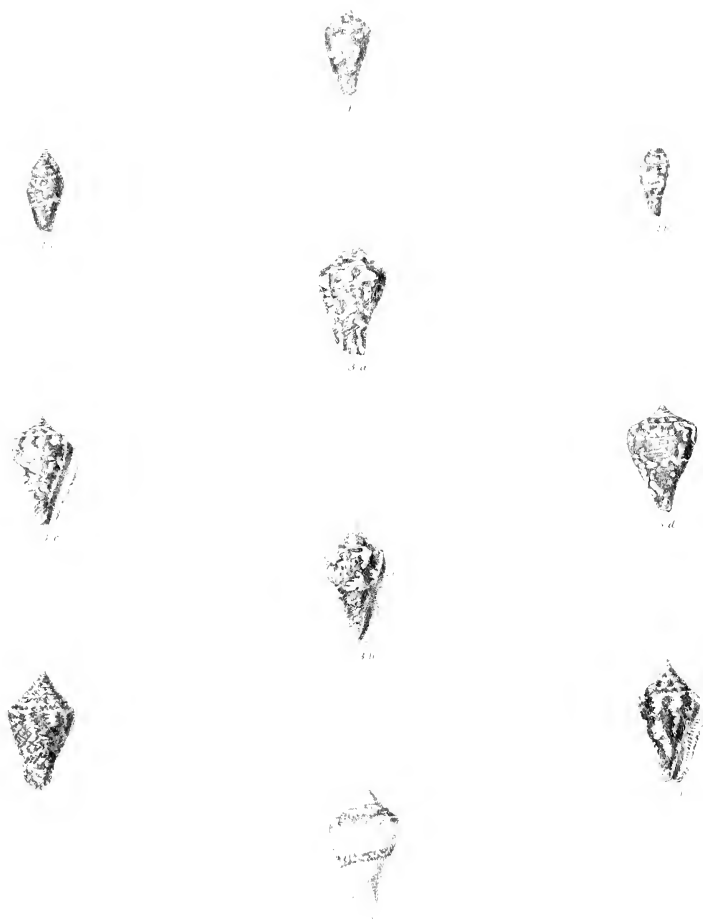
MONOGRAPH

OF THE GENUS

M E T A.

Shrou'd in the moist, majestic Nature's arms,
Extends her earth and sea her limbed hands
Tower upon tower her beamy forehead crests,
And in the unnumber'd rank her hundred breasts.

Lucas



META.

PLATE I.

Genus META, *nov.*

Meta *conspicua*, *verruca* *basae* *regulariter* *attenuata*, *spica* *longiuscula*, *peristoma* *superficialiter* *canaliculata*. *Apertura* *oblonga*, *angusta*, *fovea* *prope* *marginem* *radialium* *interdita*, *iris* *brevibus*.

Shell conoid, regularly attenuated towards the base, spire rather short, generally superficially channelled. Aperture elongated, narrow, inferior 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 *Stromboides* and *Conella*; but they constitute a group of better definition, and consequently higher rank in the system, than either. *Stromboides*, on the one side, represented by the Linnæian *Stromba verruca* 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. ocellata*, with the lip ascending upon the penultimate whorl, which might with equal propriety be placed among the *Conella*. 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 subanguste conoidi, spirâ cylindrica, apice obtuse elatâ, vel utriusque superius spiræ: lobis serratis, deinde levibus, eto. foveâ saliculis et lineis, acanthisque, alba varice nebulatâ, apice rosaceo, apertura cuneatâ, fovea radialium interdita.*

THE LARGE-MOUTH META. Shell rather narrowly conoid,

spire cylindrical, obtusely raised at the apex, whorls spirally linearly grown at the upper part then smooth, soon more strongly grooved and ridged orange-brown, variously clouded with white, apex 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 *Conus*, very much resembles Mr. Broderip's *Conus coniformis*; 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 OVALOIDES. *Met. testâ cylindraceo-oblongâ, spirâ obtuse elatâ, anfractibus superâ spiræ: striatis, deinde levibus, ad basin punctulatis, fulvoostris, albâ punctatâ et variegatâ, apice alba: apertura angustâ, fovea radialium interdita, lobis subnullis, superius abundant.*

THE OVALOID 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 indented, 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 *ocellata*, 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. Dupontii* is the type.

Species 3. (Fig. 3 a, b, Mus. Cuning.)

META ELDO-NELLE. *Met. testâ conoidi, verruca basae contracto-attenuatâ, spirâ subulatâ, acutâ, anfractibus superius angustis, ad basin punctulatis; fulvoostris albis conspicuis elegantè maculatâ et reticulatâ; apertura subangustâ, fovea radialium interdita.*

THE MACHINES 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 with white; aperture rather narrow, interior radially ridged.

Hab. —?

An elegantly formed and very characteristic species, painted not much unlike the *Cousus colomanlii*.

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

META CONIFORMIS. *Met. testâ conoidâ, spirâ subamplâ, rotatâ, superficialiter canaliculatâ, anfractibus superne subacutè angulatis, deinde laevibus, ad basin fortiter liratis; albâ, purpureo-castanea nudigine irregularitè reticulatâ; aperturâ subangustâ, fauce violascente, parum liratâ.*

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. corvifuruis*).

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. testâ orato-conicâ, solidiusculâ, spirâ superficialiter canaliculatâ, anfractibus superne obtusè*

angulatis, ad basin liratis; roseo-aurantiâ, fasciâ flexuante, albo maculorâtâ, superâ et medio circumdatâ, apice roseo; aperturâ subangustâ, fauce parum liratâ.

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. 86.

Hab. —?

Distinguished by a delicate yellowish-roseate hue and central marbled band.

Species 6. (Fig. c, d, Mus. Cuming.)

META DUPONTI. *Met. testâ abbreviato-conicâ, superâ lauidiusculâ, spirâ brevi, anfractibus superne obtusè angulatis, laevibus, ad basin pauciliratis; aurantiâ, olivaceo tinctâ, maculis albis subamplis fasciatim reticulatâ, apice roseo; aperturâ oblongâ, fauce parum liratâ.*

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.

Cousus Dupontii, Kiener, Icon. Coquilles vivantes

Hab. Ichabé, South Africa.

The painting of this species is very similar in character to that of *M. colomanlii*, 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.*”



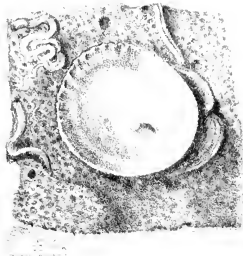
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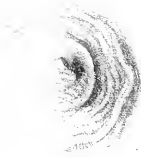
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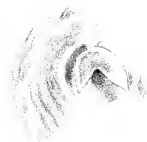
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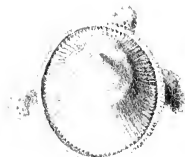
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CALYPTRÆA.

PLATE I.

Genus CALYPTRÆA, Lamarek.

Testa globoso-conica, tenuis, irregularis, e calice plerumque rostrata. pallido-alba, radiata dense minutissimè striata, apertice internè obliquâ, semi-infundibuliformi; interstria rotunda basalea forata.

Shell globosely 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 *Cucullia*. "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 *Calyptrea* 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 *Crepidula* 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 Lamarckian form, and for the cup-appendaged, and the trochoid, *Calyptrea* to adopt the genera respectively instituted for them by Schumacher, *Crepidularia* 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 *Calyptrea* proper, represented by the Linnæan *Patella 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 *Calyptrea* "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 abated."

The *C. lectus-Siæne* 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 suborbiculatâ, solidiâ, rudè convexâ, vertice minute rostratâ, albâ, prope marginem fulvescente, radiatâ tenuilinatâ, liris acutis, compressis, analatis, suboblongatis, intersticiis radiatâ minute striatis; aperturæ internæ subampliæ; orââ basali amplâ, convexâ, patelloformi, margine irregulariter obscure crenatâ.*

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-sh. ped, irregularly obscurely puckered at the edge.

Patella equestris, pars, Linnaeus, Syst. Nat. p. 257.

Calyptrea equestris, pars, Lamarek.

Calyptrea Roissy, Dufo.

Lithodaphnæ longirostris, Owen.

Hab. Island of Bohol, Philippines (attached to the under surface of masses of coral pressed to some depth in 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 Linnaean *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 *Lithodaphnæ longirostris*, corresponds the best with the Lamarekian diagnosis, "striis longitudinalibus acutis, undulatis, subtuberculatis," though not with the Lamarekian figures of reference; and it corresponds also best with Dufo's *C. Roissy*, which he describes as having the margin of the upper shell denticated, 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.)

CALYPTREA TORTILIS. *Calypt. testâ suborbiculari, depresso-conica, vertice obtusa, emulsiâ, sub lente minutissimè radiatâ striatâ, ceraso nigricina pectinatis e-curvatis, rugis laevibus, calli perianthesis; appendice interna subnuda.*

THE CRUMPLED CALYPTREÆ. Shell somewhat orbicular, depresso-conic, obtuse at the top, white, beneath the lens very minutely radiately striated, peculiarly crumpled towards the margin, the crumples being swollen and very prominent; 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.)

CALYPTREA CIRCARRICOSA. *Calypt. testâ orbiculari, depressâ, vertice parvè circarricâ, laevi, conulâ, sub lente minutissimè radiatâ striatâ, concentricè pectinatis plicatiscrapulatis, rugis laevibus, circophoribus, appendice interna aluticâ.*

THE CIRCARRICED CALYPTREÆ. 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. Catnanaan, 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.



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CALYPTREA.

PLATE II.

SPECIES 4. (Fig. 3.) Mus. Cuming.)

CALYPTREA BULLA. *Calyp. testā subaequali, tenuis-*
simā, pellucidā subcaudā; concentricis pleuro-
corrugatis, vertice et rostro, nūllis paleis et
rotis; striis striatulis concentricis sub-
ale sublimissis fasciatis; appendice internā bps-
erens sub, gracili, rotā basali levi, irregulari, opaca.

THE BUBBLE CALYPTREA. Shell nearly orbiculate, very thin, transparent-white, subconoid, concentrically placidly 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 Zulu, 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*c*, is but a slight irregular deposit of calcareous matter, void of any regular sculpture. Fig. 4*a* and 4*e* 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 POLYMERIA. *Calyp. testā ovata, nulle con-*
vexi, margine sinuata, obliquā, vertice laterali, obtuso,
pellucidā subā, superā subconcentricā, superficialiter

corrugata, radiatā regulariter subtiliter striatā, ap-
pendice internā rotā obliquā.

THE NIGHT-CAP CALYPTREA. Shell ovate, rarely 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 Burnas, 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 PAPHYACIA. *Calyp. testā compressā ovata,*
tenuisconoidē, obliquā, vertex postico, pellucidā subā,
radiatā subconspiciē striatā, nūllis pleuraliter cor-
rugatis, margine sinuata; appendice internā, rotā
obliquā.

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.

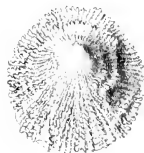
A light, swollen, compressly ovate species, very obliquely grown, the vertex being quite posterior. The striae are more conspicuously developed than in the preceding species, and there is a peculiar wrinkled character about the surface which does not appear to have arisen from any irregularity of its place of attachment. The crumpling of the margin is also characteristic.



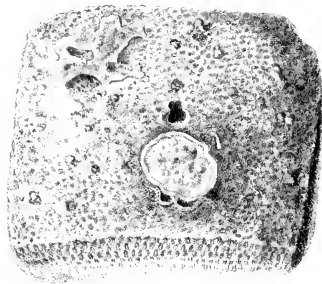
7a



8a



9a



7b



10a



11a



12a

CALYPTREA.

PLATE III.

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

CALYPTREA ADAMSII. *Calypt.* testâ suborbiculari, sub-
 cuneata, depressa-concava, concentricè plicato-lamellata,
 vertice obtusâ, radiatâ; dorsâ levitè striatâ, stri-
 matâ ventrâ, subâctis, radiatâ; appendice interna
 granulata. (See *testâ tenui, subâctâ.*)

ADAMS'S CALYPTREA. Shell nearly orbicular, rather
 solid, depressed, conical concentrically plicately lam-
 inated, obtuse at the top, radiately densely ridge-
 scutated, striae very sharp, close set, waved, internal
 appendage prominent; basal valve thin, rather obse-
 cure.

Calyptrea depressa, Adams and Reeve (not of Zanark),
 Marb. Voy. Samarang, p. 70, pl. 11, f. 2*a, b*.

Hab. Dalguzur, Island of Zebu, Philippines (on masses
 of coral, buried in sand at a depth 4 from two to
 four feet); Cuming.

Detached specimens of this species, collected by Sir Ed-
 ward 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 coast 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.)

CALYPTREA ALYFOLATA. *Calypt.* testâ suborbiculari, nor-
 ditè alidâ, depressa-concava, vertice ventrâ rotundâ, ver-
 tice subâctis, radiâ, radiâ levitè et striatâ, stria flexu-
 sis, radiâ irregularibus, multique compresso-squamatis,
 concentricè hic illâ levitè fimbriatâ; appendice interna
 subâctâ.

THE NON-YOOFED CALYPTREA. Shell somewhat orbic-
 ular, 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, MN. Mus. Cuming.

Hab. Galapagos Islands; Cuming.

The ridged sculpture in this species has a peculiar
 widely flexuous character, and is laterally compressed and
 raised into scales throughout, interrupted at intervals with
 fine concentric lamellar 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.)

CALYPTREA REGIUM-SINENSE. *Calypt.* testâ orbiculari,
 pellucida-alidâ, depressâ, laevellâ levissimè concentricè
 nullo-ossâ pectè interlè cutabulata, laevellâ stria densè
 radiatâ, vertice rectâ; appendice interna subprominente.

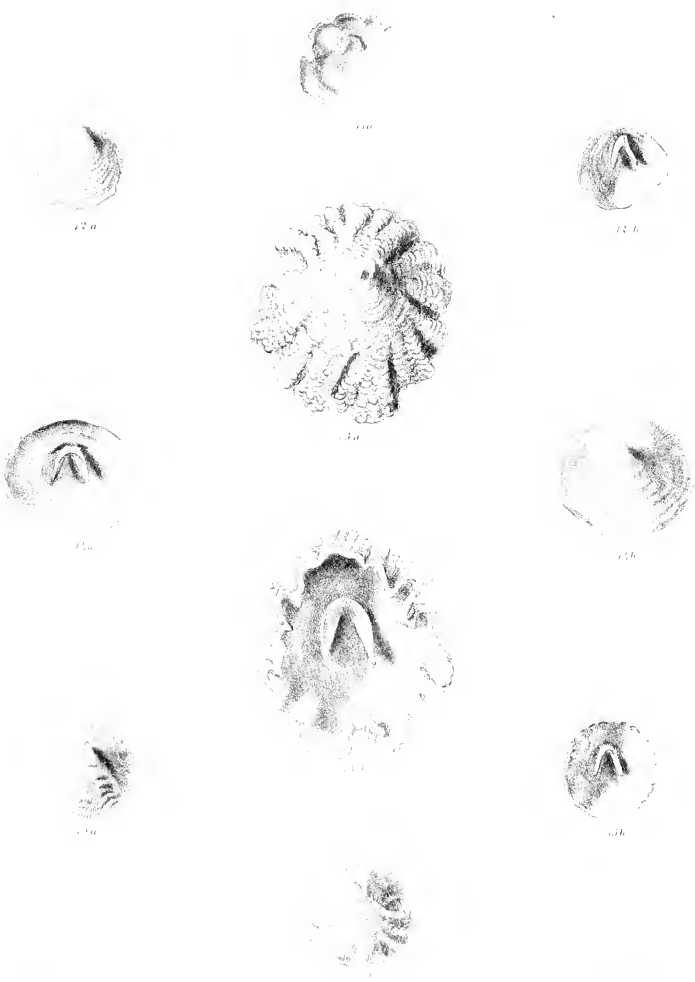
THE CHINESE-ROOF CALYPTREA. Shell orbicular, trans-
 parent white, depressed, peculiarly roofed with nume-
 rous concentric lamellae, which are densely rayed with
 striae, vertex straight; internal appendix rather promi-
 nent.

LAMARCK, *Anim. sans vert.* vol. vii, p. 621.

Pect. laevellâ-Sinense, Cuming.

Hab. Island of Capul, Philippines (abundant under stones
 at low-water); Cuming.

The peculiar succession of radial lamellae with which
 this species is roofed giving an appearance to the shell
 which suggested to the old French naturalists the name
 of *Le Toti Chinois*, has been so often figured that I have
 deemed it sufficient to give the under surface and interior.



CALYPTREA.

PLATE IV.

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

CALYPTREA CALYPTROIDEA. *Calypt testudo calyptroideus* (Cuming).
Cal. testudo calyptroideus, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*.

THE TESTUDO CALYPTREA. Shell orbicular, broadly convex, with a weakly-indented, very irregular, radiately strongly striated, stripe sharply edged, diverging into a process, bent at posterior, broadly, striated, internal appendage centrally, very short.

Hab. Cebu, Manila, Province of Taybas, Island of Luzon, Philippine Islands, Cuming.

Of a dull, pressed, striated, gravel, striated, somewhat irregularly, together, with the internal appendage very small.

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

CALYPTREA CALYPTROIDEA. *Calypt testudo calyptroideus* (Cuming).
Cal. testudo calyptroideus, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*, *Cal. testudo calyptroideus*.

THE TESTUDO CALYPTREA. Shell orbicular, conical, cap-shaped, posteriorly sharply hooked at the top, concentrically, finely wrinkled, radiately densely striated, transparent-white, internal appendage obliquely hooked.

Hab. Moluques.

A delicate *Phyllo-* shaped shell, of this transparent-white substance, very sharply hooked at the top, encircled concentrically, more especially towards the margin, with irregular wrinkle-like fold.

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

CALYPTREA MARTINIANA. *Calypt testudo martiniana* (Cuming).
Cal. testudo martiniana, *Cal. testudo martiniana*, *Cal. testudo martiniana*, *Cal. testudo martiniana*, *Cal. testudo martiniana*, *Cal. testudo martiniana*, *Cal. testudo martiniana*, *Cal. testudo martiniana*, *Cal. testudo martiniana*, *Cal. testudo martiniana*.

MARTINI'S CALYPTREA. Shell ovate, elevated convex, transparent-white, rather thick, strongly wavy-rippled, especially at the margin, everywhere roughened with wrinkles, top nearly central, obtuse; internal appendage oblique, prominent.

Calypt testudo martiniana (Cuming).
 Fig. 11a, 11b.

Hab. Brangas, Island of Cuzco, Philippines, Cuming.

All the shells of this genus that came into the hands of the author were referred to the Linnæan *Phyllorhynchus*, and this among the numbers. It was one of the first shells published by Martini in his first work, the "Neylon Cabinet," (volume of 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, erumped growth.

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

CALYPTREA CERATA. *Calypt testudo cerata* (Cuming).
Cal. testudo cerata, *Cal. testudo cerata*, *Cal. testudo cerata*, *Cal. testudo cerata*, *Cal. testudo cerata*, *Cal. testudo cerata*, *Cal. testudo cerata*, *Cal. testudo cerata*, *Cal. testudo cerata*, *Cal. testudo cerata*.

THE GYON-STELL CALYPTREA. Shell nearly orbicular, but little convex, transparent-white, rather wrinkled, radiately densely striated, stripe rather conspicuous, somewhat posterior, small, sharp, unately hooked; internal appendage short, rather broad.

Hab. Brouha, Trans. Zool. Soc. vol. 3, p. 191, pl. 27, f. 4.

Hab. Island of Maerte, Bay of Guayaquil, Cuming.

A rather flat, hyaline shell, with the beautiful radiating stripe which characterizes nearly all the species of this genus under different phases, rather conspicuously developed.

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

CALYPTREA SACCHARIFRUMEA. *Calypt testudo saccharifruma* (Cuming).
Cal. testudo saccharifruma, *Cal. testudo saccharifruma*, *Cal. testudo saccharifruma*, *Cal. testudo saccharifruma*, *Cal. testudo saccharifruma*, *Cal. testudo saccharifruma*, *Cal. testudo saccharifruma*, *Cal. testudo saccharifruma*, *Cal. testudo saccharifruma*, *Cal. testudo saccharifruma*.

THE SUGAR-LEAF CALYPTREA. Shell orbicular, elevated convex, cap-shaped, white, concentrically finely plicate, wrinkled, radiately striated, top nearly central, obtusely hooked; internal appendage rather elongated.

Hab. Island of Bohol, Philippines; Cuming.

Very closely allied to *C. stipitata*, but of more solid structure and more elevated conical form. The vertex is not however so posteriorly hooked and rap-like. The wrinkled sculpture is coarser, but that might be due to the more roughened surface of its place of attachment.



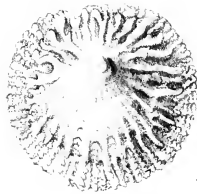
16a



17a



17b



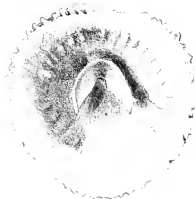
18a



19a



19b



20a



21a



21b



22a

22b



22



23 a



22 b



23 a



23 a



23 b



23 b



23 a



23 b



23 b

CALYPTREÆ.

PLATE VI.

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

CALYPTREA BALANOIDES. *Calyp. testâ obliquè conica, verruculata, reticulata, striatâ; striâ et promissurâ costato-areolata, a. n. n. vertice ac. s. subovimata; appendice laterali striatâ.*

THE **BALANOIDÆ** **CALYPTREÆ.** 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.)

CALYPTREA CURVÆ. *Calyp. testâ transversè ovata, depressâ, concentricè striatâ, concentricè costatâ, complanatâ, parva corrugatâ, vertice postico, uncinato; appendice laterali obliquâ.*

THE **HORN** **CALYPTREÆ.** Shell transversely ovate, depressed, radiately minutely striated, concentrically lined, smooth, but little wrinkled, top posterior, hooked; internal appendage oblique.

REORDER, *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.)

CALYPTREA UMBONA. *Calyp. testâ ovata, rufè convexâ, pellucidâ-âlbâ, diaphanâ, radiatim costâ striatâ, striâ subdivariatâ, concentricè corrugatâ, rugis pilularibus albis, vertice postico, obtusè uncinato; appendice laterali obliquâ.*

THE **DIAPHANOUS** **CALYPTREÆ.** Shell ovate, rudely convex, transparent-white, diaphanous, radiately minutely striated, striae subdivariante, concentrically

corrugated, wrinkles pliently 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.)

CALYPTREA STELLÆ. *Calyp. testâ suborbiculari, planulatâ, loris subtilibus radiantibus striis concentricis decussatis, dense nitidè stellatâ, vertice subcentrali, parvo, acuto; appendice laterali brevissima.*

THE **STAR** **CALYPTREÆ.** Shell nearly orbicular, rather flat, closely neatly starred with fine radiating ridges crossed with concentric striae, top nearly central, small, sharp; internal appendage very short.

Hab. Belize, 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.)

CALYPTREA VARIA. *Calyp. testâ orbiculari vel transversè ovata, pl. non convexâ, nunc levâ, nunc convexâ, radiatim creberrimè striatâ, levigatâ, pellucidâ-albâ, vertice subcentrali, parvo, sabacuto; appendice laterali latissima.*

THE **VARIABLE** **CALYPTREÆ.** 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.

REORDER, *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.

Calyptura Pl. VII



27a



27b



27c



28a



28b



28c



29a



29b



29c



30a

Calyptrea Pl. VIII.



CALYPTRÆA.

PLATE VIII.

Species 30 (Fig. a, b, c, d, Mus. Cuming.)

CALYPTRÆA SERRULUM. *Calyp. testâ orbiculatâ, regulis concentricis, periculis-albidis, posticâ et alia à levatâ, marginibus albis, clava, interstitiis varietim striatis, appendicibus internis parvis.*

THE GILL SHIPWRECK CALYPTRÆA. Shell orbicular, regularly convex, transparent-white, hyaline, radially striated, top posterior, interstices radially striped, top posterior, hooked, internal appendage small.

Hab.—Chilippen Islands; Cuming.

Characterized by a broad orbicular form, with the radiating ridges rather conspicuous, all of equal distance.

Species 31 (Fig. a, b, Mus. Cuming.)

CALYPTRÆA ACULEATA. *Calyp. testâ spherulicâ, declivitate auctâ, periculis-albidis, hy. int., sub levitate levitate radiatim striatâ, margine crenatâ, aculeis brevissimis, aperturis prominentibus, scabris, albidis, periculis-albis, ovale truncatâ; appendicibus internis gracilibus.*

THE SPINY CALYPTRÆA. Shell nearly orbicular, declivity convex, transparent-white, hyaline, beneath the lens very finely radiately striated, crenulated at the margin, prickly scaled, scales prominent, rather obtuse, top posterior, sharply hooked; internal appendage slender.

Hab.—Honduras; Dyson.

This very dol-eave little species is distinguished from all

others by the presence of a number of rather distant squamite spines.

Species 32 (Fig. a, b, Mus. Cuming.)

CALYPTRÆA VANIKOROENSIS. *Calyp. testâ obliquè conicâ, crassa, auctâ, p. levitate-albidâ, radiatim levatâ et striatâ, vertice postico, declivitate; appendicibus internis perobliquâ.*

THE VANIKORO CALYPTRÆA. Shell obliquely conical, rather thick, transparent-white, radially ridged and striated, top posterior, raised, internal appendage very oblique.

Quoy, Moll. Voy. de l'Australie, pl. 72. f. 20-24.

Hab.——?

Resembling *C. sordidum* in sculpture, but of more radical oblique growth.

Species 33. (Fig. a, b, Mus. Cuming.)

CALYPTRÆA LIMBO. *Calyp. testâ declivitate conicâ, piliferâ, subcylindricâ, radiatim levatâ et striatâ, vitta radiatâ, rugosa, interrupta, vertice subpostico, auctâ; appendicibus internis gracilibus.*

THE HOSS CALYPTRÆA. Shell elevated conical, cap-shaped, transparent-white, radially ridged and striated, ridges strong, roughly interrupted, top subposterior, hooked, internal appendage slender.

Hab.—Honduras; Dyson.

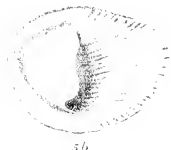
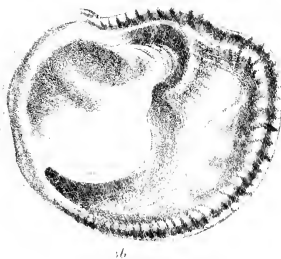
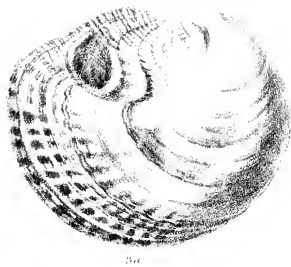
The ridges of this little erect, cap-shaped species are strong and peculiarly roughened.

CALYPTREA.

| | No. | Species | No. | Species | No. |
|---|-----|---------|--|---------|-----|
| scutellata, <i>Rees</i> | VII | 31 | Lacaria, <i>Rees</i> | VII | 28 |
| Adamsi, <i>Rees</i> | III | 7 | Martiniana, <i>Rees</i> | IV | 17 |
| alveolata, <i>L. Adams</i> | III | 8 | ossea, <i>Rees</i> | V | 19 |
| Balaniculis, <i>Rees</i> | VI | 21 | pygmaea, <i>L. Adams</i> | II | 6 |
| bulbi, <i>Rees</i> | II | 1 | porosa, <i>Rees</i> | V | 20 |
| emacellata, <i>Adams and Reece</i> | VII | 27 | Rossii, <i>Duf.</i> | I | 1 |
| epitoca, <i>Rees</i> | IV | 14 | saccharinata, <i>Rees</i> | IV | 15 |
| excavata, <i>Rees</i> | I | 3 | scabris, <i>Rees</i> | V | 16 |
| formi, <i>Rees</i> | VI | 22 | scutellata, <i>Rees</i> | VIII | 30 |
| errugata, <i>Rees</i> | V | 18 | stella, <i>Rees</i> | VI | 24 |
| eyathella, <i>Rees</i> | VII | 29 | stultorum, <i>Rees</i> | IV | 12 |
| depressa, Adams and Reece | III | 7 | tectans-Sinense (<i>Patella</i>), Chem | III | 10 |
| diaphana, <i>Rees</i> | VI | 20 | terilis, <i>Rees</i> | I | 7 |
| domitoria, <i>Rees</i> | II | 5 | unda, <i>Rees</i> | VIII | 33 |
| equestrus (<i>Uvella</i>), Lamourin | I | 1 | undulosa, <i>Rees</i> | V | 17 |
| fibulata, <i>Rees</i> | IV | 11 | Vaukensis, <i>Gray</i> | VIII | 32 |
| Hippocifonius, <i>Rees</i> | VII | 26 | varia, <i>Rees</i> | VI | 25 |

MONOGRAPH
OF THE GENUS
C R E P I D U L A.

Edited by the sweet grass slipper?
Schizopora



CREPIDULA.

PLATE I.

Genus CREPIDULA, *Linnaeus*.

Testa ovata vel orbis egi, pleuraeque obliquae, vertus laevigata, venter costulata, apex haerens, marginibus irregularibus plus minus costulato, venter venter, laevius horizontalis septiformis, interstriae ad latera convergentes.

Shell ovate or oblong, gradually oblique, smooth externally, rarely ribbed, with the apex mostly marginal and more or less beak-like, interiorly hollow, with a horizontal septum-like lamina, sometimes notched at the side.

The *Crepidula*, or true Slipper Limpet, are characterized by the internal appendage, which is the distinguishing feature of this family, assuming a horizontal disk-like form. The species have been little added to since they were monographed twenty-five years ago by Mr. Boderip, 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 PROLIFORMIS. *Crep. testa ovali vel orbis apice, planata aut emarginata, nape contracta, emarginata, venter concentricè striata, epulaeque subapicali flavae costulatae venter marginibus undulata, venter circumscissus; appendice subapicali septiformi, ad latera subconvergenti.*

THE NAU-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 exaristata, DESHAYES.

Crepidula saumae, TURPIN.

Crepidula caudata, RISS.

Crepidula italica, DEFENACE.

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 PORCELANA. *Crep. testa ovali, emarginata, subapicali, apice rennata et subcostulata, albidâ, venter costusque livido-rufo et purpureo livida et radiatâ subcostulata; appendice interna subseptiformi, emarginata, undulata.*

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 DILATA. *Crep. testa ovali-oblongata, emarginata, subapicali, obliquè curvata, venter costusque albidâ, livido-fusca et marginibus livida et radiatâ livida; appendice interna emarginata, undulata, ad latera profunde emarginata.*

THE DILATED CREPIDULA. Shell ovately rounded, rather thick, somewhat irregular, curved obliquely, whitish within and without, stained and radiately lividated 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. STRAIT OF MAGELLANUS 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. testa oblongo-ovata, emarginata, subapicali, interioriter emarginata, apice obtu-*

apice incurvâ et contractâ, latus extusque fulvescente-albâ, porcipies et rubescente-fusco lineatâ et lineatâ; appendice internâ profundâ, planâ.

THE EXCAVATED CREPIDULA. Shell oblong-ovate, rather thick, somewhat twisted, compressed at the side, obliquely incurv'd and beak'd at the apex, fulvous-white within and without, stained and lined 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, plani-concavâ, complanatâ, fulvescente-albâ, lineis fusciscente-rufis radiatim strigatâ; appendice internâ elevatissimeâ, 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, leniviculâ, albidi, caraco-fuscescente-lineatâ et strigatâ; appendice internâ subretundatâ, 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*.



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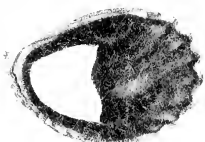
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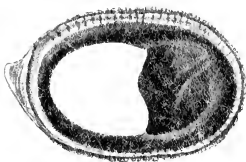
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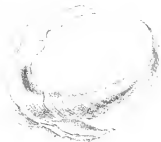
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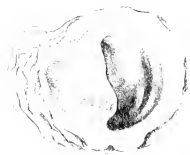
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CREPIDULA.—PLATE II

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. Cuning.)

CREPIDULA ADUNCA. *Crep. testâ ovata, lateroiter pileiformi, apice producto, conspiciè adunco, livido-fusca, costis epidermide lobata appendice interna, parviusculâ, alba*

THE HOOKED CREPIDULA. Shell ovate, laterally exp-

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

Gonolâ solida, Gray

Crepidula rostriformis, Gould

Crepidula macata, Meuke.

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



CREPIDULA.

PLATE III

Species 13. (Mus. Cuming.)

CREPIDULA ARIENATA. *Crep. testâ subobliquè ovata, brevè, paleovente tenuissimâ rotunda marginibus colorâ, albidâ, foveo-rufa erubescens punctatâ, intus carneo-albidâ, appendice mucronatâ, opalivâ.*

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. i, p. 295. pl. 29, f. 8.
Hab. St. Helena, West (Columbâ) (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. ferriata*. The locality, Island of St. Helena, given by M. De-Layes, is a slip of the pen in copying the Cumingian habitat.

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

CREPIDULA TOLYFAEA. *Crep. testâ suboblongata, rubè erubescens-albidâ, siliâ, foveo-rufa-foveo radiatâ strigatâ; appendice laterali mucronata, subovata, unguâ dilatata.*

THE TOLYFAEUS CREPIDULA. Shell nearly orbicular, rudely wart-leaved, white, radiately streaked with rust-brown; internal epiderm. rather small, slightly concave, dilated in the middle.

Calyptra fulvacea, Broderip, Trans. Zool. Soc. vol. i, p. 202, pl. 28, f. 9.

Calyptra 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 umbos, and sometimes leaving a whole 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 FORMATA. *Crep. testâ suboblongo-ovata, unguibus, apice mucronâ, complanata, albidâ, carneo-*

fulvâ (orientis) strigatâ, intus carneo-albidâ; appendice opalivâ, subapicata.

THE ARCHIEB 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.

Petilla formata, 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. c, b, Mus. Cuming.)

CREPIDULA LESSONII. *Crep. testâ obliquè ovata, subplanata, nudique concentricè laminato-fimbriatâ, diaphano-albidâ, foveo-rufa radiatâ lineatâ, intus ad marginem foveo-rufa ciliato-strigatâ; appendice medio elevatiusculâ, ad latas subconjugatâ.*

LESSON'S CREPIDULA. Shell obliquely ovate, rather flat, concentrically laminarily 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 Mauritius, Bay of Quinquail (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. testâ transversè ovata, planulata, apice obliquè laterâ mucronâ, diaphano-albidâ, appendice planulo-lanceolata, ad latas absolute inflata.*

WALSH'S CREPIDULA. Shell transversely ovate, rather flattened, obliquely laterally incurved at the apex, diaphanous-white, appendage flatly dilated, absolutely inflated at the side.

HELMANSSON, MS. in Mus. Cuming

Calyptra plana, Adams and Reeve (in Moll. Voy. Siaming)

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. testâ suborbiculatâ, concentricè irregulari, apice non marginali, concentricè plicatâ, striatâ, diaphano-albâ, interdum ferrugineo-fuscatâ, appendice internâ plano-convexâ, ad latas obsolete inflexâ.*

THE SCAB CREPIDULA. Shell somewhat orbicularly convex, irregular, apex not marginal, concentrically plicately striated, diaphanous-white, sometimes stained with rust; internal appendage flatly convex, obsolete inflexed at the side.

Hab. China Seas.

A convex diaphanous shell, presenting a striking irregularity of growth, in which the internal appendage has a flattened inflexed fold of even more rudimentary structure than the preceding species.



22. a



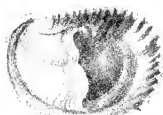
22. b



22. c



22. d



22. e



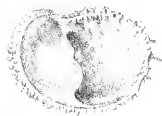
22. f



22. g



22. h



22. i



22. j

CREPIDULA.

PLATE IV.

Species 19. (Mus. Cuning.)

CREPIDULA APLYSIIFORMIS. *Crep. testâ ovata, subconica, apice subemarginata, reticentis-spirali, elacribis-fusco-rufois, appendice internâ subprofundâ, opalâ-albâ.*

III APLYSIA-LIKE CREPIDULA. Shell ovate, rather concave, slightly beaked at the apex, reddish-brown, internally brown-rayed; internal appendage rather deep, opal-white.

Loc. Rio Janeiro, Macgillivray

Gold-b-horny species, looking on the outside curiously like an *Aplusia*.

Species 20. (Fig. e, a, Mus. Cuning.)

CREPIDULA INCURVA. *Crep. testâ oblongo-ovata, tortuososinuata, apice obtusa, radiatim striatâ, purpureo-â nigra, colore latiguanâ; appendice internâ opalâ.*

III INCURVED CREPIDULA. Shell oblong-ovate, tortuously compressed, hooked at the apex, radiately striated, flecked with purple or blackish; internal appendage opal-white.

Loc. GIBB, Proc. Zool. Soc. 1834, p. 49.

Hab. St. Elena and Xipaxipi, West Columbia (found on dead shells, divided from sandy mud, at a depth ranging from six to ten fathoms); Cuning.

The tortuous compression of this shell is the same in all individual- of the species.

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

CREPIDULA COSTATA. *Crep. testâ ovata, radiatim costatâ, costis distinctissimis, flexuosis, maculato-tuberculatis, interstitiis striatis; fuscescenti-albâ, et rous marginem purpureo lineatâ et lineatâ, margine flexuoso; appendice internâ subprofundâ, opalâ-albâ, concavâ.*

III RIBBED CREPIDULA. Shell ovate, radiately ribbed, ribs distinct, flexuous, pichly-tubercled, interstices striated; brownish-white, stained and lined towards the margin with purple, margin flexuous; internal appendage rather large, opal-white, concave.

DESHAYES. Ann. sans vert. vol. vii. p. 643

Hab. New Zealand.

A 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, e, f, g, Mus. Cuning.)

CREPIDULA ACULEATA. *Crep. testâ ovata, Haliotidiformi, apice laterali- incurvâ, radiatim dense intricato-spiralitatâ fusco aut purpureo et albo radiatâ; appendice internâ subprofundâ, concavâ-albâ, in medio et ad latera subemarginatâ.*

III FRICALLY CREPIDULA. Shell ovate, Haliotis-shaped, laterally incurved at the apex, radiately densely prickly-seeded, 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, Lamarek
Crepidula hystrix, Broderip.
Crepidula velans, Broderip.
Crepidula Californica, Nuttall.

Hab. Tobias Island, Peru, Cuning. California, Nuttall, Carpenter. Honduras; D'Yson. Sandwich Islands-Australia. Kurrachee, mouth of the Indus.

As Mr. Broderip truly predicted, when describing his *C. hystrix* and *velans*, 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. Cuning.)

CREPIDULA HEPATICA. *Crep. testâ ovata, subprofundâ concavâ, brevitatâ, apice oblique costato, marginali, interstitiis costatis, ad apicem unânitâ tuberculatâ; appendice internâ copuliter septiformi, concavâ, opalâ-albâ.*

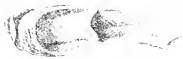
THE LIVER CREPIDULA. Shell ovate, rather deeply convex, smooth, with the apex obliquely beaked and marginal, dark-rhesnut, minutely white-rayed at the apex; internal appendage largely septum-shaped, concave, opal-white.

DESHAYES. Enc. Méth. Zool. vol. ii. p. 26.

HINDS. Moll. Voy. Sulphur. p. 53.

Hab. ——— ?

This species differs from *C. obtusa* 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.



CREPIDULA.

PLATE V.

Species 24. (Mus. Cuming.)

CREPIDULA ROSTRATA. *Crep. testâ oratâ, apice producte, rostrato, fuscocæcæ, subpellucidâ, internum nigropunctatâ; appendice internâ parvâ, diaphano-âlbâ, subincurvâ.*

THE BEAKED CREPIDULA. Shell ovate, apex produced, beaked, brownish, subtransparent, sometimes black-dotted; internal appendage small, diaphanous-white, rather incurved.

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 oratâ, truncatâ, concavâ, subcompressâ, apice obliquè rostrato, marginali, pallido, fuscocæcâ; appendice internâ parviscissâ, solutâ, aequali.*

THE CONVEX CREPIDULA. Shell ovate, rather thin, convex, somewhat compressed, apex obliquely beaked, marginal, pale-brown; internal appendage rather small, a little incurved.

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 oratâ, sublobulatâ, apice obliquè concavâ, sordide albâ; appendice internâ in medio peralata.*

THE PALE CREPIDULA. Shell ovate, somewhat dilated, obliquely incurved at the apex, dead-white; internal appendage produced in the middle.

PROFFER, 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. contractus*, from the mouth of the Indus, at Kurrachee.

Species 28. (Mus. Cuming.)

CREPIDULA EXALATA. *Crep. testâ elongato-productâ angustâ, convexâ, sordide albâ; appendice internâ convexâ, diaphano-âlbâ.*

THE CAST-IRON CREPIDULA. Shell elongately produced, narrow, curved, dead-white; internal appendage convex, diaphanous-white.

NUTTALL, Jay's Catalogue of Shells, p. 11.

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 ELONGATA. *Crep. testâ obliquè orbiculatâ, apice subrostratâ, truncâ, subpellucidâ-âlbâ, rufescente-radiatâ; appendice internâ parviscissâ, 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 oratâ, subcompressâ, radiatâ, concavo-radiatâ, apice marginali, subrostrato; iridescente-lanceâ, crasso, opacâ rufente; appendice internâ diaphano-âlbâ, subincurvâ.*

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 sculptur 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.

| Species. | Year. | Locality. | Year. |
|---|-------|-----------|-------|
| <i>aculeata</i> (Pall.) Gmelin | IV. | 22 | 22 |
| <i>andreae</i> , Sowerby | II. | 12 | 26 |
| <i>angulatus</i> , Valenciennes | II. | 9 | 1 |
| <i>Aplysoides</i> , Reece | IV. | 19 | 16 |
| <i>armata</i> , Broderip | III. | 13 | 30 |
| <i>bitubata</i> , Gray | IV. | 29 | 8 |
| <i>californiana</i> , Deshayes | I. | 1 | 6 |
| <i>Californica</i> , Nuttall | IV. | 22 | 9 |
| <i>caudata</i> , Risso | I. | 1 | 26 |
| <i>Cerithioides</i> , C. B. Adams | II. | 9 | 1 |
| <i>convexa</i> , Say | IV. | 25 | 2 |
| <i>costata</i> , Deshayes | IV. | 21 | 24 |
| <i>dilatata</i> , Lamarck | I. | 3 | 12 |
| <i>echinus</i> , Broderip | IV. | 22 | 10 |
| <i>excavata</i> , Broderip | I. | 4 | 18 |
| <i>excavata</i> , Nuttall | IV. | 28 | 1 |
| <i>fimbriata</i> , Reece | II. | 11 | 12 |
| <i>foveolata</i> (Calyptosis), Broderip | III. | 14 | 2 |
| <i>foveolata</i> (Pall.) Linnaeus | III. | 15 | 12 |
| <i>glauca</i> , Say | II. | 7 | 1 |
| <i>hepatica</i> , Deshayes | IV. | 23 | 17 |
| <i>lystria</i> , Broderip | IV. | | |
| <i>incurva</i> , Broderip | IV. | | |
| <i>Italica</i> , Defrance | I. | | |
| <i>Lessonii</i> , Broderip | III. | | |
| <i>lirata</i> , Reece | IV. | | |
| <i>marginalis</i> , Broderip | II. | | |
| <i>Nautiloides</i> , Lesson | I. | | |
| <i>oaxa</i> , Sowerby | II. | | |
| <i>pallida</i> , Broderip | IV. | | |
| <i>phoca</i> , Say | I. | | |
| <i>porcellana</i> (Pall.) Linnaeus | I. | | |
| <i>rostrata</i> , C. B. Adams | IV. | | |
| <i>rosstriformis</i> , Gould | II. | | |
| <i>rugosa</i> , Nuttall | II. | | |
| <i>scabrus</i> , Reece | III. | | |
| <i>simosa</i> , Turton | I. | | |
| <i>solida</i> , Hinds | II. | | |
| <i>squama</i> , Broderip | I. | | |
| <i>ovata</i> , Menke | II. | | |
| <i>urguiferans</i> , Lamarck | I. | | |
| <i>Walshi</i> , Herdman | III. | | |

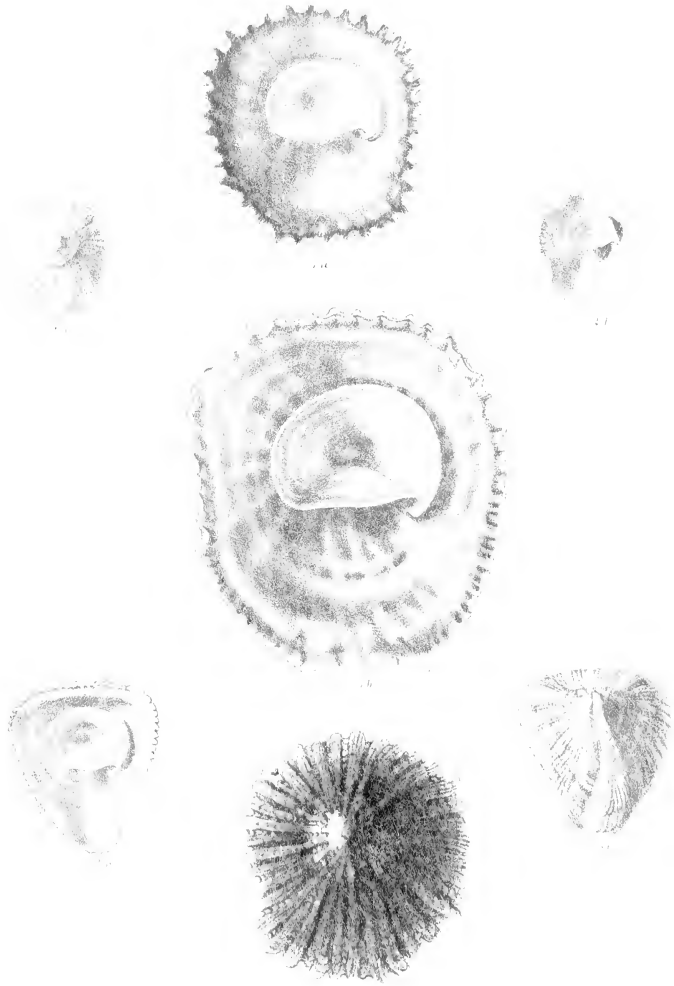
MONOGRAPH

OF THE GENUS

C R U C I B U L U M.

They shall see a plant
Crowned in its youth as though it were
With many flowers, cups freshly rose-tinted.

1872



CRUCIBULUM.

PLATE I.

GENUS CRUCIBULUM, Schumacher.

Testa ovata vel suborbata, una depressa nuda; costacea, radiata costata vel testacea striata, interlinea spinosa, coriis sagittatis sordentibus. Appendix interna cyathiformis, interlinea lateralis et externa

Shell ovate or orbicular, sometimes depressed, sometimes conoid, 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 Lamarckian *Calyptea* 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 *Calyptea* proper. In *Crucibula* there is no trace of the transparent thread-striated tissue of *Calyptea*. 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 ovato-convexâ, orbiculari, tenui, subulphano, costacea striatâ, albidâ, interlinea fusco-rubente pallidâ striatâ; appendice interna cyathiformi, subnuda, chænaâ.*

TRIANGULAR CRUCIBULUM. Shell elevated convex, irregular, thin, subulphamous, very closely striated, whitish, sometimes faintly streaked with fuscous-red; internal appendage cup-shaped, rather large, ivory-white.

Calyptea tenuis, Broderip, Trans. Zool. Soc. vol. i. p. 199. pl. 27. f. 9.

Hab. Peru.

A light shell, of very irregular growth, mostly paired with rather faint, promiscuously divaricating, fuscous-red streaks.

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

CRUCIBULUM SCUTELLATUM. *Cruc. testâ ovatâ vel orbic-*

ulari, subdepressâ, radiatâ fortiter rugoso-costatâ costis striatis, intersticiis suboboleâ tuberculato-fenestratis, limbo testâ vel fusâ, coriâ muroratâ, plicatâ fuscâ rubro-fusâ interlinea pictâ, coriis lateraliter subcompressis, uncinatâ; appendice internâ cyathiformi, peronipâ, chænaâ, interlinea fusca sordentibus.

THE SHIELD-LIKE CRUCIBULUM. Shell ovate or orbicular, rather depressed, radiately strongly wrinkled-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. *Calyptea rugosa*, Lesson.

Calyptea imbricata, Sowerby (not of Broderip).

Hab. Paita, Peru; Lesson. Yumbá, 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.)

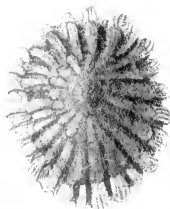
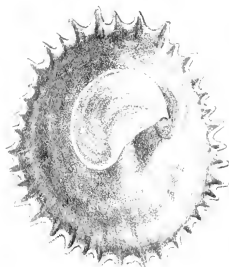
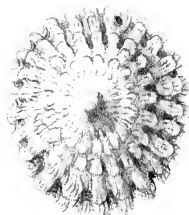
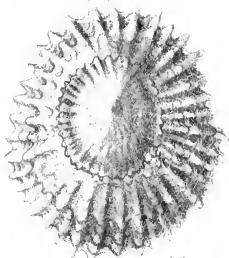
CRUCIBULUM TRIGONALE. *Cruc. testâ trigono-ovatâ, crassa, pectinato convexâ, levigatâ, versus marginem plicato-circumgatâ, albâ, fusco-rubente coriâ striatâ, coriis ovâ uncinatâ; appendice internâ cyathiformi, peronipâ, chænaâ.*

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.

Calyptea trigonalis, Adams and Reeve, Moll. Voy. Sainarang, p. 70. pl. 9. f. 7 *a, b*.

Hab. China Seas.

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 plicately wrinkled margin, streaked with fuscous-red as in *C. tenue*.



CRUCIBULUM.

PLATE II.

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

CRUCIBULUM RETROSUM. *Crae, testâ obconico-convexâ, pubescenti, subregulari, rugoso-concavâ et striatâ, albâ; foveo-rubro-striatâ et decussatâ a lineâ, rectis postice, subquâ elata, subulnâ uncinata, appendice subrotâ apothef. con. perispermâ.*

THE RUSTY CRUCIBULUM. Shell elevated conical, cup-shaped, rather roughly wrinkled and striated, whitish, streaked and disjunctively lined with fulvous-red, top posterior, obliquely raised, rather obtusely hooked, internal appendage cup-shaped, very large.

Calyptraea rugosa, Deshayes (not of Lesson), *Ann. s. us. vert.* vol. viii. p. 627.

Calyptraea rugosa, Broderip.

An var. *Calyptraea granatosa*, Valenciennes.

Test. Island of Chiloe, Cuming.

Chiefly remarkable for its elevated cup-shape. Fig. 1 represents the habit of this species to attach one upon another.

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

CRUCIBULUM FERRUGINEUM. *Crae, testâ suborbiculari, rotâ, convexâ reflexâ attenuatâ, laevigatâ, convexâ sanguinea concavâ albidâ, ferrugineo-roseâ lineâ et striatâ, rectis subconstrictis, appendice rotariâ apothef. con. perispermâ, obtusâ.*

THE RUSTY CRUCIBULUM. Shell nearly orbicular, raised, attenuated towards the top, smooth, rounded 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. *Crae, testâ ovatâ, irregulari, sublaevigatâ, radiatâ costatâ, costis subnatis angulatis, ad extremitates convexatis, purpuraceo-fuscis, levibus, costis subulnatis; appendice rotariâ apothef. con. apertâ, hyalina-ovata.*

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.

Calyptraea umbrella, Deshayes, *Enc. Méth. Ver.* vol. ii. p. 173. n. 8.

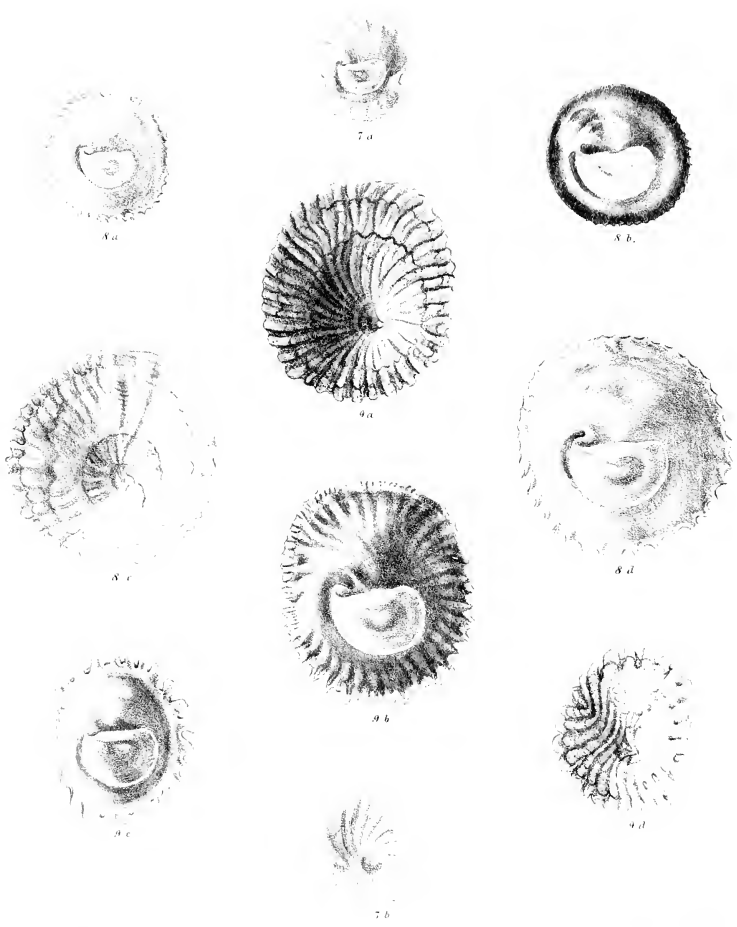
Calyptraea rotunda, Broderip, *Trans. Zool. Soc.* vol. i. p. 196. pl. 27. f. 1.

Hab. Panama and Real Lajas; Cuming.

Distinguished from *C. stellatatum*, 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. stellatatum*, described at Plate I., having the ribs more spread and more grooved and red-dotted.



CRUCIBULUM.

PLATE III.

(Mus. Cuming.)

This shell appears to be a specimen of *C. tenuis*, in finer condition than the Broderipian type figured in Plate I. The vertex being free from any decoration is, though central, twisted obliquely, and sharply hooked, and the shell is more strongly sculptured with close-set, ridge-like striae.

Species 8. (Fig. 8a, 8b, 9a, 9b. Mus. Cuming.)

CRUCIBULUM COMEGATUM. *Cruc. testâ orbiculari vel ovali, levatissimo, et vix elevatè compresso, radiâna costâti, costis peculiariter flexuoso-rugatis, albâ et fuscâ-roseâ; appendice interna cupiformi, ampla, chrysa.*

THE WRINKLED CRUCIBULUM. Shell orbicular or ovate, elevatedly convex, top laterally compressed, radiately ribbed, ribs peculiarly flexuously wrinkled, white or livid-brown; internal appendage large, ivory-white.

CARPENTER, Proc. Zool. Soc. 1856, p. 294.

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. 8c, 8d, 9c, 9d. Mus. Cuming.)

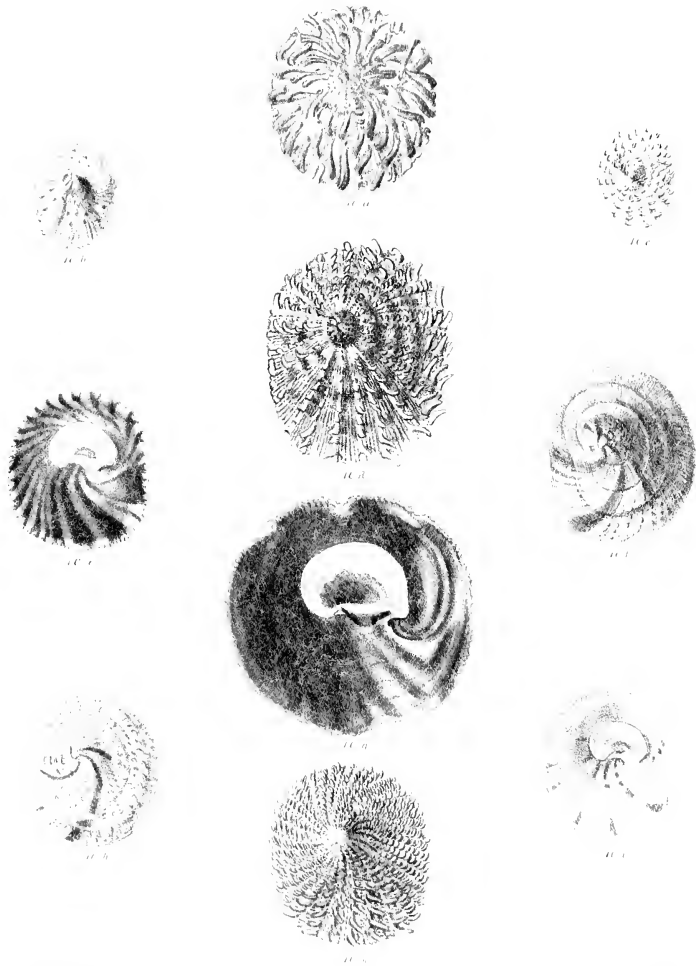
CRUCIBULUM IMBRICATUM. *Cruc. testâ orbiculari vel ovali subelevatissimo, oblique radiâna costâti, costis fortibus, suberosis, vertice nullo, laterâliter compresso, albâ, fusco-roseâ interâna strigatâ; appendice interna cupiformi, ampla.*

THE IMBRICATED CRUCIBULUM. Shell orbicular or ovate, rather elevatedly convex, obliquely radiately ribbed, ribs strong, rather flexuous, top sharp, laterally compressed, whitish, sometimes streaked with brown-red, internal appendage cup-shaped, large.

Catoptræ 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.



CRUCIBULUM.

PLATE IV.

Species 10. (Fig. a to k. Mus. Cuming.)

CRUCIBULUM SPINOSUM *Canc. testâ orbiculari, interdum subquadrato-ovâ, anae subtilissimâ, convexâ, anae depressâ, laevissimâ, radiatâ licetâ et irregulariter corrugato-striatâ, tubulo-spinosâ, interdum anam rariorâ, vertex subcentrali, obliquè contractâ; lividâ aut lutesco-âsâ, purpureo contracto-radiatâ, intus intusâ viâerâ et albâ; appendice internâ cyathiformâ, amplâ, lateraliter compressâ, crystallino-albâ, multo interdu convexâ.*

THE SPINED CRUCIBULUM. Shell orbicular, sometimes squaridly ovate, rather solid and convex, or depressed and rather thin, radiately ridged and irregularly wrinkle-crested, 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 asbestained in the middle.

Calyptrea spinosa, Sowerby, Genera of Shells, f. 6.

Calyptrea P. Cos. Gray.

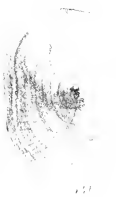
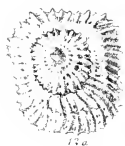
Varieties. *Calyptrea hispida* and *maculata*, Broderip.

Calyptrea tubifera, Lesson.

Calyptrea cinerea, Milb.

Hab. Sea 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*, Milb., 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. *Croc. testâ ovali, subpeltiformi, vertice acuto, pinnatim, subincurvâ, radiatum suble costatâ, costis distantibus, concentricè acutè imbricatis, ad marginem incurvatis; spandecostriatâ; appendice internâ acutâ, latè triangulâ, cyathiformi, ad latera 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, *Proc. Zool. Soc.* 1856, p. 168.

Hab. Terni.

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. *Croc. testâ subquadrato-ovata, irregulari, radiatum costatâ, costis interruptis, subundulato-concavatis, radiis irregularibus, vertice acuto, depressiusculo; albâ, punctis rubrofuscis plus minus levisquamâ, intus violaceâ; 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, *Proc. 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. *Croc. testâ orbiculari, depressiusculâ, incurvata, vertice centrali, subulato; apice albâ, radiatum deorsum incurvato-striatâ; appendice internâ acutâ, latè cyathiformi.*

THE SPECTRE CRUCIBULUM. Shell orbicular, rather depressed, thick, top central, rather obtuse; opake-

white, radiately deussately wrinkle-striated; internal appendage large, broadly cup-shaped.

Hab. Malacca.

A round opake-white shield of simple structure, having the surface carved, particularly towards the margin, with irregularly deussating wrinkle-like striae.

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

CRUCIBULUM EXTINGUORIUM. *Croc. testâ subquadrato-ovata, tenui, subincurvâ, peltiformi, depressiusculâ, vertice convexo, centrali; lutescente, lino-purpureasente obscure costato-radiatâ, lineisq; radiis obliquis pallidâs lineâs; appendice internâ compresso-crispatâ, ad latera 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.

Calyptrae extingutorinae, 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 AERIFLAVUM. *Croc. testâ orbiculari, depressâ, radiatâ costatâ, costis obtusis, irregularibus, internis divergentibus vel interruptis, vertice subacuto, depressiusculo; albâ, punctis et lineis rubrofuscis promiscuè dispersâ; appendice internâ cyathiformi, latiusculâ, subcentrali.*

THE AERIFLAVED 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. Cinnama; and Island of St. Thomas, West Indies.

The ribs in this species are not unlike those of *C. violacea*, 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.

Crucibulum Pl. VI.



16a



17a



17b



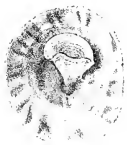
18a



19a



19b



20a



21a



21b



22a

CRUCIBULUM.

PLATE VI.

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

CRUCIBULUM STRIATUM. *Cruc. testâ orbiculari, piliferâ, vertice conoido rotato; spiralis fuscescens, radiata striata, stris subannulis, distantibus, concentricis obsolete fimbriatis; appendice internâ late patulâ, ad latus affixâ.*

THE STRIATED CRUCIBULUM. Shell orbicular, cup-shaped, top conoid, beakid; 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 cup-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 VERTITUM. *Cruc. testâ orbiculari, depressosculâ, convexâ, vertice obtusa, radiatim dense striatâ, stris corrugatis, irregularibus; spiralis fuscescens; appendice internâ amplâ, auriformi, patulâ, submarginatâ, ad latus affixâ.*

THE EARLED 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. testâ conico-orbiculari,*

albâ, fusco-rufescente radiatâ, vertice acuto, costoneo lucto, punctato, radiatim striatâ et erbercinâ tenuifidâ; appendice internâ cyathiformi, productâ, laterâ/ter concavo-compressâ.

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 Caracass.

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. testâ orbiculari, medio conico, vertice rotato, subannulari, latero-acute-lacteâ, subopacâ, lævigatâ, versus marginem peculiariter corrugato-verrucosâ; appendice internâ angustâ cyathiformi, compressâ, ad latus affixâ.*

THE WARTY CRUCIBULUM. Shell orbicular, conical in the middle, top central, somewhat umillary, yellowish cream colour, rather opaque, smooth, peculiarly wrinkle-warty towards the margin; internal appendage 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. exlivorina*, described in the preceding Plate, as figured by De Blainville in his 'Manuel de Malacologie,' pl. 48, f. 8.

Crucibulum Pl. VII.



CRUCIBULUM.

PLATE VII.

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

CRUCIBULUM SERRATUM. *Croc. testâ suborbiculari, tenui, depressa, pellucidâ-âlbâ, purpureo-castaneo interstria uncinatâ 4 nârradiatâ, radiatim costatâ, costis prominensibus, interstitiis decussatis rugosis, margine serratâ, vertice acuto; appendice internâ eic cyathiformi, lateraliter vix 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, *Proc. Zool. Soc.* 1834, p. 37.
Hab. Real Lâjos and Mierte, 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. *Croc. testâ subconica, sordide luteâ, intus cinereo-fusâ, subradiatâ, vertice suborbiculari; appendice internâ subtrigono-compressâ, crystallino-âlbâ.*

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, *Proc. Zool. Soc.* 1834, p. 37.
Eachon var. *Calyptrea nugis*, Broderip.
Hab. Valparaiso and Panama (found on stones and shells); Cuming.

A small cup-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 nugis*.

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

CRUCIBULUM CONCAMERTUM. *Croc. testâ pileiformi, vertice acuto, radice interno, âlbâ, radiatim costatâ,*

costis prominensibus, interstitiis nudique profunde concaveatis; appendice internâ subcylindricâ, acutâ, 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. *Croc. testâ orbiculari, pileiformi, vertice erecto, centrali, subpeltacide alba, concentricè rugoso-striatâ, marginis rufis prominensibus lineisque numerosis interruptis pallide 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. *Croc. testâ pileiformi, subiregulari, tenui, livido-fusâ, 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>Potillo</i>), Chennitz | V. | 15 | serratum, (<i>Calyp.</i>), Broderip | VIII. | 24 |
| auritum, <i>Reeve</i> | VI | 17 | seutellatum (<i>Calyp.</i>), Gray | I. | 7 |
| concrematum, <i>Reeve</i> | VII | 23 | sepidum (<i>Calyp.</i>), Broderip | VII | 22 |
| corrugatum, <i>Carpenter</i> | III | 8 | spectrum, <i>Reeve</i> | V. | 15 |
| cruciatum, <i>Louiseck</i> | V | 14 | spinosum (<i>Calyp.</i>), Sowthby | IV | 10 |
| cruciosum, <i>Reeve</i> | II | 5 | striatum (<i>Calyp.</i>), Say | VI. | 16 |
| imbriatum (<i>Calyp.</i>), Broderip | III | 9 | tenne (<i>Calyp.</i>), Broderip | I. | 2 |
| lyatum, <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 |
| radicans (<i>Calyp.</i>), Broderip | VI | 18 | violaceum, <i>Carpenter</i> | V | 12 |
| ragosum (<i>Calyp.</i>), Deshayes | II | 4 | | | |

ERBAFCUM

Plate I—The descriptions of Species 1 and 2 should be transposed.

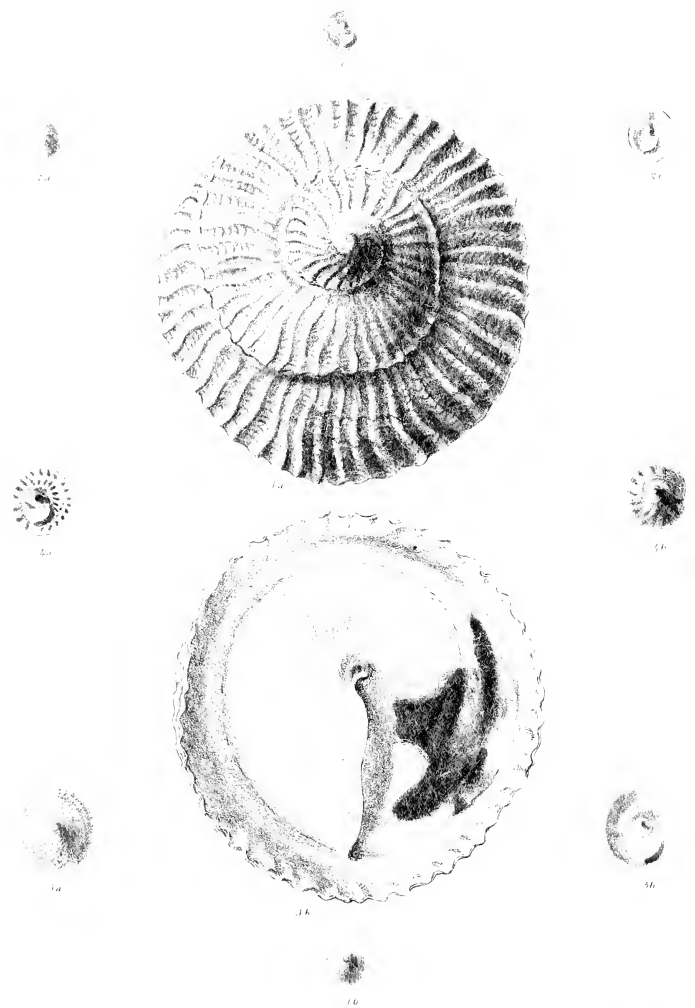
MONOGRAPH

OF THE GENUS

TROCHITA.

Yet no strength nor joy unhalloved goes
If you still remember what the Lord has done

Psalm 124.



TROCHITA.

PLATE I

Genus TROCHITA, Schumacher.

Linea genalis, in orbem subspiralis. Appendix interna non cœtica est, effusa, sive trochoides, ad marginem producta.

Shell conical, sometimes subspiral. Internal appendage somewhat lateral and effused, sometimes trochoid, reaching to the margin.

After assigning to the genera *Collyptera*, *Crautobolus*, 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. rubens spirata*, and *clapnotum*, the internal appendage reaches to the margin; in others, as in *T. conica*, *subeffusa*, and *S. ovata*, the appendage is comparatively small, lateral, and effused. These last constitute Dr Gray's genus *Glycyces*.

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. Cuning.)

TROCHITA POCULUM. *Troch. testâ orbiculari, pileiformi, cœtica elata; alba; appendice internâ spirata septiformi.*

THE LITTLE-CUP TROCHITA. Shell orbicular, cup-shaped, vertex raised, white internal appendage spirally septum-shaped.

Hab. Valparaiso, Cuning.

A small, rounded, cup-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. Cuning.)

TROCHITA PELLUCIDA. *Testâ orbiculari, et de pressis-culâ, subtiliter concentricè striatâ, cœtica centrali; albâ, plicatâ; appendice internâ subdepresso-septiformi.*

THE TRANSPARENT TROCHITA. Shell orbicular, rather depressed, finely concentrically-striated, vertex central; lid white, transparent; internal appendage rather depressly septum-shaped.

Hab. Philippine Islands: Cuning.

A small, livid, transparent species, rather depressed.

Species 3. (Fig. a, b. Mus. Cuning.)

TROCHITA RADIANUS. *Troch. testâ orbiculari, subdepressâ costis subradialis indigne radiatâ; albâ, intus verticibus castaneo-nigro lineatâ, cœtica epidermoide intus cœta fibrôsâ indatâ; subtus conicâ, appendice internâ porcupinâ, Trochiformi.*

THE RADIATING TROCHITA. Shell orbicular, rather depressed, rayed throughout with slightly noduliferous; whitish, sometimes stained within with chestnut-black, covered without with a yellowish fibrous epidermis; concave beneath, internal appendage very large, Trochium-shaped.

Crepidula radianus, Anm. sans vert. vol. vii. p. 626

Trochus radianus, Lamarek.

Infundibolus radianus, Sowerby.

Collyptera Peruviana, Deshayes.

Testa juvenis, *Trochita cœtica*, Carpenter.

Hab. Valparaiso: Cuning.

This species, described originally by Martini, among others of the group, without any specific name, under the general head of *Lepas*, was placed by Lamarek in his genus *Trochus*. M. Deshayes was the first to perceive its true affinity.

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

TROCHITA ATERSEA. *Troch. testâ orbiculari, tenuiculâ, concentricè tenuistriatâ, cœtica subspirali; pellucidâ, intus rufâ maculatâ; appendice internâ laterali, appressâ effusâ.*

THE SPINELESS 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. Lycœm Nat. Hist. vol. v. p. 443.

Hab. Panama (under stones, at low water-mark); C. B. Adams.

Of semitransparent substance, conspicuously spotted in the interior with red spots; but of a somewhat fainter and less clouded character than those in *T. conica*.

TROCHITA.—PLATE I

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

TROCHITA SINENSIS. *Troch. testâ orbiculari, depresso-conicâ, extus tenuisquamosâ, squamis sæpe obsolete, intus lævigatâ, nitidâ; pediculis-oblâ; appendice internâ laterali, appressâ effusâ*

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 lævigata, Lamarck.

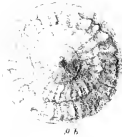
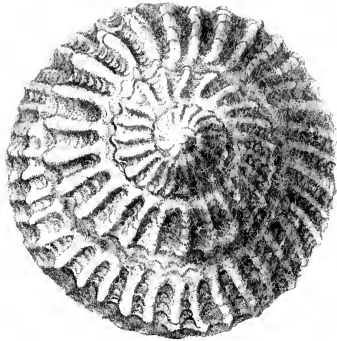
Calyptrea Sinensis, Deshayes.

Patella auricula, Da Costa.

Patella nigraris, Philippi.

Hab. Southern shores of Britain, the Channel Islands, and the Mediterranean.

Excepting *Pileopsis Hungaricus*, this is the only British species of the family *Calyptreidae*. It is peculiar in being finely scaled, but the scales become more or less obsolete with age.



TROCHITA.

PLATE II.

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

TROCHITA LICHEN. *Troch. testâ depressâ, concentricè rube plicatâ, levigatâ; albâ, subdiaphanâ, obscure fusco-rufa punctatâ et lineatâ; appendice laterali 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.

Cyprus, a lichen, Broderip, Proc. 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. Siccasis*. 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, nudique prominèssè acutè spinoso-spinulatâ, apice spiritaliter mammillari; albâ, subdiaphanâ, ferruginoso-rufa lineatâ; appendice laterali, appressè effusâ.*

THE SUBREFLECTED TROCHITA. Shell obtusely convex, concentrically irregularly plicated, everywhere prominently minutely spine-scalded, apex spirally mammillary; 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-scalded 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 radialibus longitudinalibus s. subradialibus, distinctissimis nudique plicatâ, sublimè convexâ; purpureo-cinereo et castaneo cinctâ; appendice laterali 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.

Calyptra spirata, Forbes, Proc. Zool. Soc. 1850, p. 270.

pl. 11. f. 1 a, b.

Potella trochiformis? Chemnitz

Hab. Gulf of California.

This fine species may be chiefly recognized from its congener *T. rotatus* 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, costis radialibus corrugato-lineatâ, intus concavâ, appendice spiritali septiformi; albâ, ferruginoso cinctâ.*

THE WRINKLED TROCHITA. Shell orbicularly conical, cup-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. rotatus*, but the shell is more deeply concave.

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

TROCHITA SOLIDA. *Troch. testâ conicâ, crassiusculâ, concentricè rube striatâ; cinereo-albâ, apice purpureâ, intus fusco-purpureâ; 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.

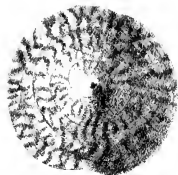
A solid, conical, chalk-white species, with a purple apex, brown-purple in the interior, with a bright, diaphanous-white, lateral appendage.



1.



2.



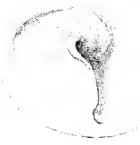
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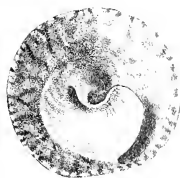
4.



5.



6.



7.



8.



9.



10.

TROCHITA.

PLATE III.

Species 11. (Mus. Brit.)

TROCHITA CALYPTROFORMIS. *Troch. testâ orbiculato-convexâ, subspirali, apice annulifidâ; albi vel lutescente, epidermide tenuissimâ indutâ, intus albâ, purpuraceo-roseâ interdum tinctâ, appendice septiformi, intusculâ.*

THE CALYPTRO-SHAPED TROCHITA. Shell orbicularly convex, rather spiral manillary at the apex, white or yellowish, covered with a hairy epidermis, interior white, sometimes tinged with purple-flesh, appendage septum-shaped, rather broad.

Trochita Calyptroformis. Lamarck. *Mém. sans vert.* vol. vii. p. 627.

Calyptrois Lamarckii. Deshayes.

Crepidula lamarckii. 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 conoïd. pileiformi, bispinulâ, apice annulifidi, concavo-umbil. Viresco-purpuraceo tinctâ, intus ferrugineo-purpureâ, appendice sublaterali, ad marginem ventralium reflectâ.*

THE MAMILLARY TROCHITA. Shell conical, cap-shaped, smooth, manillary at the apex; horny-white, stained with livid-purple, interior rust-purple, appendage rather lateral, reflected at the central margin.

Calyptrois maculata. Broderip, *Trans. Zool. Soc.* vol. i. p. 201, pl. 28, f. 5.

Hab. Island of Moore, 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 conoïd, subspirâ, foveâ, tenuissimâ, concentricè striatâ, apice subconconvata; concavo-umbil. rufa pulchre umbilicâ et irregulariter maculatâ, appendice laterali diaphano-umbil. laterali, effusa.*

THE CONICAL TROCHITA. Shell conical, somewhat cap-shaped, rather than concentrically rufly-striated, rather pointed at the apex; flesh-white, clouded and irregularly spotted throughout with red, internal appendage diaphanous-white, lateral, effused.

Calyptrois conica. Broderip, *Trans. Zool. Soc.* vol. i. p. 202, pl. 28, f. 7.

Hab. Nipixapi and Salango, West Columbia (attached to stones, 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 orbiculato-depressa apice subannulifidi, concentricè rufâ striatâ; viridi albâ, epidermide densâ fibrôsâ indutâ, intus charvâi appendice umbil. septiformi, parva reflectâ.*

THE LITTLE-SHIELD TROCHITA. Shell orbicularly depressed rather manillary at the apex, concentrically rufly 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 orbiculato, convexâ, subspirali, concentricè striatâ; albiâ, epidermide densâ fibrôsâ indutâ, intus concavâ, albâ, rufibus annulicâ, appendice umbil. septiformi, eia 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'Astrolabe*, 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. Swainsoni*.

MONOGRAPH

OF THE GENUS

A N O M I A.

Why, love, thou swore not in my mother's womb
And, for I should not deal in her soft laws,
She did exempt frail nature with some herbs
To shroud man's arm up like a wretched shield
To make an cavern mountain on my back
Where sits deformity to mock my body
To disproporcion me in every part
Like to a chinos
But to command, to check, to scolden such
As are of better person than myself
I can add colours to the chameleon,
Change shapes with Proteus!

Shakespeare



ANOMIA.

PLATE I.

Genus ANOMIA, *Linnaeus*

Testa plerumque subrotunda, inequaliter, irregulariter, affixa, interea solidissima, saepeque tenuissima, hincina. Valva inferior posita, prope cordinae umbonalia perforata et emarginata, perforatione rimula oblongata subulnosa liberè inserta. Valva superior rariore, squamata-lamellata, striata aut costata, imple squamulis acuminatis tribus, subulnatis tribus. Cardo edentatus, ligamentis brevis ad sulcistium affixo.

Shell generally orbicular, irregular, affixed, sometimes rather solid, mostly very thin, hyaline. Lower valve flat, orbicularly perforated and notched near the hinge, perforation freely filled with a sub-calcareous plug of adhesion. Upper valve convex, squamately laminated, striated or ribbed, with three subulnar 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. Cuvier'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. umbilis*, 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. Cuvier, 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. Cuvier.)

This shell represents *Anomia polyaropsis* 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. philippina*, and I incline to concur in that opinion.

Species 2. (Fig. a, b, Mus. Cuvier.)

ANOMIA PLEXILISUM. *Anom. testa orbiculari, subopacè albâ, floricante, verris marginem pellucidum-umbonâ, valvâ inf. rure lucis flexuoso-costatâ.*

THE LULL-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. Cuvier.)

ANOMIA ELYROS. *Anom. testâ subquadratâ, cuplâ, opacissimâ, radiatâ dense rugosostriatâ, striis irregularibus; operculatâ, valvâ superiore ferruginea tricatâ, inferiore cinereo-albâ.*

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, *Proc. 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. testâ ralei superiore concavâ, levis, hyalinâ, flexuoso-radiatâ, radiis interruptè rugosis; umbone subproeminente, acuto; pallido-albâ, auro-rufescente-luteâ.*

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. Karachi, 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. testâ suborbiculari, irregulariter concentricè laminatâ, radiatim livatâ, liris linearibus, confertis; valvâ superiore hyalino-albâ, auro-*

rufescente-luteâ, inferiore rufescente-albâ, concentricè striatâ.

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.

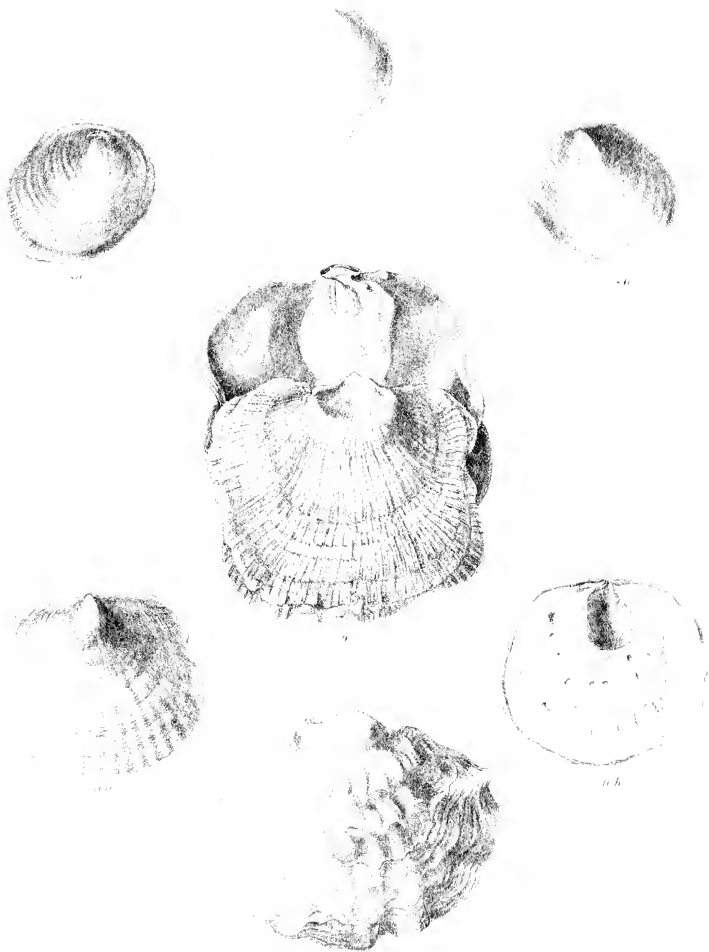
Species 6. (Mus. Cuming.)

ANOMIA PLACENTELLA. *Anom. testâ subquadrato-ovata, tenuissimâ, concentricè albâ, liris submalleatâ, albâ.*

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 AMYBLES. *Anom. testā suboblique ovata, leviter
laevigata, argenteo-albā planicosta, umbone subarata.*

THE SILVERY ANOMIA. Shell somewhat oblong-ovate,
thin, smooth, silvery-white, rather flat, umbo sharp.
GRAY, Proc. 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, Mus. Cuming.)

ANOMIA HUMPHREYSIANA. *Anom. testā obliquē ovata,
sublaevigata, concentricē striata, superio-ribus cupreo-
effuseis et umbone acuta.*

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 Sowbry.
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. 11 a, b, and
which is known to be from the same old collection, ap-
pears to be another example of the species, ribbed from
the surface of its place of attachment.

Fig. 9. (Mus. Cuming.)

This shell, taken in Mr. Cuming's collection *A. striat-*
ata, Gray, does not appear to have been described under
that name, and proves to be a younger state of *A. cygnes*,
figured in the preceding Plate.

Species 10. (Fig. a, c, Mus. Cuming.)

ANOMIA CYGNETUM. *Anom. testā subarata alba, radiatim
concentricis-costulata, costis sublaevibus, pallidioribus.*

*circa umbonem irregularis-areolata, marginē acuto; costis
infimis coccineis.*

THE SHIELD ANOMIA. Shell somewhat orbicular, radi-
ately concentrically ribbed, ribs rather obsolete, trans-
parent-white, orange-brown around the umbo, um-
bo sharp; lower valve greenish.

GRAY, Proc. Zool. Soc. 1849, p. 115.

Hab. Mouth of the Zangze Keang River, China. Fort

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 per-
fectly smooth.

Species 11. (Mus. Cuming.)

ANOMIA PPHIPIUM. *Anom. testā subobliquē orbiculari,
plus minus irregulari, subē striata, subarata, fimbri-
ato-squamata, intracostis-alba.*

THE SADDLE ANOMIA. Shell somewhat obliquely orbic-
ular, more or less irregular, rudely striated, some-
times fimbriately scaled; yellowish-white.

LINNEUS, Syst. Nat. p. 1159.

Anomia electrica, cepa, and squamata, Linneus

Anomia punctata, Chemnitz.

Anomia fluitans, rugosa, and cygniformis, Gmelin

Anomia unguiculata, subarata, and pediciformis, Pol.

Anomia cygniformis, Maton and Rackett.

Anomia cinctica and striatula, Bruguière.

Anomia pygiformis and siccicola, Lamarek.

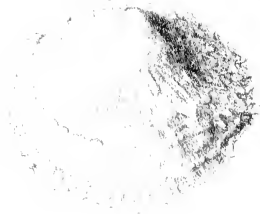
Anomia polypiformis and scutellata, Philippi.

Anomia tubularis, Turton.

Anomia cocculata, 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 *Ano-*
mia 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 cir-
cumstances of its habitation.



ANOMIA.

PLATE III.

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

ANOMIA ACHILUS. *Anom. testâ valde ovata, lævigatâ, purpureâ vel aurantato-strigatâ, calicâ inflexâ concentricè subquadrato-striatâ, superiore rennerâ, versus umbonem tumido-inflexâ.*

THE ACHILUS ANOMIA. Shell broadly ovate smooth, purple or golden-yellow, lower valve concentrically somewhat scaly-striated, upper valve convex, tumidly hooked towards the umbo.

GRAY, *Proc. Zool. Soc.* 1849, p. 116

Hab. Kurachee, 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 LARBUS. *Anom. testâ subquadrato-ovata, tenui, argenteo-oblâ, lævigatâ, radiatâ flexuoso costatâ, costis ferè obsolete; calicâ inferiore argineo-aurulâ.*

THE WAVED ANOMIA. Shell somewhat squarely ovate, thin, silvery-white, smooth, radiately flexuously ribbed, ribs almost obsolete, lower valve bright veruigris-blue.

GRAY, *Proc. Zool. Soc.* 1849, p. 117

Hab. Payta, Peru; Cuming.

A fine faintly-waved shell, of a delicate silvery-white, veruigris-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. Hemaphysium*, 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.)

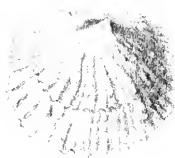
ANOMIA ADAMAS. *Anom. testâ ovata, versus marginem laminatâ, rufè costatâ, costis angustis, valde irregularibus, crassa marginem conspicuè macronatis, vixitè rufescente-aurantiâ.*

THE ADAMANT ANOMIA. Shell ovate, laminated towards the margin, rudely ribbed, ribs narrow, very irregular, conspicuously pointed towards the margin: bright reddish-orange.

GRAY, *Proc. Zool. Soc.* 1849, p. 115

Hab. Lord Hood's Island, Galapagos (attached to *Leicuba marginifera* 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.



16a



16b



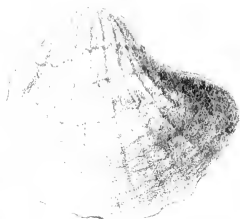
16c



16d



16e



16f



16g

ANOMIA.

PLATE IV.

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

ANOMIA LAMPE. *Anoma, testâ subobliquè quadratâ, radii, radialia costatâ, costis interruptis, irregularibus, flexuosis, crassis marginem maculato-spinulosis; testâ, hyalino-albâ, valvâ superiore verrucato-lunata vel auriculato-rayâ, inferiore argenteo-ovata, lineâ*

THE SCUM ANOMIA. Shell somewhat obliquely square, rude, radially ribbed, ribs interrupted, irregular, flexuous, prickly-scalded 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-colored species are irregularly wrinkled, and sometimes prickly-scalded.

Species 17. (Mus. Cuming.)

ANOMIA STRIGILIS. *Anoma, testâ obliquè ovatâ, radii flexuoso-laminatâ et pectinè riter postlunato-costatâ; intercostis, 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 habits. The peculiar pectinate festooned ribs, protruding from the laminae, 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. *Anoma, testâ subobliquè ovatâ, valvâ superiore tumido-incurvâ, radialia costatâ, costis rugosis, regularibus, subdistansibus, crassis antero-convexo-oblatis; hyalino-albâ, plus minus auriculo-ovata, valvâ inferiore planulatâ, concentricè laminato-striatâ, argenteo-ovoidi.*

THE FLUTED ANOMIA. Shell somewhat obliquely ovate, upper valve tumidly incurved, radially 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. tuberosa*.

Species 19. (Mus. Cuming.)

ANOMIA FACILIS. *Anoma, testâ suborbiculari, convexo-planâ, radialia flexuoso-costatâ, costis subdistansibus, plus minus obsolete nodulatis; fuscovirentâ.*

THE SWARTHY ANOMIA. Shell somewhat orbicular, convexly flattened, radially flexuously ribbed, ribs rather distant, more or less obsoletely nodded; fuscous-bronze.

GRAY, Pro. Zool. Soc. 1849, p. 117.

Hab. Tumbes, Peru; Cuming.

A very characteristic fuscous-bronze shell, rather flat, with faintly nodded ribs radiating in a flexuous manner at unequal distances from a rather sharply defined umbo.



ANOMIA.

PLATE V.

Species 20. (Mus. Cuming.)

ANOMIA ZOCELEATA. *Anom. testâ oblongo-ovata, tenui, sublimbo, radiâ subrotata striatâ, striâ plus minus orbiculatâ, spinatâ.*

THE PRICKLY ANOMIA. Shell oblong-ovate, thin hyaline-ulate, radiately striatâ, striae more or less prickly-ended.

Müller. Zool. Danon. Prodrom. p. 249.

Loc. *Strait of Turton.*

Hab. Britain and North Atlantic generally.

A small lachne species, more or less rayed with minute, white, prickly scales.

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

ANOMIA ANONIS. *Anom. testâ suborbiculatâ, tenui, planatâ, limbo, limbo subrotatâ.*

THE ANONIS ANOMIA. Shell nearly orbicular, thin, flattened, smooth, yellowish-white.

GRAY, *Proc. Zool. Soc.* 1849, p. 146.

Hab. Jamaica; Gosse.

Of very simple form, without any trace of sculpture.

Species 22. (Mus. Cuming.)

ANOMIA PINOSA. *Anom. testâ oblique-ovata, tenui, albidâ, recessu umbonâ radiatâ, spinosa-spinatâ.*

THE SPINED ANOMIA. Shell obliquely ovate, thin, whitish, radiately spine-scalded 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. testâ latè ovata, planâ, solidiorâ, sub-regulari, radiatâ costâ, costis subdistantibus, obtusè squamatis, retea superiore ricescentiâ, limbo c. radiâ sub-aurantiâ linctâ, retea inferiore pallidâ, arenâ subrotatâ.*

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.)

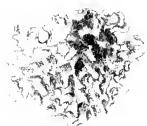
ANOMIA DRYAS. *Anom. testâ suborbiculatâ, tenui, plumbosâ, hyalineâ, retea superiore intus extusque radiatâ limbo, limbo subdistatibus; umbone subproductâ.*

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, *Proc. Zool. Soc.* 1849, p. 115.

Hab. Singapore (on dead shells, in coarse sand and gravel at a depth of about ten fathoms); Cuming.

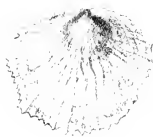
The upper valve of this species is curiously distinguished by a radiation of rather distant lines, which are seen both within and without.



26



27



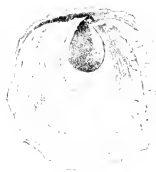
28



29



30



31



32

ANOMIA.

PLATE VI.

Species 25. (Mus. Cuming.)

ANOMIA MALLEATA. *Anom. testâ suborbiculari, tenui, sinuâ, hyalino-albâ, rugoso-areolata, umbone subproeminente, ovato.*

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, lobiscaute, copiosè ramoso-areolata.*

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 SACERA. *Anom. testâ sinuocenturi, hyalinobalbâ, circo umbonâ pallidè rufescente-ovata, collectâ lirata, liris redditis, 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. Bantay.

In colour this species approaches *A. ephippium*, from China, but the shell has a sculpture natural to it, which is quite distinct.

Species 28. (Mus. Cuming.)

ANOMIA ALECTUS. *Anom. testâ subtrigona orbiculari, irregulari, setulosâ, setulosâ, circo umbonâ azule flexuoso-areolata, denudè concâ et c. luviantè; calceâ superiore rufescente-areolata et porphyrescente, inferiori cærescente.*

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, Proc. Zool. Soc. 1849, p. 115.

Hab. Bay of Guayaquil; Hindis

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. epepe*.

Species 30. (Mus. Cuming.)

ANOMIA FIDENAS. *Anom. testâ ovata, tenui, planolata, lored, orbidi; calceâ inferiore concentricè lamellato-striatâ.*

THE SMOOTH ANOMIA. Shell ovate, thin, flat, smooth, whitish; lower valve concentrically laminately striated

GRAY, Proc. 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 *Perna*.

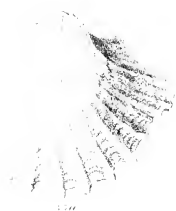
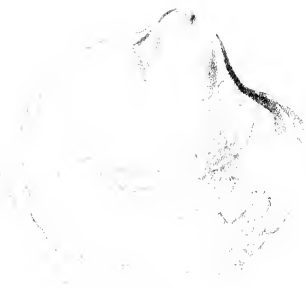
Species 31. (Mus. Cuming.)

ANOMIA ARGYRITES. *Anom. testâ subquadrato-subovata tenuissimâ, diaphanâ, argyreo-albâ, circo umbonâ subobovata, unigue radiatâ striatâ.*

THE SILVER-FOAM ANOMIA. Shell somewhat squarely orbicular, very thin, diaphanous, silvery-white, faintly colored 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 ovata, sinuosi, trunc. posticâ, costâ scute, irreg. venter impresso-angulata.*

THE SINUOUS ANOMIA. Shell obliquely ovate, sinuous, thin, transparent, irregularly roughlay milked.

Loc. Proc. Zool. Soc. 1849, p. 117.

Hab. Bay of Canes, West Columbia, Cuming.

On a thin sinuous growth and reddish colour.

Species 33. (Fig. 2, 3, Mus. Cuming.)

ANOMIA TUBA. *Anom. testâ subtriang. truncatâ, tumidâ, concentricè, intus, exasperatâ.*

THE TUBULAR ANOMIA. Shell somewhat triangularly orbicular, tumid, everywhere smooth, deep bronze-purple on the surface.

A richly purple-stained species from the Sandwich Islands, with a smooth apparently worn aspect.

Species 34. (Mus. Cuming.)

ANOMIA METALICA. *Anom. testâ subtriangulo-ovata, trunc. impresso-angul. concentricè obscurè concentricè striatâ, concentricè, intus, laevi.*

THE METALLIC ANOMIA. Shell somewhat triangularly ovate, thin, rather compressed, concentrically absolutely lamellately 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. subtriangula*.

Species 35. (Fig. 3, 4, Mus. Cuming.)

ANOMIA COSTATA. *Anom. testâ subtriang. subhemisph. recessus umbonæ triangulari acutâ, concentricè orbiculatâ, radiatâ costâ, costæ per umb. stiles, squamatis, radiâ inferiore concentricè lacunatâ, concentricè striatâ.*

THE RIBBED ANOMIA. Shell somewhat triangularly orbicular, tumidly incurved towards the umbo, semi-transparent-white, radially ribbed, ribs prominent, scaled; lower valve concentrically lamellated, veridigridate.

Hab. ———?

This characteristic species appears to be ribbed independently of its piece of attachment, and the ribs are largely scaled.

Species 36. (Mus. Cuming.)

ANOMIA LUCERNA. *Anom. testâ trigono-globosâ, trunc. rotundè inflatâ, radi. irregulari, recessus umbonæ triangulari, subrotundè squamato-lacunatâ.*

THE LAMP ANOMIA. Shell triangularly globose, thin, very inflated, rude, irregular, tumidly incurved towards the umbo, absolutely squamately lamellated.

Hab. ———?

A thin, inflated, *Terobriantula*-shaped species, of very irregular growth, obscurely scale-lamellated.



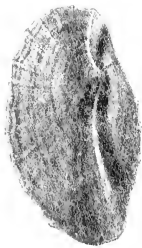
17



19



20



22

ANOMIA.

PLATE VIII

Species 37. (Fig. 37, 38, and 39) of *Genus of Mos. Cuming.*

ANOMIA ENIGMatica. *Valva* *testis* *obovata*, *marginata* *superiore* *plus* *minus* *obliqua*, *con* *hinc* *con* *radialis* *linea*, *hinc* *distans*, *superiore* *in* *pro* *radialis*, *infusis* *impro* *pro* *radialis*, *hinc* *in* *pro* *radialis* *and* *obliqua*.

FIG. 37, 38, 39.—*ANOMIA.* Shell of *Anomia* (Fig. 37) upper valve oblique, sometimes smooth, sometimes radiately ridged, ridges distant, warty or almost obsolete, deep coppery-purple, lower valve spherically white or yellowish.

Anomia *disparitarsis*, Chenuitz, *Verh. Zool. Bot. Gesell. Jena*, 19: 1, 1949 and 1950.

Anomia *rosea*, Gray.

Anomia *pariboracis*, Jones.

Hab. Philippine Islands (in *Mangroves* and *Algae* Patches, 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* *disparitarsis* of Chenuitz. When attached to narrow stems or sticks the shell assumes an elongated boat form, as in the variety *A. inaeformis*, Jones, 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 caved with more or less obsolete warty ridges. It is found on piles of wood forming the wharves at Singapore. The shells represented at Fig. 37, 38, 39, 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 *Algae* Patches, growing between tides on the shores of the Philippine Islands, some adhering to the leaves, as in Fig. 39.

ANOMIA.

| | | | | | |
|---------------------------------------|------|----|---------------------------------------|------|----|
| <i>Acheus, Gray</i> | III | 12 | <i>mallecta, Reece</i> | VI | 25 |
| <i>Acutes, Gray</i> | V | 21 | <i>margoridacea, Poli</i> | II | 11 |
| <i>aculeata, Muller</i> | V | 20 | <i>matillica, Reece</i> | VII | 34 |
| <i>adamus, Gray</i> | III | 15 | <i>maeforcus, Jones</i> | VIII | 37 |
| <i>anigmatica (Billiau), Chemnitz</i> | VIII | 37 | <i>nobilis, Reece</i> | V | 23 |
| <i>Alectus, Gray</i> | VI | 28 | <i>pacilus, Gray</i> | IV | 19 |
| <i>amabeus, Gray</i> | II | 7 | <i>pectiniforcus, Poli</i> | II | 11 |
| <i>argyrus, Reece</i> | VI | 31 | <i>placutella, Reece</i> | I | 6 |
| <i>cedata, Reece</i> | I | 5 | <i>plendunium, Reece</i> | I | 2 |
| <i>cepa, Linnæus</i> | II | 11 | <i>polyanthes, 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>cythreica, Guélin</i> | II | 11 | <i>ramosa, Reece</i> | VI | 26 |
| <i>cyathiforcus, Maton and Backet</i> | II | 11 | <i>rosæ, 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>electricæ, Linnæus</i> | II | 11 | <i>scabrilla, 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>fideus, Gray</i> | VI | 30 | <i>squandata, Linnæus</i> | II | 11 |
| <i>florosa, Guélin</i> | II | 11 | <i>striata, Gray</i> | II | 9 |
| <i>formicæ, Lamarek</i> | II | 11 | <i>stentata, Brugnière</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>Impe, Gray</i> | IV | 16 | <i>salcata, Poli</i> | II | 11 |
| <i>liquida, Reece</i> | VA | 18 | <i>tabularis, Turton</i> | II | 11 |
| <i>larius, Gray</i> | III | 13 | <i>Tyria, Reece</i> | VII | 33 |
| <i>lacerna, Reece</i> | VII | 36 | <i>valeræ, Brugnière</i> | II | 11 |

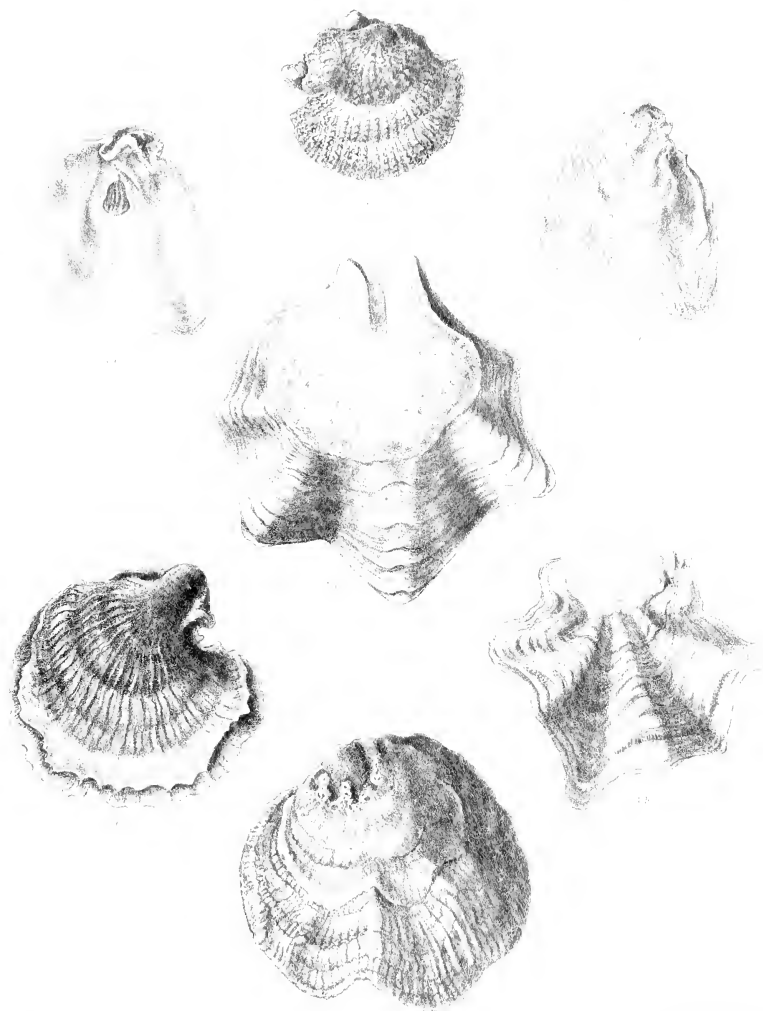
MONOGRAPH

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, haphy, in vibration and rebound,
Life answering life across the vast profound
In full sympathy, by a common grace!"

Elizabeth Barrett Browning



PLACUNANOMIA.

PLATE I.

Genus *PLACUNANOMIA*, Broderip.

Testa subquadratis, irregularis, tenuis, interdum solidiuscula, plerumque complanata, carinae interna deorsum duobus divaricatis convergentibus in valvâ inferiore, sulcis duobus ligamentiferis in superiore. Valva inferior propè carinam fissurata est trigono-perforata, perforatione carinae descendente, tendinea adhesionis adossata intertendina inter teste lasius inserta, adnata. 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 *Armonia*. 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 *Armonia*, 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. Broderip.)

PLACUNANOMIA ECHINATA. Plac. testâ subrotundâ, carinâ superiore radiatim echinato-squamulâ; albâ, medio fusco lineâ.

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, carina concentricè irregulariter correptâ, 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.

Indolensans decipiens, Philipp.

Hab. West Indies: Broderip. Havana; Philipp.

Of rude growth and solid substance, with the orifice small.

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

PLACUNANOMIA CUMINGII. Plac. testâ subrotundâ, obscurè argentosalubâ, circumcinctâ, complanatâ, margine plicatâ, plicis marginè angulatis.

CUMING'S *PLACUNANOMIA*. Shell somewhat rounded, obscurely silvery-white, tinged with green, smoothly plicated at the margin, plaits 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.

August, 1859.

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. Cuning.)

PLACUNANOMIA ZEALANDICA. *Plac. testâ suborbiculari, albidi, complanata, valvâ superiore radiatim lirata. Iris subdestantibus; intus ceruleo-virescente.*

THE ZEALAND PLACUNANOMIA. Shell nearly orbicular, whitish, smooth, upper valve radiately ridged, ridges rather distant; interior blue-green.

Annua Zealandica, in Dieffenbach's *New Zealand*, vol. ii. p. 261.

Hab. New Zealand.

A semitransparent blue-green shell, radiated with fine ridges, which are obsoletely sealed, and rather irregular.

Species 5. (Mus. Cuning.)

PLACUNANOMIA FOLIATA. *Plac. testâ subdiaphanâ, sub-circulari, rubi, subfoliata; sordide albi, intus splendent. valvæ superioris medio purpureo-fusco: perforatione naziana.*

THE FOLIATED PLACUNANOMIA. Shell subdiaphanous, nearly circular, rude, rather foliate; dead-white, shining within, middle of the upper valve purple-brown; orifice very large.

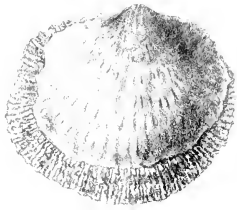
BRODERIP, *Proc. Zool. Soc.* 1834, p. 2.

Hab. Isle of Muerte, 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.



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PLACUNANOMIA.

PLATE II.

Species 6. (Fig. a, b, c, Mus. Cuning.)

PLACUNANOMIA IONE. *Plac. testâ suborbiculari, albâ, laminae, interioris marginis spiculis parvis elongatis instructis, perforatione centrali; utraque creata.*

THE VIOLLET PLACUNANOMIA. Shell nearly orbicular, whitish, laminae, edge of the laminae furnished with small elongated processes, perforation very large; interior green.

GRAY, Proc. 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 laminae, appears to be an abraded 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. Cuning.)

PLACUNANOMIA MACROCRISMA. *Plac. testâ ovata, solidiuscula, radiâna rotâe plicato-costata, costis eadê irregularibus, hic illic taudis et bifurcatis; luteo-ventrali; perforatione centrali.*

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.

Annuaire de la Soc. Deshayes, Revue Soc. Curieuse 1853, Mag. de Zool. 1841, pl. 34.

Hab. Onalaska, Cuning. 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. Cuning.)

PLACUNANOMIA HARFORDI. *Plac. testâ ovali vel obliquè transversâ, concentricè striatâ fimbriato-squamulâ, squamulis orbicatis; perforatione centrali.*

HARFORD'S PLACUNANOMIA. Shell ovate or obliquely transverse, concentrically delicately fimbriately sealed, smooth 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. Cuning.)

PLACUNANOMIA PATELLIFORMIS. *Plac. testâ suborbiculari, convexâ vel planâ, radiatâ, lirata et striatâ, luteo-roseâ; apice non marginali.*

THE DISH-SHAPED PLACUNANOMIA. Shell nearly orbicular, convex or flattened, radiately ridged and striated, interior greenish, apex removed from the margin.

Annuaire paleontologique, Linnæus, Syst. Nat. p. 1152.

Annuaire squamulâ, Gmelin.

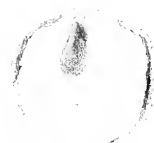
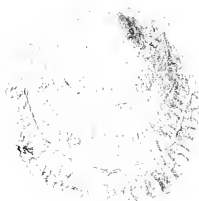
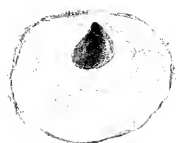
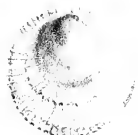
Annuaire radiatâ, Gmelin.

Ostrea striata, Pulteney.

Annuaire striata, Loven.

Hab. Northern shores of Europe (at a depth of from five to fifty fathoms). Forbes and Hauley.

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 GOULDII. *Plac. testâ subte quercivali, radiatim minute spinuloso-ridgata, striis arcuato-angulatis, subtile albi, intus fulvovirescens fuscâ.*

THE GOULD PLACUNANOMIA. Shell somewhat triangularly ovate, radiately minutely scale-striated, striae prickly-sealed, dead-white, interior yellowish-brown.

Fig. 9. ————

A small species, not referable to any hitherto described, to which Mr. Cuming is indebted to Dr. Gould, of Boston, United States.

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

PLACUNANOMIA ALDOI. *Plac. testâ orbiculari, apice vix angustâ, costâ superoâ planâ, radiatim coarseguta-costâ, costis subnatis; ririvates albi.*

THE LOY 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 CEPHO. *Plac. testâ orbiculari, radiatim minute striatâ, radique raris-angulatis; pallidâ albi; perforatione subapicâ.*

THE CRYSTAL PLACUNANOMIA. Shell orbicular, radi-

ately minutely striated, everywhere wrinkled under a glass; transparent-white; orifice rather large.

GRAY, *Pro Zool. Soc.* 1849, p. 124.

Hab. California.

A very delicate transparent species, curiously wrinkled and marked throughout.

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

PLACUNANOMIA AUSTRALICA. *Plac. testâ transverse orbicâ, radiatâ tenuiteratâ, iris minute mucosulo-spinulosis; pallidâ albi, intus ceruleo-virescens.*

THE AUSTRALIAN PLACUNANOMIA. Shell transversely ovate, radiately finely ridged, ridges minutely prickly sealed, transparent-white, interior blue-green.

Hab. Australia.

Finely sculptured throughout with minutely sealed ridges.

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

PLACUNANOMIA ABNORMALIS. *Plac. testâ orbiculari, radiatâ divaricato-ridgata, iris prominens radiatâ minute spinulosis; subtile albi, intus ririvates.*

THE ABNORMAL PLACUNANOMIA. Shell orbicular, radiately divaricately ridged, ridges prominently waved minutely sealed; dead-white, interior greenish.

GRAY, *Pro Zool. Soc.* 1849, p. 124.

Hab. West Indies.

The radiating ridges of this species have a prominently wrinkled character.

PLACUNANOMIA.

| | Plac. | | States. | | | Dis. | Spores. |
|-------------------------------------|-------|--|---------|--|------|------|---------|
| abnormalis, <i>Gray</i> | III. | | 14 | Gouldi, <i>Recept</i> | III. | | 10 |
| alope, <i>Gray</i> | III. | | 11 | Harfordi, <i>Recept</i> | II. | | 8 |
| Australica, <i>Recept</i> | III. | | 13 | iona, <i>Gray</i> | II. | | 6 |
| capio, <i>Gray</i> | III. | | 12 | macrochisma (<i>Amata</i>), Deshayes | II. | | 7 |
| Cunningi, <i>Recept</i> | I. | | 3 | pat-illiforme (<i>Amata</i>), Linnæus. | II. | | 9 |
| costata, <i>Boissier</i> | I. | | 4 | rufus, <i>Recept</i> | I. | | 2 |
| foliata, <i>Recept</i> | I. | | 5 | Zelandica, <i>Gray</i> | I. | | 4 |

