

















# CONCHOLOGIA ICONICA:

OR,

## ILLUSTRATIONS

OF THE

## SHELLS OF MOLLUSCOUS ANIMALS.

VOL. X

CONTAINING MONOGRAPHS OF THE GENERA

AMPELLARIA.  
CANCELLARIA.  
LITTORINA.  
SOLETELLINA.

CAPSA.  
CAPSELLA.  
SANGUINOLARIA.  
PSAMMOBIA.  
PSAMMOTELLA.

MYTILUS.  
MODIOLA.  
LITHODOMUS.  
AVICULA.

BY

LOVELL AUGUSTUS REEVE, F.L.S., F.G.S.,

ONE OF THE HONORARY MEMBERS OF THE NATURAL HISTORY SOCIETY OF WÜRTEMBERG AND OF THE FACULTY OF NATURAL  
HISTORY OF NEW YORK

And never, since the middle summer's spring,  
Met we on hill, in dale, forest, or mead,  
By paved fountain, or by rusky brook,  
Or on the beach'd margin of the sea,  
To dance our ringlets to the whistling wind,  
But with thy breaths thou hast disturb'd our sport."

*Shakespeare.*

LONDON:

LOVELL REEVE, HENRIETTA STREET, COVENT GARDEN.

1858.



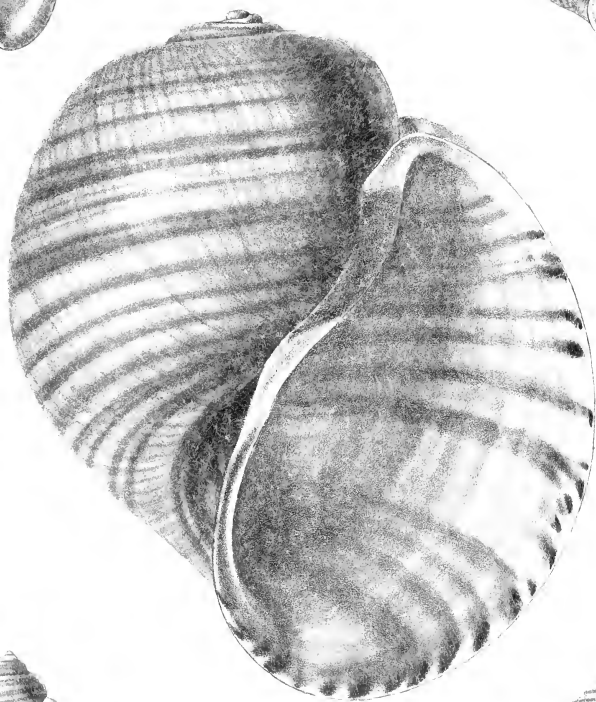
MONOGRAPH  
OF THE GENUS  
A M P U L L A R I A.

He looks around into the varied field  
Of Nature, and though, perchance, compared  
With those whose unobscured glitters to his sight  
Gild the delightful scenery of his own,—  
Pies o'er the mountains, and the valleys lies  
And the resplendent rivers." *Onyx*.









# AMPULLARIA.

## PLATE I.

### GENUS AMPULLARIA, Lamarck.

*Testis* spiræ vel orato, plus minus umbilicata, raro imperforata; epidermide crassiusculâ olivaceâ intata, spiræ rotundâ modo simplici, modo caudiculatâ, instructis plus minus costis, levigatis; operculis subnullis, labris simplicibus. Operculum nunc carinatum nunc calcaratum, aperturæ orbiformis.

Shell globose or ovate, more or less umbilicated, rarely imperforated, covered with a rather thick olive epidermis, suture of the spire sometimes simple, sometimes channelled, whorls more or less ventricose, smooth; aperture rather large, lip simple. Operculum sometimes horny, sometimes calcareous, closing the aperture.

The scabrous hue and obvious similarity of form, destitute of any indication of sculpture, of the shells of *Ampullaria*, have led to this genus being very much neglected by the collector; and their unattractive range of habitation, in swampy marshes, ponds, and rivers, has not been very inviting to the traveller. A few ardent naturalists, including among the foremost M. D'Orbigny and Mr. Brady on the banks of the great rivers of Bolivia, Dr. Spix in Brazil, M. Caillaud in Africa, Mr. Yates and Mr. Wallace at the rivers Marañon and Amazon, MM. Sillé and Giesbrecht in Mexico, Mr. Dyson in Honduras, Mr. Benson in India, and Mr. Lagard and Mr. Tempieman in Ceylon, have directed their energies since Lamarck's time to *Ampullaria*-hunting; and the result is the following ample series of a hundred and thirty species, nearly two-thirds of which are new to science, and of which scarcely a dozen were known to the author of the 'Histoire des Animaux sans Vertèbres.' A monograph of the genus was published by Dr. Philippi in 1851, in M. Kuster's edition of the 'Conchylien Cabinet' of Chemnitz, but it is founded on very imperfect materials.

The species of *Ampullaria* are exceedingly well-defined, though bearing great general resemblance, and, what is not usual with molluscs affecting such habitats, many of them are stained at the aperture with brilliant colour. The animal, as is now sufficiently well known, is of an amphibious nature, possessing a double system of respiration, which adapts it to breathe either air or water, according to the requirements of the place of its habitation, which may be at one time flooded and at another dry. It is peculiarly observed originally by Mr. Gualding at the Confines Islands, was noticed first in detail by M.

Caillaud on his return from his expedition to the Nile. On placing some of his *Ampullaria* in a basin of water M. Caillaud unexpectedly found many of his specimens come to life, and M. D'Orbigny discovered the existence of a distinct pulmonary apparatus.

So many new species of *Ampullaria* have been catalogued by recent travellers in comparatively few localities, that it is more than probable the genus abounds to a much larger extent than we have at present any idea of. It does not, however, exist in the great rivers of North America or of North-temperate Europe, and is peculiar to warm and tropical latitudes.

### Species 1. (Mus. Cuvier.)

**AMPULLARIA CUPRINA.** *Amp. testis subpentagono-globosa, tenuicostâ, papillâ angulatoa dilatatâ, spiræ rotundâ, costâ, instructis saepeâ intâ planatis, ad angulâ rotundatâ, dentis plumbeo-roseis; labris ovatis, calcaribus tertiâ et fasciatâ; aperturâ ovatâ, labris simplicibus.*

**THE COPPER AMPULLARIA.** Shell somewhat sparingly globose, rather thin, deeply angularly umbilicated, spire obtusely exerted, whorls broadly flattened round the upper part, rounded at the angle, then flatly convex; yellowish, stained and banded with red-brown; aperture ovate, lip simple.

*Hab.* — ?

A light, somewhat inflated species, with the whorls broadly rotundately angled round the upper part.

### Species 2. (Mus. Cuvier.)

**AMPULLARIA SPIXII.** *Amp. testis globoso-turbidatâ, subnulliter umbilicatâ, spirâ subnullâ, instructis costâ, levigatis, levibus, subangustis, saepeâ dentibus levibus, fasciâ tertiâ costis levibus dilatâ; operculis circularibus, labris simplicibus.*

**SPIX'S AMPULLARIA.** Shell globosely turbidated, rather largely umbilicated, spire rather obtuse, whorls rounded, smooth, rather narrow, slanting round the upper part; yellowish, encircled with dark chestnut bands; aperture circular-ovate, lip simple.

D'ORBIGNY, Voy. dans l'Amérique Mérid., p. 376, pl. 52, f. 5.

*Hab.* River Parana, South America.

A fine turbinate species, of *Cyclostoma*-like growth, conspicuously banded and lineated with dark chestnut upon a yellowish ground.

Species 3. (Mrs. Cuming.)

AMPULLARIA GIGAS. *Amp. testâ ventricoso-globosâ, angustâ, angustâ umbilicatâ, spirâ brevissimâ, immersâ, suturâ angustâ profunde canaliculatâ, anfractibus convexis; rivovente-olivaceâ, fasciis angustis pallidâ olivaceis cingulatâ; aperturâ oblongo-ovata, foveâ nunciativâ-intescente, corneolente fasciatâ, labro simplici, intus nigro-maculata.*

THE GIANT AMPULLARIA. Shell ventricosely globose, very large, narrowly umbilicated, spire very short, immersed, suture narrowly deeply channelled, whorls convex; greenish-olive, encircled with narrow faint-olive bands; aperture oblong-ovate, interior orange-yellow, blue-banded, lip simple, black spotted within.

SPIN. Testacea Fluvialia Brasiliensis, p. 1. pl. 1. f. 1.  
*Loc.* Solomon's River, Brazil.

This truly fine species is quite remarkable for its bold ventricose growth and immersed channelled spire.

Species 4. (Mrs. Cuming.)

AMPULLARIA CORNUCOPIA. *Amp. testâ oblongo-ovata, obliquè productâ, angustâ umbilicatâ, spirâ brevi, sub-acuminatâ, anfractibus rotundatis, lacinâs nitentibus, rivovente declivibus; livido-fuscescente, lineis fasciisque caps angustis cingulatâ; aperturâ ovata, subamplicata, effusa.*

THE CORNUCOPIA AMPULLARIA. Shell oblong-ovate, obliquely produced, narrowly umbilicated, spire short, rather acuminated, whorls rounded, smooth, shining, slanting round the upper part: livid-brown, encircled with narrow red bands and lines: aperture ovate, rather large, effused.

*Loc.* Columbia.

Of light substance, elegantly obliquely convoluted, with the aperture boldly effused.

Species 5. (Mrs. Cuming.)

AMPULLARIA GRASSA. *Amp. testâ subquadrate-globosâ, crassa, subperforatâ, spirâ brevissimâ, obtusâ, anfractibus convexis, lacinâs, rivovente declivibus; rivovente lutescente, fasciis lutescentibus subdistantibus cingulatâ; aperturâ ovata, labro columellari calloso, appresso, albo.*

THE THICK AMPULLARIA. Shell somewhat squarely globose, thick, perforated, spire rather short, obtuse, whorls convex, smooth, slanting round the upper part; dull yellowish, encircled with rather distant chestnut bands and lines: aperture ovate, columellar lip callous, appressed, white.

SWAINSON, Zool. Illus. (First Series), vol. iii. pl. 191

*Loc.* *crassa*, Spix.

*Ampullaria Otterlei*, Deshayes.

*Abelona umbilicata*, Spix.

*Ampullaria Brownii*, Jay.

*Loc.* Brazil.

Chiefly distinguished by its white, callous columellar lip, which is appressed over the plane of the umbilicus.

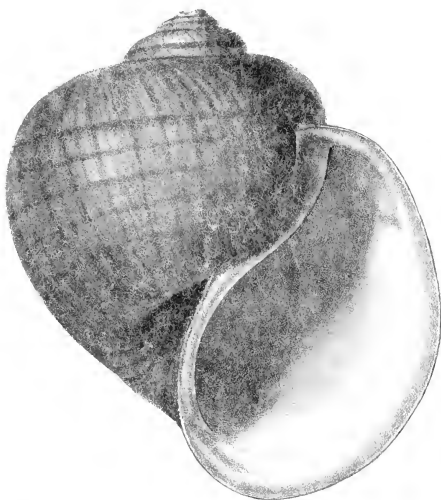




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*Am. Mus. Nat. Hist.*



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*Am. Mus. Nat. Hist.*

# AMPULLARIA.

PLATE II.

Species 6. (Mus. Cuming.)

AMPULLARIA PIGLIANI. *Amp. testâ ovali, truncata, spirâ subrotundâ, angustâ et convexâ, ad suturam subdepressâ, laevibus; umbilicis angustis; apertura ovali; peristoma nigro-olivaceo, lineâ fuscâque rufâ circumscritâ.*

THE GRAY AMPULLARIA. Shell ovate, rather thin, spire low, whorls convex, rather depressed at the suture, smooth; umbilicus large; aperture ovate; pale olive-colored, encircled with red lines and bands.

SEIX. Test. Fluv. Bras. pl. t. f. l.

*Amp. ultrâ lumbis, var.* Spix.

IIb. Pl. II.

Spix appears to have figured this species under the above name, and to have regarded it afterwards as a variety of his *A. lumbis*. It is well distinguished by its light texture, largely umbilicated ground, and red-banded coloring upon a pale olivaceous ground.

Species 7. (Mus. Cuming.)

AMPULLARIA REYNOYANA. *Amp. testâ ovate, spirâ subpressâ, laev. angustâ et convexâ, spirâ subdepressâ, deinde rotundâ, laevibus; umbilicis subrotundis; apertura ovali, laevi orbis, linea rufâ et alba, fuscâ-spadiçâ, lineâ rufâ et rufâ-pallidâ.*

THE RED-LINE AMPULLARIA. Shell ovate, spire rather prominent, whorls rather depressed at the upper part, then convex, smooth, umbilicus covered; aperture ovate, exterior lip reflexed; white, fulvous-green, variously encircled with red lines.

IIb. —?

It is conspicuously encircled with red lines upon a fulvous-green ground, as in the preceding species, but distinguished by the absence of a visible umbilicus and by the more numerous convexities of the spire.

Species 8. (Mus. Cuming.)

AMPULLARIA NIGRILIS. *Amp. testâ ovata, spirâ planâ, spirâ depressâ, angustâ, truncatâ, spirâ convexâ, laevibus; umbilicis subrotundis; apertura ovali, peristoma nigro-olivaceo, lineâ rufâ et rufâ-pallidâ, lineâ fuscâ et rufâ-pallidâ.*

THE NOBLE AMPULLARIA. Shell somewhat pyriformly globose, spire rather depressed, whorls ventricose round the upper part, smooth; umbilicus rather deep; aperture pyriformly ovate, very large; dark olive, externally horny, obscurely black-banded, lip deep burnt red.

IIb. River Marañon; Mr. Yates.

This fine species, of a pyriformly globose shape, with a dark olive-horny exterior, is painted within the lip with a peculiar deepened burnt red.

Species 9. (Mus. Cuming.)

AMPULLARIA PALUDINOIDES. *Amp. testâ globosâ, spirâ molliori, angustâ et rotundâ, ad suturam subdepressâ, laevibus; umbilicis subrotundis; apertura ovali, Lipsi flavicinctâ.*

THE PALUDIN-LIKE AMPULLARIA. Shell globose, spire middling, whorls rounded, a little depressed at the suture, smooth; umbilicus nearly covered; dull olive, lip yellowish.

CHRISTOPORI and JAN, Mus. Berlin. Philippj in Koster, Coneh. Cab. Voy. p. 27, pl. t. f. 4.

IIb. —?

Distinguished by its plump, rounded form and dark olive colour, the lip being coloured in a characteristic manner, with pale yellow.

Species 10. (Mus. Cuming.)

AMPULLARIA COMICA. *Amp. testâ subglobosâ, spirâ subdepressâ, angustâ et convexâ, truncatâ, nitidâ, laevibus; umbilicis subrotundis; apertura ovali, labris olivaceo-fuscis; peristoma albo-nigricante.*

THE COMICAL AMPULLARIA. Shell subglobose, spire rather prominent, whorls convex, smooth, shining, umbilicus covered; aperture ovate, lip severely reflected; fulvous olive, lip whitish.

WOOD,

IIb. —?

The spire has a more prominently convoluted aspect than in the preceding species, from the last whorl rather more than usually descending next the aperture. In colour the shell is of a lighter fulvous olive.

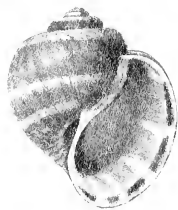




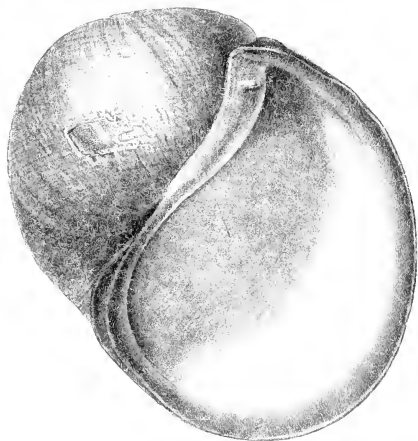




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# AMPOLLARIA.

PLATE III.

Species 11. (MUS. CUMING.)

MUSCARELLI'S AMPOLLARIA. *Am. test. globoso-turbinate, suture undecim-nubila, costatocostata, umbilicus rimosus, n. imperforatus, n. sulcatis submarginis; aperture ovate, gibbo-widgreen, lined throughout with dark olivaceous bands.*

THE GREAT AMPOLLARIA. Shell globosely turbinated, suture 11-lined, smooth, channelled, whorls rounded, smooth; umbilicus rather large; aperture ovate; gibbo-widgreen, lined throughout with dark olivaceous bands.

It is a little larger than the preceding species, with channelled suture, of globose form, originally from Borneo.

Species 12. (MUS. CUMING.)

AMPOLLARIA PILEATA. *Am. test. globoso, suture scabrit, n. imperforata, n. sulcata, n. costata, n. rimosa, n. imperforata, n. sulcatis, n. submarginis; aperture ovate, gibbo-widgreen, lined throughout with dark olivaceous bands.*

THE SMALL AMPOLLARIA. Shell globose, suture short, rather immersed, whorls convex, suture deeply rounded at the upper part, smooth; umbilicus rather small; aperture ovate, gibbo-widgreen, beaded and beaded with olive.

Hab. Borneo.

On the same species of insect as the preceding species, smaller, with the suture shorter and slightly immersed.

Species 13. (MUS. CUMING.)

AMPHICLYMEA MEXICANA. *Am. test. obli-convex, suture 11-lined, n. imperforata, n. sulcata, n. costata, n. rimosa, n. imperforata, n. sulcatis, n. submarginis; aperture ovate, gibbo-widgreen, lined throughout with dark olivaceous bands.*

THE BROAD-SHOULDERED AMPOLLARIA. Shell globosely convex, suture short, suture flately immersed, whorls convex, swollen, spirally chisel-like, rounded, rugose, umbilicus covered over; aperture very large,

linear-ovate; dark brownish; aperture produced to livid.

SOBERON Tankerville Catalogue, Apr. p. 1.  
*Ampollaria Xeranthos*, D'Arbogast.  
Hab. Mouth of the Rio Uruguay; P. D'Arbogast.

Distinguished from all other species of the genus by its remarkably expansive Natica-shaped growth, and purple-brown interior.

Species 14. (MUS. CUMING.)

AMPOLLARIA SOBERRIMA. *Am. test. globoso, suture scabrit, n. imperforata, n. sulcata, n. costata, n. rimosa, n. imperforata, n. sulcatis, n. submarginis; aperture ovate, gibbo-widgreen, lined throughout with dark olivaceous bands.*

THE DEER AMPOLLARIA. Shell globosely turbinated, suture rather prominent, suture channelled, whorls rounded, immersed at the upper part, smooth; umbilicus deep; aperture ovate, lip scarcely reflected, reddish-olive, up chestnut.

SWAINSON, *Zoological Illustrations*, vol. iii, pl. 143.  
Hab. Rio de la Plata.

Of regular rotundately turbinate growth, smooth, and chestnut-rust-coloured.

Species 15. (MUS. CUMING.)

AMPOLLARIA HONDURASENSIS. *Am. test. ovato, suture 11-lined, n. imperforata, n. sulcata, n. costata, n. rimosa, n. imperforata, n. sulcatis, n. submarginis; aperture ovate, gibbo-widgreen, lined throughout with dark olivaceous bands.*

THE HONDURAS AMPOLLARIA. Shell ovate, ventricose, suture rather short, sharp, whorls flately slanting round the upper part, then convex, rather attenuated towards the base, wrinkle-striated, umbilicus narrow; aperture pyriformly ovate, up rather expanded, ash-olive, ranging obscurely painted with linear bands.

Hab. Honduras; D'Arbogast.

A neatly rounded species of a peculiar shining livid ash-olive colour, obscurely painted with linear bands.



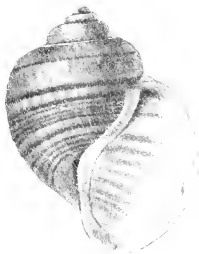
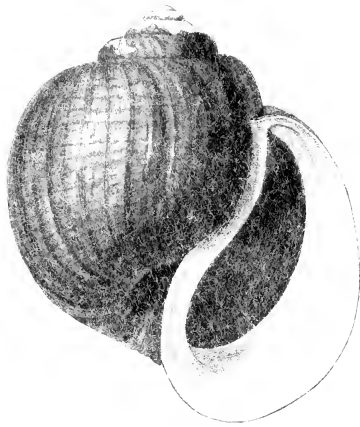




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### Species 16. (Mus. Cuming.)

**AMPULLARIA AUTUMNALIS.** *Asp. testâ turbinatâ, spirâ subpinnatâ, anfractibus rotundatis, ad sativam depressiventris, obscure spiralliter foveolatis, fasciis utroque-labris, interstitiis malleatis et striatis; umbilico subangulo; apertura rotundato-ovata, labro subexpanso; oliveâ, costis-ocrea reflexâ.*

**THE AUTUMNAL AMPULLARIA.** Shell turbinated, spire rather prominent, whorls rounded, rather depressed at the suture, obscurely spirally corded, cords irregular, with the interstices malleated and striated; umbilicus rather large; aperture rotundately ovate, lip rather expanded; olive, stained with chestnut-red.

*Hab.* —?

The whorls of this species are somewhat more than usually rounded, while they are concentrically sculptured with obscure cords, irregular and wrinkle-like in parts, with the interstices malleated and striated. The outer surface is partially covered on the olive ground with a glistening chestnut-red coating.

### Species 17. (Mus. Cuming.)

**AMPULLARIA VENETUS.** *Asp. testâ globosâ, subcentricâ, spirâ brevissimâ, acutâ, anfractibus superâ declivibus, decalve convexis, nodisque malleatis et minutè crenulato-striatis; umbilico medio-recto; apertura lunato-pyriformi, parviscintâ, labro expanso; luteo-virescenti, versus apicem pallidiorè, labro lutescente.*

**THE SEA-GREEN AMPULLARIA.** Shell globose, subventricose, spire rather short, sharp, whorls slanting round the upper part, then convex, everywhere malleated and minutely crenulately striated; umbilicus middling; aperture lunar-pyriform, rather small, lip expanded; yellowish-green, paler towards the apex, lip yellowish.

*Hab.* —?

A pale sea-green species, with the surface rather largely malleated throughout and minutely crenulately striated, the lip and columella being of a rather conspicuous pale yellow tone.

### Species 18. (Mus. Cuming.)

**AMPULLARIA CIRCUS.** *Asp. testâ glaucâ-turbinatâ, sublobatâ, spirâ brevi, plerumque plus minus convexâ, anfractibus compressè rotundatis, ad sativam depressiventris, irregulariter corrugato-striatis, et expanso-rotundatis, umbilico amplo, profundi; apertura pyriformi, labro columellari reflexo; latevirenti-olivâ, epidermide crassi crumâ olivaceâ intâ.*

**THE FLUENT AMPULLARIA.** Shell globose turbinated, rather solid, spire short, generally more or less

eroded, whorls compressly rounded, a little depressed at the suture, irregularly wrinkle-ridged and rugosely reticulated; umbilicus large and deep; aperture pyriform, columellar lip reflected; yellowish-white, covered with a thick horny olive epidermis.

*Verita arcens*, Muller. Hist. Verm. p. 174.

*Aspallaria arcens*, Deshayes.

*Aspallaria rugosa*, Lamarek.

An eadem. *Aspallaria dolina*, Philippi.

An testa junior. *Aspallaria leucostoma*, Swainson.

*Hab.* Trinidad; Cuba.

This well-known species is at once recognized by its compressly rounded form and stout wrinkle-ridged horny epidermis, mostly eroded at the apex.

### Species 19. (Mus. Cuming.)

**AMPULLARIA PUNCTICULATA.** *Asp. testâ subpyriformi-ovata, ventricosâ, spirâ medio-rectâ, anfractibus superâ laevibus, versus basin attenuatis, laevigatis, sub lente punctulatis; umbilico angustissimo; apertura oblongo-ovata, labro columellari reflexo; olivaceo-virescenti, fasciis angustis circumdatis obscure pictâ, labro arcuato-reflexo.*

**THE PUNCTURED AMPULLARIA.** Shell somewhat pyriformly ovate, ventricose, spire middling, whorls swollen round the upper part, attenuated towards the base, smooth, finely punctured beneath the lens; umbilicus narrow; aperture oblong-ovate, columellar lip reflected; olive-green, obscurely painted with narrow green bands, lip orange-red.

SWAINSON, Zoological Illustrations, vol. iii. p. 143.

*Hab.* —?

Of a very characteristic pear-like ovate form, with a warm orange-red lip.

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

**AMPULLARIA VEXILLUM.** *Asp. testâ ovata, latevirenti, ventricosâ, anfractibus convexis, superâ subplanulatis, laevigatis, sub lente punctulatis; umbilico angustissimo; apertura pyriformi-ovata, expansâ, labro columellari reflexo; olivaceo-virescenti, fasciis siccâ rotè circumdatis circumdatâ, labro reflexente.*

**THE FLAG AMPULLARIA.** Shell ovate, rather thin, ventricose, whorls convex, rather flattened at the upper part, smooth, finely punctured beneath the lens; umbilicus narrow; aperture pyriformly ovate, expanded, columellar lip reflected; olive-green, encircled with dark green bands, lip tinged with red.

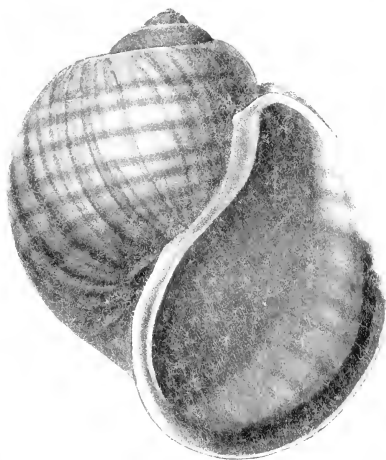
*Hab.* —?

Very closely allied to the preceding species, but of a less pear-shaped form, with the whorls more flattened round the upper part.









# AMPULLARIA.

PLATE V.

Species 21. (Mus. Cuming.)

**AMPULLARIA LIVESOYNS.** *Sup. testâ globosâ, subventricosa, spirâ brevi, angustibus (nervi) d. elevatis, deinde convexis, haecibus, ut altilis; umbilico profundi, subrotundâ, apertura parvifurcata-ovata, limbo-ovato, pube villosa in cavate, foveis obscure-rotundis circulatâ.*

**THE LIVED AMPULLARIA.** Shell globose, somewhat ventricose, spire short, whorls tumidly slanting round the upper part, then convex, smooth, shining; umbilicus deep, rather contracted; dull fulvous, encircled with livid ash, fulvous next the suture, encircled with narrow olive-green bands.

A rather tumid species, with the whorls full and slanting to the upper part, of a fulvous livid colour, encircled with narrow greenish bands. In substance rather firm, with a smooth shining surface.

Species 22. (Mus. Cuming.)

**AMPULLARIA LATTE CL.** *Sup. testâ globosâ, sub-rosâ d. spirâ brevissima, angustibus rotundatis, haecibus; umbilico profundi, sub-rotundâ; apertura ovata, foveis pallide obscure-rotundis circulatâ, apertura ovata, limbo sub-reflexo.*

**LATTE'S AMPULLARIA.** Shell globose, rather solid, spire rather short, whorls rounded, smooth, umbilicus deep, rather contracted; dull fulvous, encircled with pale olive green bands; aperture ovate. Lip slightly reflected.

*Hab.*—Colm. Guadalupe.

Of a similar form to the preceding species, and of the same substance and shining exteriorly.

Species 23. (Mus. Cuming.)

**AMPULLARIA HAUSTROM.** *Sup. testâ compressè ovata, convexissâ d. ere rotundatâ, spirâ parvâ, subumbrata, angustibus ad suturam in spirâ cæmicalatis, deinde convexis; ovulâ ovata, striatâ et unilobâ; foveis minutis pallide obscure-rotundis circulatâ; apertura parvifurcata-ovata, p. rev. l. foveis limbo-rotundis.*

**THE SCOP AMPULLARIA.** Shell compressly ovate, very ventricose, scarcely umbilicated, spire small, rather

immersed, whorls impressly channelled at the suture, then convex; dull olive, striated and unilobed, encircled with narrow faint green bands; aperture pyriformly oblong, very large; livid purple in the interior.

*Hab.* River Marañon, Brazil.

This fine species belongs to the same type as *A. livesoyns* larvae, D'Orbigny, from La Plata. Its chief points of difference consist in being less distinctly umbilicated, and in having a much larger and more expanded aperture.

Species 24. (Mus. Cuming.)

**AMPULLARIA MELANOCHELLA.** *Sup. testâ globosâ-rotundatâ, spirâ mediocri, angustibus superâ planatis, deinde convexis; umbilico angustâ, profundi; apertura ovata; foveis obscure-rotundis, foveis angustis pallide obscure-rotundis circulatâ, limbo nigro.*

**THE BLACK-LIPPED AMPULLARIA.** Shell globosely tumidated, spire middling, whorls flattened round the upper part, then convex; umbilicus large, deep aperture ovate, olive-green, encircled with narrow faint reddish-brown bands, lip black.

*Hab.*—?

A very characteristic species, rather depressly flattened next the suture, with the lip conspicuously black-stained within the aperture.

Species 25. (Mus. Cuming.)

**AMPULLARIA COLUMBIENSIS.** *Sup. testâ globosâ, tenuicollâ, convexâ, spirâ subplanatâ, angustibus convexis, haecibus, micatibus; umbilico parvo, contracto, apertura ovata, subangustâ; foveis ovato-rotundis, foveis pallide obscure-rotundis circulatâ.*

**THE COLUMBIA AMPULLARIA.** Shell globose, rather thin, ventricose, spire rather flat, whorls convex, smooth, shining; umbilicus small, contracted; aperture ovate, rather large; fulvous ash, encircled with faint olive-green bands.

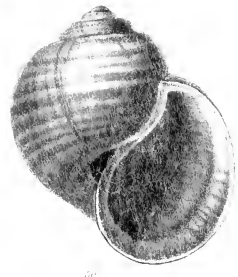
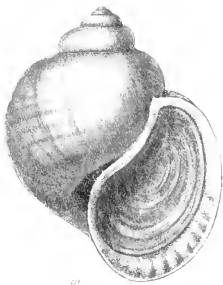
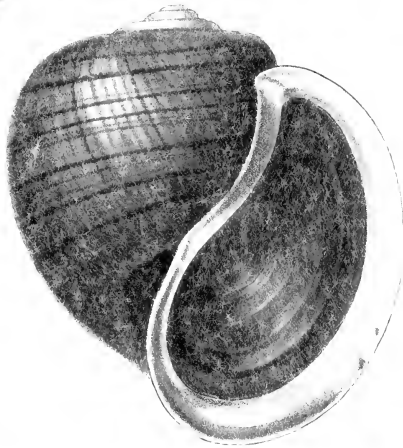
*SGWEBBY, MS. Mus. Cuming.*

*Hab.* Chiriqui, Veragua.

Of light globose structure, with only a small umbilicus, fulvous in tone of colour, encircled with faint olive-green bands.







# AMPULLARIA.

PLATE VI.

Species 26. (Mus. Cuming.)

AMPULLARIA LIZONIA. *Amp. testâ globosâ, tumidiusculâ, tenui, anfractibus superioribus compressis, dentibus rotundatis, lacinibus longitudinaliter obsolete sulcatis; umbilico parvo; apertura ovata, subcapitata; fulvovirescente-livacea, obscure fasciata.*

THE LIZON AMPULLARIA. Shell globose, rather swollen, thin, whorls flatly impressed round the upper part, then rounded, smooth, longitudinally obsolete grooved; umbilicus small; aperture ovate, rather large; fulvous-olive, obscurely banded.

Hab. Calanang, Island of Luzon, Philippines; Cuming.

A light globosely turbinate shell, rather impressed next the suture, obscurely longitudinally grooved on the subordinate whorl.

Species 27. (Mus. Cuming.)

AMPULLARIA LAYARDI. *Amp. testâ subcompressâ globosâ, stragatilis superiorâ angustâ plus-inpressis, dentibus rotundatis, lacinibus nitidibus; umbilico parvo, contracto; apertura ovata; albâ, epidermide obscure olivacea isolatâ.*

LAYARD'S AMPULLARIA. Shell rather compressly globose, whorls narrowly flatly impressed round the upper part, then rounded, smooth, shining; umbilicus small, contracted; aperture ovate; whitish, covered with an olive-horay epidermis.

Hab. Colombo, Ceylon; Layard, Templeman.

Of a more compressly globose form than the preceding species, with a conspicuous horay epidermis.

Species 28. (Mus. Cuming.)

AMPULLARIA YATLUI. *Amp. testâ globosâ, spirâ brevi, parva exsertâ, anfractibus superioribus compressis, dentibus planioribus, longitudinaliter irregulariter striatis; umbilico subangusto, profundo; apertura pyriformi-ovata, pinnatâ, lobis reflexis; fulvovirescentibus, lineis*

*argeis intercostatibus angustâ, lobis rufis circumscissis distinctis.*

YATES'S AMPULLARIA. Shell globose, spire short, but little exserted, whorls rather impressed round the upper part, then flatly convex, longitudinally irregularly striated; umbilicus rather narrow, deep; aperture pyriformly ovate, very large, lip reflected; fulvous-chestnut, encircled at unequal distances with black lines, lip tinged within with reddish-orange.

Hab. River Marañon; Yates.

This interesting species is of a peculiar fulvous-chestnut colour, encircled at unequal distances with black lines. The aperture is unusually large, tinged next the lip with a warm reddish-orange.

Fig. 29. (Mus. Cuming.)

The specimen here figured is the Ceylon form of *A. Lizonia*, represented above it at Fig. 26, from the Philippine Islands. It is rather more flatly impressed round the upper part of the whorls.

Species 29. (Mus. Cuming.)

AMPULLARIA PORPHYRO-TOMA. *Amp. testâ oblongo-globosâ, spirâ subprominentâ, anfractibus superioribus dentibus concavis, lacinibus nitidibus; umbilico subangusto, profundo; apertura ovata, subeffusâ; circumscissâ, obscure multifasciatâ, apertura nigricante.*

THE PURPLE-MOUTH AMPULLARIA. Shell oblong-globose, spire rather prominent, whorls slanting round the upper part, then convex, smooth, shining; umbilicus rather narrow, deep, aperture ovate, rather effused; ash-olive, faintly many-banded, aperture rather blackish.

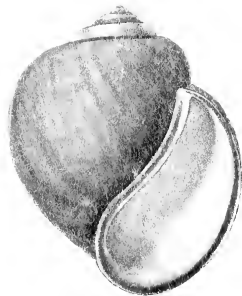
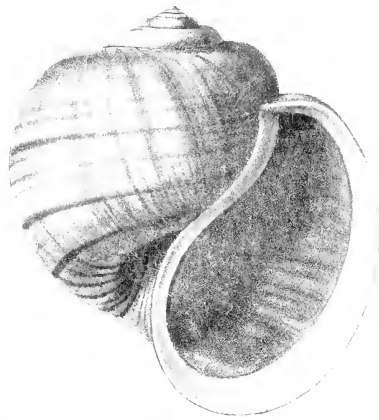
Hab. ———?

Of a rather oblong turbinate form, and shining ash-olive hue, the whorls being gently slanted next the suture.









# AMPULLARIA.

PLATE VII.

Species 31. (Mus. Cuming.)

**AMPULLARIA FLAVILIS.** *Amp. testa rose nudiorella, unguis*  
*testae* *subrotunda, spiralis, subnuda, operculum*  
*obovatum, aperturâ subtriangulo-ovata, circum-*  
*scriptâ, plicata, aperturâ pyriformi-ovata,*  
*aperturâ subglobosa, plicata.*

**THE BROWN AMPULLARIA.** Shell scarcely umbilicated, globose, tumid, spire rather short, whorls convex, rather longitudinally striately seriated; greenish-brown, narrowly beaded; aperture pyriformly ovate, rather lip slightly colored, yellowish.

Hab. Mexico.

Very distinct from the last, but obviously distinct in form, and in shell, with the spire less exerted, and more convex than in the last.

Species 32. (Mus. Cuming.)

**AMPULLARIA MALAYANA.** *Amp. testa quasi tumida,*  
*rose nudiorella, spira subnuda, unguis testae*  
*convexus, unguis nudiorella, unguis testae*  
*subrotunda, spiralis, subnuda, operculum*  
*obovatum, aperturâ subtriangulo-ovata, circum-*  
*scriptâ, plicata, aperturâ pyriformi-ovata,*  
*aperturâ subglobosa, plicata.*

**THE PINK-RED AMPULLARIA.** Shell globose, tumid, convex, umbilicated, spire rather acuminate, whorls convex, everywhere conspicuously malbeated; livid olive; aperture pyriformly ovate, lip rather colored; bowsh within.

Mus. Coll. Becc. p. 22, pl. 10, f. 11.

*Amullaria malayana*, Philippi.

Hab. Mexico.

This species is clearly not a variety of *A. cyanea*. Although the malbeated surface predominates in a manner to color it a distinguishing character, the shell is distinguished otherwise, by peculiarities of form.

Species 33. (Mus. Cuming.)

**AMPULLARIA SPICATA.** *Amp. testâ globosa, spira*  
*subnuda, unguis testae convexus, unguis testae*  
*subrotunda, spiralis, subnuda, operculum*  
*obovatum, aperturâ subtriangulo-ovata, circum-*  
*scriptâ, plicata, aperturâ pyriformi-ovata,*  
*aperturâ subglobosa, plicata.*

**THE BANGS-OR AMPULLARIA.** Shell globose, deeply umbilicated, spire rather short, somewhat tumid.

wh. fls channelled at the summit, then convex, greenish, banded with lines, covered with an olive-brown epidermis; aperture pyriformly oblong, very large lip deep vermilion within.

Philipp. Zeitschrift für Natur, 1849, p. 18. Kuster. Conch. Cal. *Amp.*, p. 40, pl. III, f. 2.

Hab. Zamboara.

A fine glaucous species, covered with a rather fine, five-horny epidermis, deep vermilion-stained within the lip, convoluted early on a vertical plane.

Species 34. (Mus. Cuming.)

**AMPULLARIA BLOOD-SOUTHED.** *Amp. testa globosa, un-*  
*guis testae subrotunda, spiralis, subnuda, unguis*  
*testae convexus, unguis testae subrotunda, spiralis,*  
*subnuda, operculum obovatum, aperturâ subtriangulo-*  
*ovata, circumscriptâ, plicata, aperturâ pyriformi-*  
*ovata, aperturâ subglobosa, plicata.*

**THE BLOOD-SOUTHED AMPULLARIA.** Shell globose, rather solid, rather deeply umbilicated, spire short, rather convex, rather flat at the upper part than convex, everywhere peculiarly wrinkle-malbeated; livid dyed-lake; aperture blunt-oblong lip deep blood-red within.

Hab. Peru.

Of an intense dark livid colour, almost black, with the surface peculiarly wrinkle-malbeated, and the lip stained within with deep blood-red.

Species 35. (Mus. Cuming.)

**AMPULLARIA POLITA.** *Amp. testa oblongo-globosa, un-*  
*guis testae subrotunda, spiralis, subnuda, unguis*  
*testae convexus, unguis testae subrotunda, spiralis,*  
*subnuda, operculum obovatum, aperturâ subtriangulo-*  
*ovata, circumscriptâ, plicata, aperturâ pyriformi-*  
*ovata, aperturâ subglobosa, plicata.*

**THE POLISHED AMPULLARIA.** Shell oblong-globose, somewhat acorn-shaped, almost imperforated, spire slightly acuminate, whorls convex, peculiarly shining; olive-green; aperture pyriform, rather narrow.

Deshayes, Encyclopédie Méthodique, V. 5, vol. n. p. 31.

Endes. *Amullaria polita*, Deshayes.

Hab. Port Jackson, Australia.

Of an oblong-globose glandiform shape, with a pedicel dark, shining, olive-green surface.



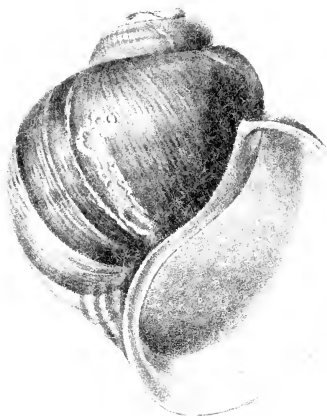




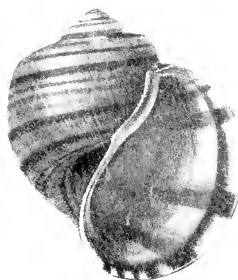
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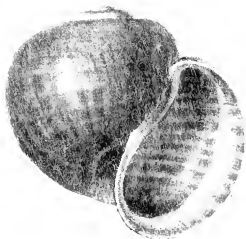
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# AMPULLARIA.

## PLATE VIII.

Fig. 36. (Mus. Cuming.)

FIG. 36.—Shell of figured species to be a variety of finer shell of *A. lymnaea*, represented at Pl. III, Fig. 12.

Species 37. (Mus. Cuming.)

AMPULLARIA TETRAZOIDES. *Amp. testis oblongatactis, subrotunda, sublongi aperturæ, spiræ erectæ, antrorotæ, exornatae, luteæ, albicinctæ, rotundæ, luteæ, spiræ erectæ, antrorotæ, subrotunda, sublongi aperturæ, spiræ erectæ.*

FIG. 37.—TURKISH-LIKE AMPULLARIA. Shell oblong-umbilicated, rather solid, almost imperforated, spiræ erect, whorls convex, smooth; olive-green, obscurely lined, aperture ovate, rather small, cordoned; highly reflected.

*Hab.* Austria.

A dull smooth olive-green species, partly lined, of a *Lymnaea*-like growth.

Species 38. (Mus. Cuming.)

AMPULLARIA LYMAEA-SPERMIS. *Amp. testis sublongatactis, subrotunda, sublongi aperturæ, spiræ erectæ, antrorotæ, exornatae, luteæ, albicinctæ, rotundæ, luteæ, spiræ erectæ, antrorotæ, subrotunda, sublongi aperturæ, spiræ erectæ.*

FIG. 38.—LYMAEA-SHAPED AMPULLARIA. Shell somewhat oblong-umbilicated, scarcely umbilicated, spiræ erect, whorls slightly bent in by the suture, then convex, longitudinally ornamented spirally, greenish-olive, aper-

ture linear-oblong, rather large, apertured with orange-red within.

SPINX, Test. Phyl. Brasiliana, pl. 3, f. 1.

*Hab.* —?

Allied to *A. lymnaea*, but less roughly wrinkled, and of a lighter olive-horn colour, tinged in the mouth with a warm orange-red.

Species 39. (Mus. Cuming.)

AMPULLARIA LYMAEA-FORMIS. *Amp. testis compressa, subrotunda, sublongi aperturæ, spiræ erectæ, antrorotæ, exornatae, luteæ, albicinctæ, rotundæ, luteæ, spiræ erectæ, antrorotæ, subrotunda, sublongi aperturæ, spiræ erectæ.*

THE LYMAEA-SHAPED AMPULLARIA. Shell compressly ovate, hollowed beneath, rather largely umbilicated, spiræ slightly immersed, whorls flattened round the top, then flatly convex, dull glaucous, encircled with four distant narrow brown bands; aperture ovate, largely expanded.

*Hab.* River station.

This fine species is distinguished by its elegantly constricted *Lymnaea*-like form, and largely expanded aperture.

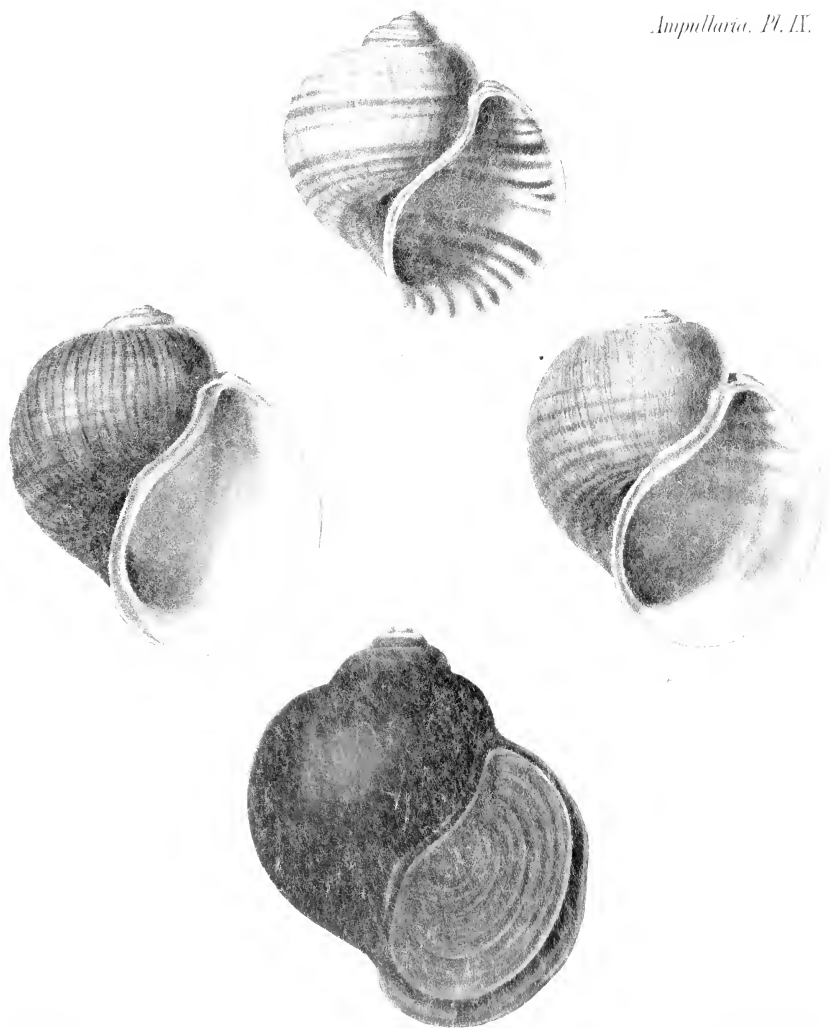
Fig. 40. (Mus. Cuming.)

This shell, though differing so much in appearance from *A. lymnaea*, represented at Pl. VI, Fig. 27, is identical with it, and illustrates an example of the same species with the surface incised.









# AMPULLARIA.

PLATE IX.

SPECIES 41. (Mus. Cuming.)

AMPULLARIA LASOLEI. *Amp. testâ ovato-globosâ, tenui, inflata, umbilicâ, spirâ parviscâ, subimmersâ, anfractibus ad suturam impressâ canaliculatis, deinde reticulatis, mollibus, albidibus; liridâ-glaucâ, fasciis nigricâ, rubro-olivaceis circumdatâ; aperturâ orolâ, subâ.*

THE Banded AMPULLARIA. Shell ovately globose, thin, inflated, umbilicated, spire rather small, slightly immersed, whorls impressly channelled at the suture, then rounded, malleted, shining; livid glaucous encircled with narrow reddish-glaucous bands; aperture ovate, rather large.

*Hab.* —?

A very characteristic elegantly convoluted species, deeply impressed at the suture and conspicuously umbilicated, of light texture and pale glaucous colour, encircled with darker reddish-glaucous bands.

We select this out of the many that have been described and figured by authors under the name of *A. fasciata*, trusting it may henceforth be regarded as the fixed type of that species.

Species 42 (Fig. 42 and 43. Mus. Cuming.)

AMPULLARIA INSCULUM. *Amp. testâ orato-globosâ, tenuiculâ, inflatâ, angustâ profundâ umbilicâ, spirâ brevissimâ, immersâ, anfractibus ad suturam impressâ canaliculatis, deinde concentricis, undique densè reticulato-striatis; albescens-circatis, pallidè fasciatâ; aperturâ circumscissâ, labro integro, intus rubro-aurantio tincto.*

THE ISLAND AMPULLARIA. Shell ovately globose, rather thin, inflated, narrowly deeply umbilicated, spire very

short, immersed, whorls impressly channelled at the suture, then convex, everywhere closely reticulate-striated; olive-green, faintly banded; aperture circular-ovate, lip entire, tinged with reddish-orange.

D'ORBIGNY, Voy. dans l'Ancr. Méri'd. Moll. p. 374. pl. 51 f. 1, 2.

*Hab.* Isles of Parana; D'Orbigny. Rio Grande, Bolivia. Bridges.

The shells represented at Fig. 42 and 43 illustrate two different states of this species; one in which the surface is finely indently striated, the other in which it is also ridged and malleted. The suture is deeply impressed and the aperture nearly circular and warmly tinged with orange. M. D'Orbigny describes having found specimens among the water-plants in the lakes and brooks of the Isles of Parana, La Plata, which he kept alive for a twelve-month afterwards without water.

Species 44. (Mus. Cuming.)

AMPULLARIA PAPYRACEA. *Amp. testâ globoso-turbinatâ, tenuissimâ, imperforatâ, spirâ exsertâ, obsolete spiraculâ, anfractibus concentricis, levibus, albidibus, undique intus rubro-nigrâ; aperturâ pyriformi-sublongâ, labro columellari tenuè reflexo.*

THE PAPER AMPULLARIA. Shell globosely turbinated, very thin, imperforated, spire exerted, obsolete spiraculâ, spirally ridged, whorls convex, smooth, shining, everywhere intense red-black; aperture pyriformly oblong, columellar lip thinly reflected.

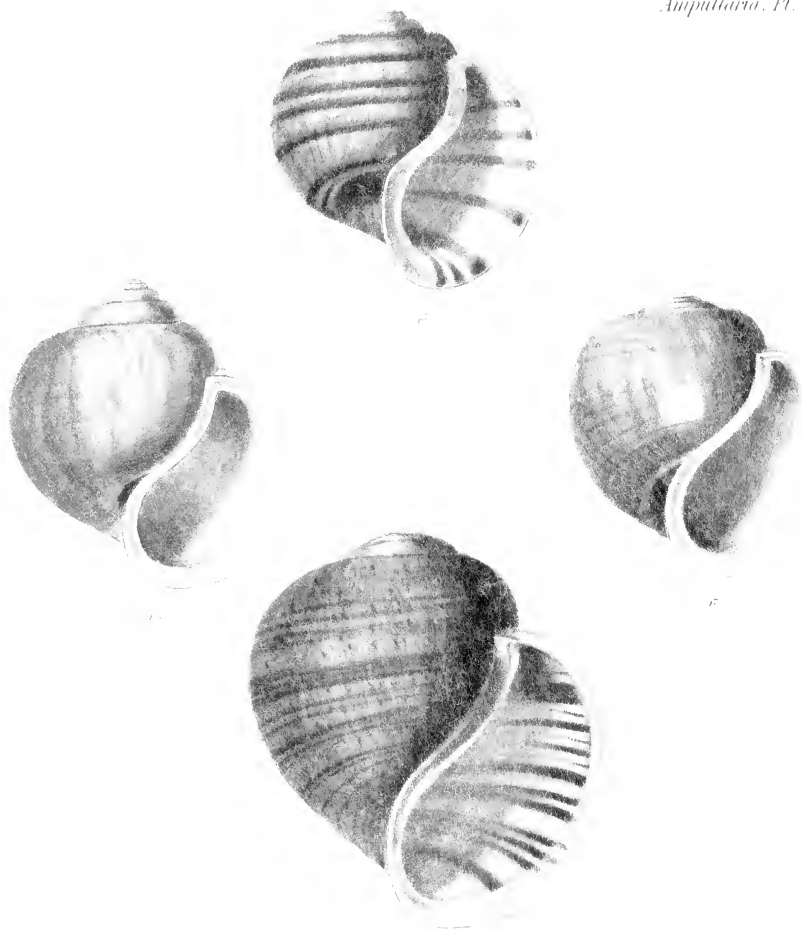
SPIX, Test. Fluv. Brasiliensia, p. 3. pl. 4. f. 1, 2.

*Hab.* Meobamba, Western Brazil.

Chiefly distinguished by its peculiarly light horny texture, and very dark shining ebony colour.







# AMPULLARIA.

PLATE X.

Species 45. (Mus. Cuming.)

AMPULLARIA OROGONENSIS. *Amp. testâ globosâ, ampliter perspettâ umbilicata, spirâ brevissimâ, anfractibus superâ impresso-planis, deinde rotundatis; tubercâ elevatissimâ, fasciis angustis nigris circumdatâ; apertura pyriformi-oblongâ, labro intus intense bractiossquamoso.*

THE OROGON AMPULLARIA. Shell globose, largely perspettely umbilicated, spire rather short, whorls impressly flattened at the upper part, then rounded; dark olive-green, encircled with narrow black bands; aperture pyriformly ovate; lip deep orange, blood-red within.

ZIEGLER, Mus. Cuming.

Hab. River Orogon.

Of very characteristic helicoid growth, forming a large perspective umbilicus, distinguished by its vivid colouring. The outer surface of the shell is painted with narrow black bands upon a rich olive-green ground, whilst the aperture is stained with blood-red passing into orange.

Species 46. (Fig. 16 and 17. Mus. Cuming.)

AMPULLARIA GLOBOSA. *Amp. testâ rotundato-globosâ, angustè profunde umbilicatâ, spirâ brevi, obtusâ, tuberculis subelevatâ, anfractibus rotundatis, lacinibus, nitentibus, poro intus sellentis; tuberculâ elevatâ, circumdatâ; apertura truncato-oblongâ, amplâ, labro intus sellentibus flavo-roseis.*

THE GLOBOSE AMPULLARIA. Shell rotundately globose, narrowly deeply umbilicated, spire short, obtuse, sometimes a little exserted, whorls rounded, smooth, shining, more or less malleated; yellowish-olive, scarcely banded, aperture lunar oblong, large, lip thickened, yellowish.

SWAINSON, Zool. Illus. First Series, Pl. 119.

English var. *Ampullaria corrugata*, Swainson.

*Ampullaria pachystoma*, Benson.

Hab. Calcutta (in the Botanic Gardens); Benson

Peculiarly distinguished by its shining, olive, malleated, globular form and thickened peritreme. The specimens being more or less smooth or wrinkled, with Fig. 46 and 47, represent the extreme states of the species, the spire more or less acuminate and the umbilicus larger or smaller.

Species 48. (Mus. Cuming.)

AMPULLARIA AMPULLACEA. *Amp. testâ pyriformi-globosâ, lasa versus attenuatâ, angustè compressè umbilicatâ, spirâ brevi, obtusâ, anfractibus superâ declivibus, deinde plano-convexis, lacinibus; castaneo-olivaceâ, fasciis angustis numerosis circumdatâ; apertura pyriformi-oblongâ, amplâ, labro intus carinato-rufipiloso intus tiacto.*

THE JUG AMPULLARIA. Shell pyriformly globose, attenuated towards the base, narrowly compressly umbilicated, spire short, obtuse, whorls slanting round the upper part, then slightly convex, smooth; chestnut-olive, encircled with numerous narrow bands; aperture pyriformly oblong, large, lip more or less tinged within with orange-red.

Hellie *ampullacea*, Linnaeus, Syst. Nat. p. 1244

Verita *ampullacea*, Muller.

*Ampullaria poricola*, Lamarck.

*Bullium ampullaceus*, Bruguière.

*Ampullaria ampullacea*, Fürssac.

*Ampullaria sanguifica*, Dunker.

*Ampullaria Suatrensis*, Philippi.

*Ampullaria Celebesis*, Quoy and Gaimard

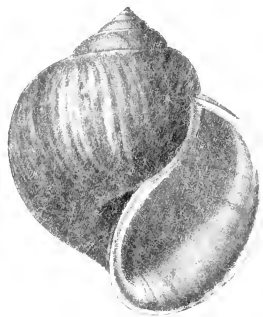
Hab. Borneo

This appears to be the old Linnaean type of the genus so far as it is possible to determine it. The shell is chiefly distinguished by a characteristic globosely pear-shaped form.

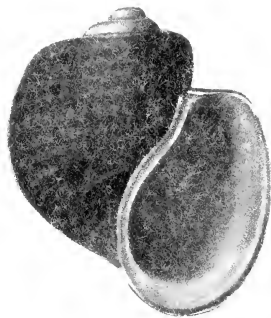




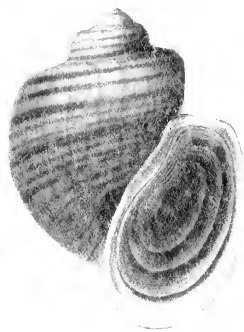




11.



12.



13.



14.

# AMPULLARIA.

## PLATE XI.

### Species 49. (Mus. Cuming.)

**AMPULLARIA DYSONI.** *Asp. testâ globosâ, profunde umbilicatâ, spirâ apertâ int., anfractibus superioribus deinde tumido-rotundatis, conspicuè mullatis; tricoloribus, ferrugineo fuscâ, aperturâ pyriformi-oblongâ, limbo tricoloribus.*

**DYSON'S AMPULLARIA.** Shell globose, deeply umbilicated, spire acuminated, whorls slanting at the upper part, then tumidly rounded, conspicuously malleated; livid grey, tinged with rust; aperture pyriformly oblong, limb purple within.

**HAB.** Conch. Miscellany, No. 1, Pl. 2, Fig. 7.

**Hab.** Honduras; Dyson.

This species scarcely differs from *A. multivata*, except in being more umbilicated and more globosely acuminated towards the spire.

### Species 50. (Fig. 50 and 51 Mus. Cuming.)

**AMPULLARIA BRUGESI.** *Asp. testâ oblongâ, tenui, subprofunde umbilicatâ, spirâ brevitate, anfractibus superioribus glaucisangulatis, deinde convexis, levibus, subumbilicatis, excavato-angulatis, interstria serratâ olivaceo-rufâ, fasciis angustis numerosis cingulatis; aperturâ ovato-oblongâ, limbo effuso.*

**BRUGES'S AMPULLARIA.** Shell oblong, thin, rather

deeply umbilicated, spire turreted, whorls broadly flatly angled at the upper part, then convex, smooth, faintly malleated; greenish-olive, sometimes dusky olive-brown, encircled with numerous narrow bands; aperture ovately oblong, lip effused.

**Hab.** Rio Grande, Bolivia; Bridges.

This fine species, collected in the interior of Bolivia by Mr. Bridges, is remarkably distinguished by the broad spiral shell which is formed by the angular structure of the upper part of the whorls next the suture.

### Species 52. (Mus. Cuming.)

**AMPULLARIA IMMERSA.** *Asp. testâ ovata, tenui, ventricosi, spirâ brevi, peculiariter immersâ, anfractibus interseriali profunde canalulatis, deinde convexis, levibus; circumscissis-olivaceis, versus spiram pallidâ, fasciis angustis cingulatis; aperturâ ovata, limbo subeffuso.*

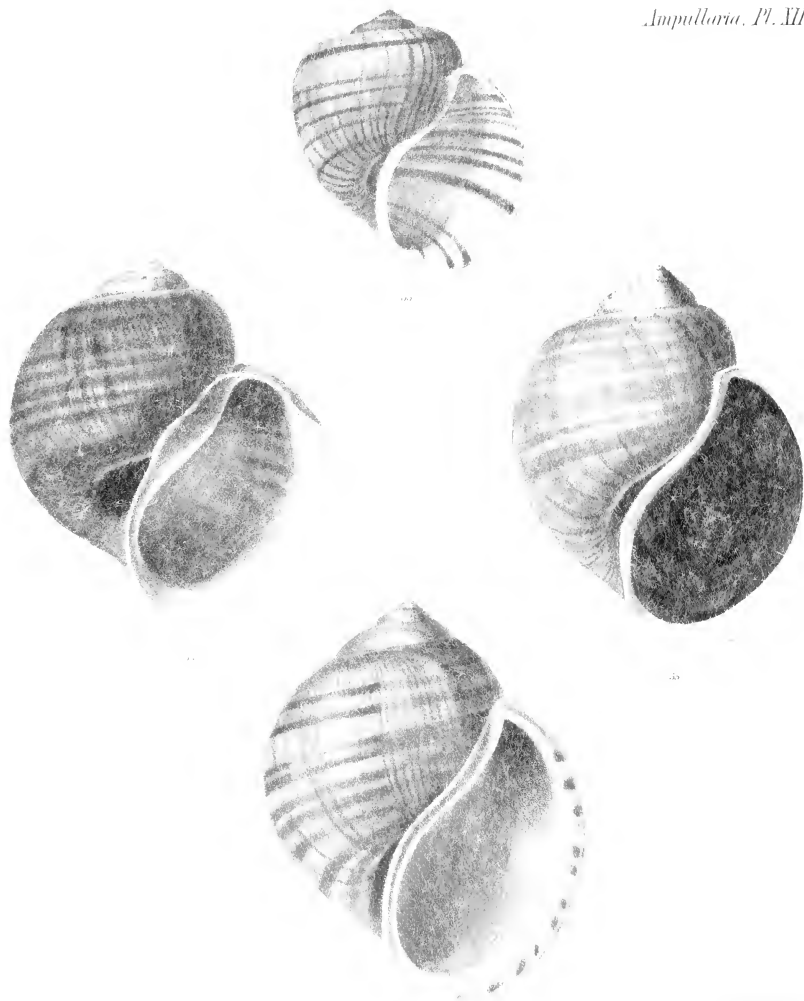
**THE IMMERSED AMPULLARIA.** Shell ovate, thin, ventricose, spire short, peculiarly immersed, whorls deeply channelled at the suture, then convex, smooth, greenish-olive, pale towards the spire, encircled with narrow bands; aperture ovate, lip rather effused.

**Hab.** Rio Grande, Bolivia; Bridges.

A light ventricose species, deeply channelled at the suture, with the spire peculiarly rudely immersed.







# AMPULLARIA.

PLATE XII.

Species 53. (Mus. Cuming.)

**AMPULLARIA ZONATA.** *Amp. testâ subquadrato-ovata, basi umbilicâ, ligulâ, angustè profunde umbilicatâ, spirâ brevè, subnullâ, infractis: sutureâ testâ rotundatâ, et basi recessâ obtusâ; interscissâ, lineâ spirâ circumdatis, et rictibus perispermè circumdatâ; apertura, angustè, angulose effusâ, foveâ aurantiolâta.*

**THE ZONED AMPULLARIA.** Shell somewhat squarely ovate, rather thin, inflated, narrowly deeply umbilicated; spire short, acuminate, whorls broadly rounded at the upper part, the last whorl attenuated towards the base; yellowish-olive, prominently encircled with red, black, and green lines; aperture narrowly, largely effused, interior orange-yellow.

**STEP. Test.** Fluv. Brasiliensis, p. 1, pl. 2, f. 1, 2.

**Hab.** Columbia.

The shell here figured, the only specimen we have been able to refer to *A. zonata*, corresponds with the variety figured by Dr. Spax with the name *A. Archimedes*.

Species 54. (Mus. Cuming.)

**AMPULLARIA ALBIFORMIS.** *Amp. testâ gibboso-turbinatâ, subangustè umbilicatâ, spirâ mediocri, ventriculâ ad suturam impressâ circumdatis, deinde rotundatis, sutureâ striatâ; interscissâ-obtusâ, foveâ aurantiolâta; angustè circumdatâ; apertura circumdatis, foveâ aurantiolâta.*

**THE ALBIFORM AMPULLARIA.** Shell gibbously turbinated, rather largely umbilicated, spire middling, whorls impressly channelled at the suture, then rounded, rather roughly striated; yellowish-olive, encircled with narrow faint green bands; aperture circumdatis, interior tinged with orange.

**Hab.** Paraguay.

Distinguished from *A. insularum*, to which it is closely allied by its more spirally turbinated growth, larger umbilicus, and painting of narrow green bands.

Species 55. (Mus. Cuming.)

**AMPULLARIA AMAZONICA.** *Amp. testâ oblongo-ovata, subangustè profunde umbilicatâ, spirâ exertâ, infractis ad suturam impressâ, deinde convexis, longitudinâter striatis; interscissâ-obtusâ, obscure foveâta; apertura pyriformi-oblongâ, foveâ aurantiolâta.*

**THE AMAZON AMPULLARIA.** Shell oblong-ovate, rather narrowly deeply umbilicated, spire exerted, whorls impressed at the suture, then convex, longitudinally striated; greenish-olive, obscurely banded; aperture pyriformly oblong, interior tinged with orange.

**Hab.** River Amazon.

Closely resembling Mr. Swainson's drawing of *A. reflexa*, but of larger size; and differently coloured in the mouth.

Species 56. (Mus. Cuming.)

**AMPULLARIA CASSIDIFORMIS.** *Amp. testâ oblongâ, convexâ basi utraque, subangustè profunde umbilicatâ, spirâ truncatâ, conoidâ, infractis angustè tumido-declivibus, deinde plano-convexis; interscissâ, nigricante obscure foveâta; apertura pyriformi-oblongâ, foveâ livido-purpurâ, labro columellari intertâ sanguineo foveâta.*

**THE CASSIS-SHAPED AMPULLARIA.** Shell oblong, attenuated towards the base, rather narrowly deeply umbilicated, spire rather short, conoid, whorls tumidly slanting at the upper part, then flatly convex, yellowish-green, obscurely banded with blackish-brown; aperture pyriformly oblong, interior livid purple, columellar lip sometimes tinged with blood-red.

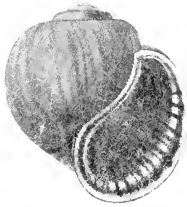
**Hab.** Lake of Maracubo, Venezuela.

A fine species from Venezuela, distinguished by its oblong Cassis-like form.





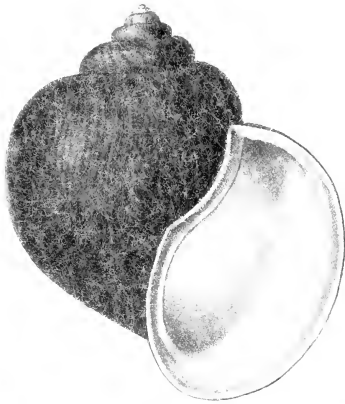




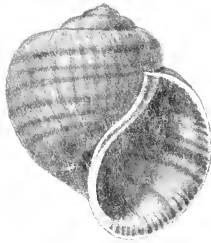
32.



33.



34.



35.



36.

# AMPULLARIA.

PLATE XIII.

Species 57. (MUS. CUNNING.)

100. *AMPULLARIA MARIANA*. *Am. testis globosa, in apice umbilico, spirali, et rursus, inferius et ad suturam planatissimam, deinde rotundata. Lacinias, suturam alvalem; aperturam ovalem, tubum rotas purpureo-viresco luteo.*

101. *NOVA AMPULLARIA*. Shell globose, narrowly umbilicated, spire rather short, whorls a little flattened at the sutures, then rounded, smooth, dark olive; aperture ovate, lip striated within with purple-black.

Of a peculiarly globose form, the lip being characteristically striated within with purple or dusky-black.

Species 58. (MUS. CUNNING.)

102. *AMPULLARIA COENEA*. *Am. testis globosa, ovata, in apice umbilico, spirali, et rursus, subultrahelice, tubus superior planatissimus, lacinias, suturam, et suturam alvalem, et aperturam ovalem, tubum rotas, luteo luteo.*

103. *NOVA AMPULLARIA*. Shell globose, thick, narrowly umbilicated, spire rather obtuse, whorls flatly rounded at the upper part, then convex; yellowish-brown, aperture ovate, lip thickened, fringed with purple.

8895 (MS. No. 1). (T. J. CREEK.) Zoological Illustrations.

II. *Am.*

Of a peculiarly rounded form, the whorls abruptly rounded at the upper part, as to present a narrow shell, the upper part of the *Am.* umbilicated, which laminae, the tubum rotas, as having a pointed apex.

Species 59. (MUS. CUNNING.)

104. *AMPULLARIA LUTULELLA*. *Am. testis globosissima, in apice umbilico, spirali, subultrahelice, spirali, et rursus, subultrahelice, tubus superior planatissimus, lacinias, suturam, et aperturam ovalem, tubum rotas, luteo luteo.*

105. *NOVA AMPULLARIA*. Shell globose, turbid, deeply umbilicated, spire acuminately exerted, whorls rounded, longitudinally wrinkled-

ated, dark olive-chestnut; aperture ovate, rather large, lip deep blood-red within.

*Hab.* Zanzibar; Mr. T. THOM.

This fine dark species, with blood-red-stained mouth, is perfectly distinct from any hitherto described.

Species 60. (MUS. CUNNING.)

106. *AMPULLARIA HOPELOXENSIS*. *Am. testis subultrahelice, globosa, in apice umbilico, spirali, et rursus, subultrahelice, tubus superior planatissimus, lacinias, suturam, et aperturam ovalem, tubum rotas, luteo luteo.*

107. *HOPELOW AMPULLARIA*. Shell somewhat triangularly globose, rather swollen, moderately umbilicated, whorls impressively flaring round the upper part, then convex, smoothly greenish-olive, paler towards the spire, encircled with narrow darker bands; aperture ovate, interior blackish-purple.

108. *Trous. Amer. Phil. Soc. vol. v. pl. 19. f. 54.*

*Hab.* Darien, Georgia.

A round globose shell, inclined somewhat angularly towards the base.

Species 61. (MUS. CUNNING.)

109. *AMPULLARIA LUTULELLA*. *Am. testis globosissima, in apice umbilico, spirali, subultrahelice, spirali, et rursus, subultrahelice, tubus superior planatissimus, lacinias, suturam, et aperturam ovalem, tubum rotas, luteo luteo.*

110. *NOVA AMPULLARIA*. Shell globose, ovate, very narrowly umbilicated, spire rather exerted, obtuse at the apex, whorls convex, longitudinally rugosely striated, shining as if glazed, livid olive, black-succinoid, aperture ovate, rather effused at the base.

*Hab.* —?

Of a peculiar glazed livid black-succinoid olive-colour, with a narrow scarcely perceptible umbilicus, the aperture being a little effused at the base.







61a



61c



61b



61e



61d



61f



61g

# AMPULLARIA.

PLATE XIV.

Species 62. (Mus. Cuming.)

AMPULLARIA COMPACTA. *Amp. testâ subgloboso-ovata*  
*â umbilicatâ, spirâ brevissima, infractibus convexis.*  
*Coloris: fulvoo-olivaceâ, fasciis roseo-âttibus cun-*  
*ctatis; apertura oblongo-ovata, ut marginem mar-*  
*gineâ.*

THE COMPACT AMPULLARIA. Shell somewhat globosely ovate, scarcely umbilicated, spire rather short, whorls convex, smooth; fulvous-olive, encircled with greenish bands; aperture oblong-ovate, variegated at the edge.

H. Malacca.

A smooth dark olive species, scarcely umbilicated, with rather a contracted aperture, the interior being purple-brown, with a thickened rim of opaque blue-white near the lip.

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

AMPULLARIA NOTABILIS. *Amp. testâ subquadrate-ovata,*  
*umbilicatâ, subulicâ, spirâ brevissima, angustâ, ex-*  
*sertâ, angustâ, laticorâ, costatis; fulvo-âttibus*  
*fasciis angustis, interruptis, suboboleis, cingulis;*  
*apertura oblongâ, foveâ conspicuâ, foveatâ.*

THE BROAD-LEAF AMPULLARIA. Shell somewhat squarely ovate thin, indented, umbilicated, spire very short, whorls acuminate produced round the upper part, smooth, unfiled; fulvous-olive, encircled with faint narrow interrupted bands, aperture large, with the whorls conspicuously marked in the interior.

H. — — —

A light indented species having the upper part of the whorls almost on a plane with the spire.

Species 64. (Mus. Cuming.)

AMPULLARIA OVATA. *Amp. testâ ovata, truncatâ, spi-*  
*ram brevem, umbilicatâ, spirâ brevem, infractibus em-*  
*issis, âttibus; roseo-âttibus; cingulis; apertura*  
*ovata, ut in columnâ subconica.*

THE OVATE AMPULLARIA. Shell ovate, rather swollen, rather narrowly umbilicated, spire exerted, whorls

convex, wave-striated, greenish-olive; aperture ovate, columnar lip slightly recurved.

OLIVIER, Voy. dans l'Empire Ottoman, l'Égypte et la Perse, vol. ii. p. 39. pl. 31. f. 1.

Hab. Egypt.

Of a regularly turreted ovate form, characterized with longitudinally waved striae.

Species 65. (Fig. a, b, Mus. Cuming.)

AMPULLARIA NUBILA. *Amp. testâ ovato-ovata, Turbu-*  
*formâ, solidâ, rix umbilicatâ, spirâ acuminate-exsertâ*  
*infractibus rotundatis, laticorâ, hic illic varicosâ; in-*  
*tescente, olivoo-citrinâ, interruptè fasciatâ et umbilatâ;*  
*apertura portico-âttibus, subcirculari, obliquè, foveâ.*

THE CLOUDY AMPULLARIA. Shell conically ovate, Turbo-shaped, solid, scarcely umbilicated, spire acuminately exerted, whorls rounded, smooth, here and there varicose; yellowish, interruptedly banded and clouded with olive-green; aperture rather small, nearly circular, obliquely effused.

Hab. River Salomoens; Mr. Yates.

A solid Turbo-like species, unusually acuminately convoluted, clouded with olive-green upon a dull fulvous-yellow ground.

Species 66. (Mus. Cuming.)

AMPULLARIA BROCCHUS. *Amp. testâ globosâ, subam-*  
*plicher umbilicatâ, spirâ brevissima, acutè acuminatâ,*  
*infractibus superâe de-âttibus, deinde convexis, fulvo-*  
*âttibus; fasciis angustis, cingulis, cingulis; cingulis;*  
*apertura oblongâ, foveâ conspicuâ, foveâ conspicuâ*  
*foveatâ.*

THE TOP AMPULLARIA. Shell globose, rather largely umbilicated, spire rather short, sharply acuminated, whorls slanting round the upper part, then convex, fulvous-olive, encircled with numerous narrow green bands, aperture oblong, rather narrow, bands conspicuous in the interior.

Hab. — — —

A globose many-banded shell, with a characteristic sharply acuminated spire.









68a



67c



68b



69



70a



70b



70c

# AMPULLARIA.

PLATE XV.

(Plates 67, 68, Mus. Cuming.)

**AMPULLARIA MALABARIA.** *Asp. testâ ovata, angustè umbilicatâ, fuliginosâ, spirâ subseriatâ, inflexo-obscurâ, et declinatâ et utaq;e marginis, dentè constrictâ, l.â basi, nitentibus, int. nullo; aperturâ ovatâ, l.â basi, int. impressâ.*

**THE MALABAR AMPULLARIA.** Shell ovate, narrowly umbilicated, fulvous-olive, spire somewhat everted, whorls shining at the upper part and minutely wrinkled, then convex, smooth, shining, faintly malleated; aperture ovate, lip thin, thickened within.

**MELIPI.** Kuster Couch Cab. *Amputoria*, p. 29, pl. 7, f. 8.

*Hab.* Malabar.

The outer surface of this species is shining fulvous-olive, with the umbilicus almost obsolete.

Species 68. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA PRODUCTA.** *Asp. testâ oblongo-ovata, ad basin productâ, angustè umbilicatâ, eversione l.â basi, spirâ subseriatâ, inflexo-obscurâ, et declinatâ, utaq;e marginis, dentè constrictâ, l.â basi, nitentibus, int. nullo; aperturâ oblongâ, ad basin effusâ, int. nullo.*

**THE PRODUCT AMPULLARIA.** Shell oblong-oval, produced at the base, narrowly umbilicated, umbilicus almost obsolete, spire rather obtuse, whorls slanting, and finely wrinkled at the upper part, then flatly convex, olive-banded with reddish-chestnut; aperture oblong, effused at the base, spotted at the edge.

*Hab.* —?

This species is chiefly characterized by its oblong-oval form, produced and effused at the base.

Species 69. (Mus. Cuming.)

**AMPULLARIA REFLEXA.** *Asp. testâ globosâ, obprofundè umbilicatâ, spirâ brevi, inflexilibus et saturatè subimpressis, dentè catenatis, scissilibus, nitentibus, obscurè*

*corrugatis et malleatis, eversione-olivacea, int. nullo; aperturâ angustè trigonâ et singulatâ, aperturâ ovatâ, int. nigricante-purpureâ, labro int. nigrescente.*

**THE REFLECTED AMPULLARIA.** Shell globose, rather deeply umbilicated, spire short, whorls somewhat impressed at the suture, then rounded, smooth, shining, obscurely wrinkled and malleated; greenish-olive encircled with dark lines and narrow bands, aperture ovate, interior blackish-purple, lip black within.

**SWAINSON.** *Zoological Illustrations*, vol. iii, pl. 17?

*Hab.* —?

A globose shell, very symmetrically convolved, chiefly distinguished by its blackish-purple interior, the lip being stained within darker.

Species 70. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA OBLONGA.** *Asp. testâ subtriangulo-oblongâ, angustè umbilicatâ, spirâ subpyramidalî inflexilibus et saturatè planis-impressis, dentè catenatis, angulatis; albâ, epidermidè, f.â nitentè, aperturâ angustè oblongâ, labro int. malleato-reflexo.*

**THE OBLONG AMPULLARIA.** Shell somewhat triangularly oblong, rather solid, narrowly umbilicated, spire subpyramidal, whorls flatly impressed at the suture, then rotundately angled; whitish, covered with a fulvous-epidermis, flesh-tinted at the apex, aperture narrowly oblong, columellar lip reflected.

**SWAINSON.** *Zoological Illustrations*, vol. iii, pl. 136.

*Hab.* —?

An interesting species, distinguished by its peculiarly oblong form, and light fulvous-external coloring.

Fig. 71 (Mus. Cuming.)

The shell here figured is a variety of *A. producta*, as presented in the preceding Plate, of which there are several, all distinguished by a peculiar narrow contracted umbilicus.







25a



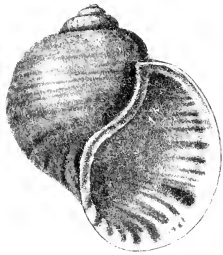
25c



25b



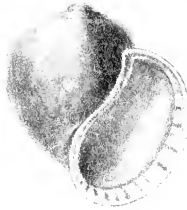
25d



25e



25f



25g

# AMPULLARIA.

PLATE XVI

Fig. 72 (Mus. Cuming.)

An interesting banded variety of *A. sohrlii*, represented in Pl. III, Fig. 31, presenting a hulk with *A. subaurobrunnea*, Sp. 41.

Species 73. (Fig. a, b, Mus. Cuming.)

AMPULLARIA SCALARIS. *Amp. testâ pyriformi-ovata, convexo-scutâ, umbilicatâ, spirâ declivi-pyramidalî, acutâ, anfractibus superioribus latè planis-angulatis, deinde concavis; ut, in umbilici descendente; præparvo-fuscâ, ad angul. in brachioâ desente; aperturâ ovali, foveâ albâ.*

THE LADDER AMPULLARIA. Shell pariformly ovate, rather thick, umbilicated, spire slantingly pyramidal, sharp, whorls broadly flatly angled at the upper part, then convex, last whorl descending in front; purple-brown, livid whitish at the angle; aperture oval, interior whitish.

D'ORBIGNY, Voy. dans l'Amérique Mérid. Moll. p. 374, pl. 59, f. 1-3.

Hab. Bolivia; D'Orbigny. Bridges.

Singularly distinguished from all other species of the genus by its broad angularly turbated spire.

Species 74. (Mus. Cuming.)

AMPULLARIA LAROSA. *Amp. testâ obliquè globosâ, convexo-angulè umbilicatâ, spirâ erecto-convexâ, acutâ, anfractibus convexis, nitentibus, longitudo sulcatâ striatis et umbilicis; foveâ-striatâ; aperturâ oblongo-ovata, expansâ, labio columellari reflexo, foveâ ad marginem tuberoso-ovalâ.*

THE COPEL AMPULLARIA. Shell obliquely globose, rather narrowly umbilicated, spire somewhat exserted, sharp, whorls convex, shining, longitudinally striated and milled, fulvous straw-colour; aperture oblong-ovate, expanded, columellar lip reflected, interior fulvous-orange at the edge.

KOENIG, Philippin. in Koster, Couch. Cab. *Ampullaria*, p. 38, pl. 18, f. 5.

Hab. India.

Of a peculiar obliquely expanded globose form, with a characteristic shining fulvous straw-coloured exterior, the aperture being edged within with fulvous-orange.

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

AMPULLARIA DOLIIFORMIS. *Amp. testâ acutâ, tenui, ventricosâ, angustè umbilicatâ, spirâ brevi, acutâ, anfractibus convexis, nitentibus, ad suturas impressis, ultimo amplius tumido et expanso; circum-olivaceâ, obscure angulifoveatâ, foveâ linearibus, irregularibus; aperturâ parvâ, apertâ, labio columellari reflexo.*

THE DOLIUM-LIKE AMPULLARIA. Shell ovate, thin, ventricose, narrowly umbilicated, spire short, sharp, whorls convex, shining, impressed at the sutures, last whorl largely swollen and expanded; ash-olive, obscurely red-banded, bands linear, irregular; aperture very large, open, columellar lip reflected.

Hab. Bombay.

An elegantly convoluted species, of light semitransparent substance, the last whorl being unusually larger than the rest, and openly expanded.

Species 76. (Mus. Cuming.)

AMPULLARIA ENCAUSTICA. *Amp. testâ globosâ, basi et rimâ obtusè attenuatâ, circum-umbilicatâ, laevi, pellucidâ, spirâ brevi, obtusâ, anfractibus convexis, laevibus, nitentibus; circum-olivaceâ; aperturâ oblongo-ovata, labio breviter reflexo, carinulo-auranti.*

THE ENAMELLED AMPULLARIA. Shell globose, obtusely attenuated towards the base, scarcely umbilicated, thin transparent, spire short, obtuse, whorls convex, smooth, shining; greenish-olive, aperture oblong-ovate, lip shortly reflected, carinulo-orange.

Hab. ———?

An apparently solid globular species, but, in reality, thin and semitransparent. The colour is a shining smooth greenish-olive, with the lip bright carinulo-orange.









75 a.



77



76 b.



79



80 b.



80 a.



81

# AMPULLARIA.

PLATE XVII.

Species 77. (Mus. Cuning.)

**AMPULLARIA BEPATAI.** *Asp. testâ subglobosâ, tenui, umbilicâ, angustâ et distinctâ, spirâ brevissimâ, nervis, angustis, sinuâ subâ delictibus, duâ de convexâ, costatis, longitudo alter striatis; livido-purpureâ, et castoreâ, cum pallidobrunneâ; aperturâ ovatâ, labro columellari lipâ thinâ reflectâ.*

**THE LIVER AMPULLARIA.** Shell subglobose, thin, rather inflated, narrowly umbilicated, spire rather short-pointed, whorls slanting round the upper part, then convex, shining, longitudinally striated; livid fawn-colour, transparent flesh towards the apex; aperture ovate, columellar lip thinly reflected.

*Hab.* —?

Of light inflated growth, thin in substance, characterized by a peculiar livid-fawn or liver-colour, changing towards the apex into a transparent flesh tint.

Species 78. (Fig. a, b. Mus. Cuning.)

**AMPULLARIA VITATA.** *Asp. testâ globoso-turbinatâ, subanguste umbilicâ, spirâ brevissimâ, angustissimis nervis, et costis, angustis, cum tenuissimâ plicato-striatis; fulvo-olivaceo-brunneâ, fasciâ brunneo-angustis et sinuâs distinctis; aperturâ ovatâ, sinuâ subâ-purpureâ, et umbilicâ unâ latâ.*

**THE VITATED AMPULLARIA.** Shell globosely turbinate, rather narrowly umbilicated, spire exerted, whorls round & smooth, very finely plicately striated at the upper part; fulvous-olive, encircled with numerous narrow brown bands; aperture ovate, interior livid-purple, blotched at the edge.

*Hab.* Philippine Islands; Cuning.

This species, which Mr. Cuning possesses in several states, is characterized throughout by a uniform fulvous-olive ground, encircled with narrow brown bands more than usually numerous.

Species 79. (Mus. Cuning.)

**AMPULLARIA CASALDIPATI.** *Asp. testâ globosâ, subovata, et subanguste umbilicâ, spirâ brevi, nervis, angustissimis convexis, longitudo alter striatis, sinuâ convexâ, angustissimis, plicato-striatis, subâ castoreâ, et castoreâ, cum olivaceâ; aperturâ plicato-striatâ, et subâ ovata, papillâ columellari unâ intus-reflexâ.*

**THE CASALDIPATI AMPULLARIA.** Shell globose, somewhat ventricose, rather narrowly umbilicated, spire short, sharp, whorls convex, longitudinally striated, coarsely channelled at the upper part, pale ash-fark band beneath a thin olive epidermis; aperture plicately ovate, bluish, orange-red next the columella.

LAMARCK, Anim. sans vert. vol. viii. p. 534

*Hab.* Cashmere; Baron Hügel.

Chiefly distinguished from *A. tatarica* and other channelled species of the genus by its sharp-pointed, though short, spire, a character specially noted by Lamarck.

Species 80. (Fig. a, b. Mus. Cuning.)

**AMPULLARIA VITREA.** *Asp. testâ ovato-turbinatâ, tenui, sinuâ, convexâ, inflatâ, parva umbilicâ, spirâ brevissimâ, angustissimis primis quatuor angulatis, et angulosa indistincte curvatis, nucleis albissimis superâ delicti, angulâ convexâ, delictâ convexâ; plicato-striatâ, fasciâs opacâ albâs longitudinalester irregulariter striatâ; aperturâ ovatâ, labro columellari tenui reflexo, nitido-olivo.*

**THE GLASSY AMPULLARIA.** Shell ovately turbinate, very thin, horny, inflated, but slightly umbilicated, spire exerted, first four whorls angled, indistinctly keeled at the angle, last whorl slanting round the upper part, the angle gradually disappearing, then rounded; transparent brown, longitudinally irregularly streaked with opaque-whitish flumes; aperture ovate, columellar lip thinly reflected, shining black.

*Hab.* Vitrea, Born, Fest. Mus. Vindobonensis, pl. 15. t. 15, 16. Chonm. Conch. vol. xi. p. 282. pl. 210. t. 2072, 2073.

*Beltrius vitreus*, Bruguiere, Deshayes.

*Hab.* —?

This extremely rare and curious shell, of transparent light horny texture, variegated with opaque epidermis-like flakes, hitherto referred to the genus *Beltrius*, appears to belong rather to *Ampullaria*.

Species 81. (Mus. Cuning.)

**AMPULLARIA CUNINGI.** *Asp. testâ subglobo-ovata, subobovata, profunde umbilicâ, spirâ brevi, angustissimis superâ planiusculis, delictâ convexâ, subobovatis; fasciâs sinuâs, fasciâs angustis et lineâs parvis et brevibus striatâ; aperturâ ovatâ, effusâ, labro columellari subconvexâ.*

**CUNING'S AMPULLARIA.** Shell subglobose ovate, rather solid, deeply umbilicated, spire short whorls rather flat at the upper part, then convex, somewhat dissid. fulvous-ash, encircled with a few reddish narrow bands and lines; aperture ovate, effused, columellar lip rather thickened.

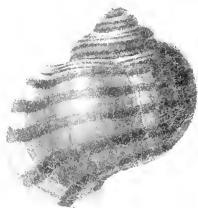
KING, Zoological Journal, vol. v. p. 311

*Hab.* Island of Taloga, Panama

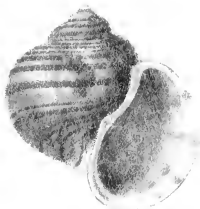
A solid shell, of somewhat dissid growth, with the aperture the keeled and much effused.



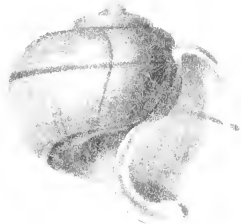




320



321



322



323



324



325

# AMPULLARIA.

PLATE XVIII.

Species 82. (Mus. Cuming.)

**AMPULLARIA PUNICULUM.** *Sup. testis globosus, sublimbo-convexus; l. b. effusate, spiris brevibus, acuminatis, aperturâ ovata; l. int. obscure flavo-purpureo; A. pale concoloris; f. lineæ rufæ, testis fuscovirescente obscure emarginatâ; p. rufæ; l. b. interna columellari subinflata, fovea pallide concoloris.*

**THE RED-BROWN AMPULLARIA.** Shell globose, sublimbo, deeply umbilicated, spire rather short, acuminate, whorls impressly flattened round the upper part, then convex; livid olive, obscurely encircled with a faint brown line; aperture ovate, columellar lip rather effused, interior pale or orange.

*H. N. G. Granada.*

Of the same typical outline as *A. tuberosum*, but less effused and having a narrower umbilicus, with little external protuberance, apt a faint line or two.

Species 83. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA CUBENSIS.** *Sup. testis subglobus, subplanus; l. b. effusate, spiris brevibus, acute ciliis rotundatis, aperturâ ovata; l. int. obscure flavo-purpureo; f. lineæ rufæ, testis fuscovirescente obscure emarginatâ; p. rufæ; l. b. interna columellari subinflata, fovea pallide concoloris.*

**THE COPA AMPULLARIA.** Shell subglobose, rather deeply umbilicated, spire exerted, whorls rounded, smooth, and rather regularly encircled with narrow red bands; aperture ovate, rather expanded.

*H. N. G. Cuba.*

The regularity of the red bands with which this species is striped, is rather a characteristic feature.

Species 84. (Mus. Cuming.)

**AMPULLARIA GLETONOMA.** *Sup. testis orbiculato-convexus, sublimbo, perumbilicatus, umbilicatus, spiris brevibus, acuminatis, aperturâ ovata; l. b. subimpressis; A. pale rotundatis, flavo-roseo-fusces; f. lineæ rufæ; l. b. interna columellari emarginatâ; p. rufæ; l. b. interna columellari subinflata, fovea pallide concoloris.*

**THE YELLOW-MOUTH AMPULLARIA.** Shell orbicularly subtriangular, somewhat discoid, very largely umbilicated, spire rather short, acuminate, whorls rather

impressly rounded, the upper part of the whorls brownish-brown, encircled with two or three distinct brown lines; aperture ovate, lip somewhat broad inferiorly.

SWAINSON, Zoological Illustrations, vol. 10, pl. 157.

*Ampullaria puchstum* and *lat. n.*, Philippi.

*Hab. Venezuela.*

Readily distinguished from the preceding species by its larger size and rougher epidermis-like texture, the columellar lip being less broadly reflected back.

Species 85. (Fig. c, b, Mus. Cuming.)

**AMPULLARIA GLAUCA.** *Sup. testis orbiculato-convexus, sublimbo, umbilicatus, spiris brevibus, aperturâ ovata; l. b. subimpressis; A. pale planis, concoloris; f. lineæ rufæ; l. b. interna columellari subinflata, fovea pallide concoloris; p. rufæ; l. b. interna columellari subinflata, fovea pallide concoloris.*

**THE GLAUOUS AMPULLARIA.** Shell orbicularly ventricose, somewhat discoid, largely umbilicated, spire short, whorls flattened round the upper part, then flatly convex; pale brown, closely encircled with glaucous-chestnut lines and bands; aperture ovate, large, columellar lip broadly effused, interior orange.

*H. N. G. glaucus*, Linnæus, Mus. Cuv. p. 677.

*Verita effusa*, Muller.

*H. N. G. glaucus cubensis*, Guehin.

*H. N. G. veritina*, Guehin.

*Bullæus glaucus*, Bruguière.

*Sup. testis effusa*, Swainson.

*A. palatinis tinguanis*, Guehin.

*H. N. G.*

A very characteristic species, distinguished by its shining porcelain-like aspect and broadly effused reflection of the columellar lip, which, with the interior, is enameled orange, the external surface of the shell being closely lined and banded with glaucous-chestnut.

Fig. 86. (Mus. Cuming.)

A variety of *A. Palatinoides*, represented at Pl. II, Fig. 2, in which the whorls are more globosely convoluted.









384



387



388



389



390



391



392

# AMPULLARIA.

PLATE XIX.

Species 87. (Mus. Cuning.)

*AMPULLARIA PERFORATA*, represented by Pl. XIV.

Species 88. (Pl. and Mus. Cuning.)

*AMPULLARIA CLOSA*. *Sup. testâ* *ovata*, *perforata*, *aperturâ* *perforata*, *spirâ* *exsertâ*, *choris* *convexâ*, *orbiculatâ*, *marginibus* *reticulatis*, *coloribus* *brunneis*, *epidermide* *obovata*, *aperturâ* *obovata*, *labio* *albâ*, *reflexâ*.

**THE CLOSED AMPULLARIA.** Shell ovate, imperforated, spire short more or less exserted at the apex, whorls not numerous but the upper part encircled through out with fine net-like radial striae, finely-sculptured, embossed with numerous crowded bands, aperture shallow, rounded at the base, columellar lip white and reflected.

*Hab.*—

The species is distinguished by a typical character of its own represented most conspicuously in the surface being sculptured throughout with fine red-like radial striae.

Species 89. (Mus. Cuning.)

*AMPULLARIA COMPACTA*. *Sup. testâ* *obovata*, *orbiculata*, *aperturâ* *obovata*, *spirâ* *testâ* *infraactâ*, *choris* *convexâ*, *marginibus* *reticulatis*, *coloribus* *brunneis*, *epidermide* *obovata*, *aperturâ* *obovata*, *labio* *albâ*, *reflexâ*, *orbis* *orbis*.

**THE CONTRACTED AMPULLARIA.** Shell oblong, truncated almost imperforated, spire exserted, choris convex, rather narrow, rounded, yellowish-brown encircled with numerous irregular red-brown lines, aperture ovate, small, columella lip white, reflected.

*Hab.*—

A species well distinguished by its obtuse truncated form, and contracted aperture. The irregular linear painting is also a characteristic feature.

Species 90. (Fig. 90 a, b, and 91. Mus. Cuning.)

*AMPULLARIA APERTA*. *Sup. testâ* *orbiculato-ovata*, *orbiculata*, *aperturâ* *obovata*, *spirâ* *testâ* *subsertâ*, *choris* *convexâ*, *marginibus* *reticulatis*, *coloribus* *brunneis*, *epidermide* *obovata*, *aperturâ* *obovata*, *labio* *albâ*, *reflexâ*.

**THE OPEN AMPULLARIA.** Shell cordately ovate, narrowly umbilicated, spire rather short, acuminate, choris convex, smooth, pale ash, encircled with red lines and covered with an olive sulphureous epidermis, aperture nearly circular, rather large, conspicuously obliquely obcordate, lip reflected.

PHILIPPI, Zeitschrift für Malac. 1849, p. 18.

*Hab.*—

Characterized by a peculiarly expanded aperture, and light ash, red-lined colouring, covered by a thin shining horny epidermis.







93a



92.



95b.



94.



95a.



95c.



96.

Rowley del et lith

Vincent Brooks imp

# AMPULLARIA.

PLATE XX

Species 92. (Mus. Cuming.)

**AMPULLARIA BUSTA.** *Amp. testâ rotundâ obovata, ovato-convexâ, spirâ subsessileâ, angustibus, superius subcompressis, striatis rotundatis, levibus, spiralis, obscure fasciis angustis saturatioribus circumdata; apertura truncata, labeo latius interscapulato.*

**FIG. 66. RING AMPULLARIA.** Shell ovately globose, narrowly umbilicated, spire rather exerted, whorls slightly flattened at the upper part, then rounded, smooth; dull olive, encircled with narrow darker bands; aperture linear-ovate, lip yellowish-white within.

*Hab.* Ceylon, F. Layard.

A dull greenish-olive species, of globose form, narrowly compressly umbilicated, encircled with numerous faint bands irregular in width, but mostly linear.

Species 93. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA GOSSETI.** *Amp. testâ ventroglabratâ, subtruncatâ, compressè umbilicatâ, spirâ subsessileâ, angustibus, parvè striatulostrigatis, dentate emarginatis, obovatis, ventris et malleatis, castaneo-fuscis, obscure fasciatis, apertura ovata, labeo emarginato-arrundinâ, labeo columellari incrassato, reflexo.*

**GOSSET'S AMPULLARIA.** Shell ovately globose, rather solid compressly umbilicated, spire rather exerted, whorls rotundately angled round the upper part, then convex, obscurely ridged and malleated; chestnut-brown, obscurely banded, aperture ovate, interior reddish-orange, columellar lip thickened, reflected.

*Hab.* Jamaica; Gosset.

Alied to *A. obscura*, but of more solid growth, with the spire more exerted, and the columellar lip more thickened.

Species 94. (Mus. Cuming.)

**AMPULLARIA CIMBRIA.** *Amp. testâ globosâ, tenui, subinflatâ, anguste umbilicatâ, spirâ brevi, angustibus rotundatis, levibus, striis validè depressivatis; parvè striatâ, fasciis lineariibus rufescentibus tribus ad quartam circumdatâ; apertura pyriformi-ovata, labeo columellari leviter reflexo.*

**THE ASH-COLOURED AMPULLARIA.** Shell globose, thin rather inflated, narrowly umbilicated, spire short, whorls rounded, smooth, the last ascending in front pale ash, encircled with three to four linear reddish-brown bands; aperture pyriformly ovate, columellar lip thinly reflected.

*Hab.* Ceylon.

A peculiarly rounded species, thin and somewhat inflated, of a light ash-colour, encircled with faint bands, which, towards the apex, are like red-brown lines, of which only the uppermost one is visible.

Species 95. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA ELECTRINA.** *Amp. testâ ovatâ, tenuissimâ, inflatâ, profundè umbilicatâ, spirâ brevi, angustibus angustibus ad suturam anguste impressis, dentate convexis, valiquè malleatis, alutaceis; rufescenti-purpureâ, obscure multifasciatâ; apertura ovata, subcapitâ, labeo columellari leviter reflexo.*

**THE AMBER AMPULLARIA.** Shell ovate, very thin, inflated, deeply umbilicated, spire short, acuminate whorls narrowly impressed at the suture, then convex everywhere malleated, shining; reddish-fawn colour, obscurely many-banded; aperture ovate, rather large, columellar lip thinly reflected.

*Hab.* ———?

A very light inflated species, of a pale amber-tinted reddish-fawn colour.

Species 96. (Mus. Cuming.)

**AMPULLARIA JAVANICA.** *Amp. testâ conico-oblongâ, rorè umbilicatâ, spirâ exertâ, angustibus convexis, subangulis, levibus; intense olivaceâ; apertura ovata, parvisculâ, labeo brevi.*

**THE JAVA AMPULLARIA.** Shell conically oblong, scarcely umbilicated, spire exerted, whorls convex, rather narrow, smooth; dark olive, aperture ovate, rather small, lip thin.

*Hab.* Java.

A smooth olive species, scarcely umbilicated, chiefly distinguished by its conically oblong form.









95a



97.



96b



99a



100a.



100b



101b.



102a



102b.



103

# AMPULLARIA.

PLATE XVI

Species 97. (Mus. Cuning.)

**THE CHERRY TREE.** *Amp. testâ subglobosâ, subseptem-  
mâ rotâ, spirâ brevi, anfractibus superâ subplanis-  
satis, debite concavis, lacinis; uterâ, fasciis quin-  
que vel sexque distinctis, circulatâ; aperturâ  
ovâ, labro columellari subreflexo et rotundato.*

**THE CHERRY AMPULLARIA.** Shell subglobose, rather  
largely umbilicated, spire short, whorls somewhat  
flattened at the upper part, then convex, smooth;  
olive, encircled with four or five reddish bands; aper-  
ture ovate, columellar lip slightly reflected, orange-  
tinted.

PHILIPPI. Zeitschrift für Malak. 1849, p. 49. Kuster,  
Monog. p. 38, pl. 40, f. 4.

*Hab.* — ?

This is the nearest allied species to *A. effusa*, which it  
much resembles, but is uniformly of smaller size, with the  
columellar lip less broadly expanded.

Species 98. (Fig. a, b, Mus. Cuning.)

**AMPULLARIA SIMPLEX.** *Amp. testâ ventâ, rive umbilicatâ,  
spirâ brevi, anfractibus concavis, laciniosis, utraque sub-  
expansa; uterâ, fasciis angustis lacinisque numerosis  
angustis-rufis circulatâ; aperturâ ovâ, labro co-  
lumellari leviter reflexo.*

**THE SIMPLE AMPULLARIA.** Shell ovate, scarcely umbilicated,  
spire short, whorls convex, smooth, the last  
rather expanded; olive, encircled with numerous  
blackish-red lines and narrow bands; aperture ovate,  
columellar lip thinly reflected.

*Hab.* — ?

A thin, somewhat expanded shell, scarcely umbilicated  
against the thinly reflected columellar lip, encircled with  
numerous blackish-red pencil lines and narrow bands.

Species 99. (Fig. a, b, Mus. Cuning.)

**AMPULLARIA CERASUM.** *Amp. testâ subglobosâ, minutè  
umbilicatâ, spirâ parvisculâ, ventâ, anfractibus con-  
cavis, longitudinaliter plicato-striatis; uterâ, fasciis quin-  
que, pallidioribus fasciatâ; aperturâ rotundato-ovâ,  
labro reflexo, riveleâ ovata.*

**THE CHERRY AMPULLARIA.** Shell subglobose, minutely  
umbilicated, spire rather small, sharp, whorls con-  
vex, longitudinally plicately striated; ash-olive, very  
faintly banded; aperture rotundately ovate, lip re-  
flected, bright scarlet.

HANLEY. Conch. Miscellanea

*Hab.* Mexico.

Of an obscure ash-olive colour, with a striking, bright  
cherry-coloured lip.

Species 100. (Fig. a, b, Mus. Cuning.)

**AMPULLARIA PAUCIA.** *Amp. testâ subobovata, superâ  
foratâ, levitè, spirâ brevissimâ, uterâ, anfractibus  
sepe decem-plicatis, debite concavis, utraque latè  
subexpansa; uterâ, fasciis sublinearibus, fasciis quin-  
que, laciniosis circulatâ; aperturâ ovâ, riveleâ ovata.*

**THE OPEN-MOUTHED AMPULLARIA.** Shell subobovate,  
imperforated, thin, spire very short, obtuse, whorl-  
slantingly flattened round the upper part, then con-  
vex, the last very widely expanded; greenish-olive,  
encircled with irregular black lines; aperture large,  
expanded.

*Hab.* — ?

A thin open-mouthed species, belonging to the same  
peculiar type of the genus as the large *A. Neritoides*.

Species 101. (Fig. a, b, Mus. Cuning.)

**AMPULLARIA INTERMEDIA.** *Amp. testâ obliquè globosâ,  
subdepressâ, angustè umbilicatâ, spirâ brevi, obtusâ,  
plus minus expansâ, anfractibus angustis, superâ planis-  
satis, longitudinaliter striatis; riveleâ subovata,  
fasciis angustis olivaceis circulatâ; aperturâ fere cir-  
culari, expansâ, foveâ riveleâ ovata, labro columellari  
levitè reflexo.*

**THE INTER-MEDIATE AMPULLARIA.** Shell obliquely glo-  
bose, rather depressed, narrowly umbilicated, spire  
short, obtuse, more or less coded, whorls narrow,  
flattened at the upper part, longitudinally striated;  
reddish-orange, encircled with narrow olive bands;  
aperture nearly circular, expanded, vividly coloured  
within, columellar lip thinly reflected.

*Hab.* — ?

A very distinct and beautiful species, of an obliquely  
expanded depressed form, of a warm orange-colour, en-  
circled with narrow olive bands, the colouring being par-  
ticularly warm and bright in the interior of the shell.

Species 102. (Mus. Cuning.)

**AMPULLARIA OLEA.** *Amp. testâ subglobosâ, rive umbilicatâ,  
spirâ brevissimâ, anfractibus rotundatis, longitudinaliter  
striatis; uterâ, fasciis laciniosis angustis  
angustis-rufis distinctis circulatâ; aperturâ pyr-  
iformi-ovata.*

**THE OLIVE AMPULLARIA.** Shell subglobose, scarcely  
umbilicated, spire rather short, whorls rounded, lon-  
gitudinally striated; shining olive, encircled with two  
distant narrow blackish-red bands; aperture pyr-  
iformly ovate.

*Hab.* —

Of a peculiar compact subglobose form, with a shining  
olive surface, encircled with two distant linear bands.







174 a.



175



176 a.



177 b.



178 a.



179 b.



180 a.



181 b.



182 a.



183 b.











105a



105b



106



107



108



109



110

# AMPULLARIA.

PLATE XXIII.

Species 109. (Mus. Hanley.)

**AMPULLARIA LAMBERTI.** *Sup. testis gibbosa, subconicoide, basi attenuata et effusa, imperforata, spiris hexacostis, subcylindricis, subcylindricis, debile prominens; suturem argentea, lineis cinereis confinis; aperture ovata, basi truncata.*

**LARGE SPECIES.** Shell ovate, globose, narrowly umbilicated, rather thin; spire obtuse, whorls round, concentrically finely striated, olive-green, encircled with blackish-lime bands; aperture ovate, somewhat obtuse.

Philippi, Zeitschrift für Malak., 1848, p. 192.

*Hab.* Madagascar; Largillière.

This shell, which we take to be Dr. Philippi's *A. Lambertii*, is the largest alluded to *A. Dufrenoyi* from Ceylon.

Species 110. (Fig. 6, Mus. Metcalf.)

**AMPULLARIA BIFASCIATA.** *Sup. testis gibbosa, tenui, subinflata, axe umbilicata, spiris hexis, obtusis, subcylindricis, curvatis, turbatis, interfluis, lineis bifasciatis, fuscis; hilum rubrum capsulae; suturem argentea, lineis cinereis confinis.*

**FIG. TWO-LINED AMPULLARIA.** Shell globose, thin, rather inflated, scarcely umbilicated, spire short, obtuse, whorls convex, smooth, shining; livid-flavous, encircled with two distant red-brown bands; aperture ovate, lip slightly effused.

*Hab.* ———?

An interesting species from the collection of Mr. Metcalf, light and globose, with a smooth, shining, livid-fawn surface, encircled round the centre with a band of two reddish lines, and the same at the base.

Species 111. (Fig. 6, Mus. Hanley.)

A fine characteristic specimen of the type which we are referred to determine at Pl. IX. Sp. 11, to represent *A. bifasciata*.

Species 112. (Mus. Hanley.)

**AMPULLARIA BUNYA.** *Sup. testis ovata, subconicoide, basi attenuata et effusa, imperforata, spiris hexacostis, subcylindricis, subcylindricis, debile prominens; suturem argentea, lineis cinereis confinis; aperture ovata, basi truncata.*

**THE DEPRESSED AMPULLARIA.** Shell ovate, subconicoide, imperforate, spire rather short, somewhat convex, rather flattened at the upper part, spire livid-fawn, encircled with green fuscous spirals; suture argentea, somewhat sinuated at the base.

*Hab.* ———?

This species differs from *S. pumila* of the same author, in being of a lighter and more inflated spire, rather attenuated towards the base; it is of a yellow-tinged olive colour, encircled with green lines.

Species 113. (Mus. Hanley.)

**AMPULLARIA BUNYA.** *Sup. testis ovata, subconicoide, basi attenuata et effusa, imperforata, spiris hexacostis, subcylindricis, subcylindricis, debile prominens; suturem argentea, lineis cinereis confinis; aperture ovata, basi truncata.*

**THE BOX AMPULLARIA.** Shell ovate, subventricose, attenuated and effused at the base, imperforated, spire rather short, whorls rather slanting at the upper part, then flatly convex; brownish-flavous, encircled with numerous reddish-olive lines; aperture oblong-ovate.

*Hab.* ———?

Resembling the former species in the contour of the aperture and absence of umbilicus, but more slender and inclined to an obliquity next the suture.

Species 114. (Mus. Hanley.)

**AMPULLARIA HANLEYI.** *Sup. testis turbata, tenui, inflata, axe umbilicata, spiris hexis, obtusis, subcylindricis, curvatis, turbatis, interfluis, lineis bifasciatis, fuscis; hilum rubrum capsulae; suturem argentea, lineis cinereis confinis.*

**HANLEY'S AMPULLARIA.** Shell turbinate, thin, transparent, narrowly umbilicated, spire largely exerted, whorls rounded, rather narrow, smooth, livid-flavous, encircled with red-brown lines; aperture rather small, nearly erect, columellar lip reflected.

*Hab.* ———?

A semi-transparent turbinate species, quite distinct from any that has preceded it.







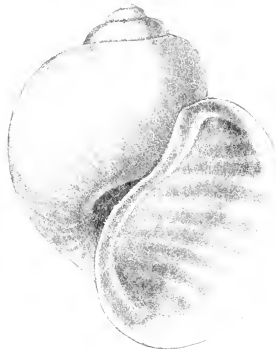
115a



116



115b



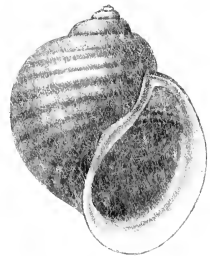
116a



116b



117a



117b











119.a



118



119.b



116



120.a



121



120.b









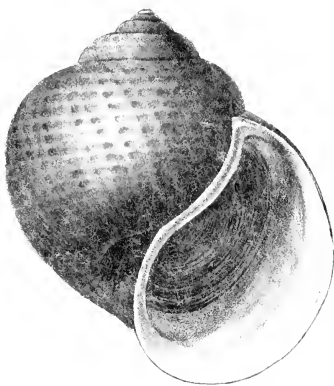
172a



172b



172c



172



172a



172b



172c

# AMPULLARIA.

PLATE XXVI.

Species 122. (Fig. a, b. Mus. Cuming.)

**AMPULLARIA ELEGANS.** *Amp. testâ turbulenta, solidâ, viz. nudiâ alâ, spirâ subexsertâ, anfractibus convexis, subangustis, prope suturam planatis, levibus; intescentibus, fasciâ lineâque rubidofasciâ cingulatâ; apertura rotundato-ovata, parvisculâ, fuscâ alivâ.*

**THE ELEGANT AMPULLARIA.** Shell turbinate, solid, scarcely umbilicated, spire rather exserted, whorls convex, rather narrow, flattened next the suture, smooth; yellowish-white, encircled with red-brown bands and lines; aperture rotundately ovate, rather small, interior white.

Orrigny, Mag. de Zool. 1835, p. 37. Moll. Voy. dans l'Amér. Mérid. p. 378, pl. 52, f. 4 to 6.

*Hab.* Rio Madeira, Tributary of the Amazon, Bolivia. D'Orbigny.

This species chiefly differs from *A. Roissyi*, to which it is nearest allied, by its broader form of convolution, and in the more depressed growth of the whorls next the suture.

Species 123. (Mus. Cuming.)

**AMPULLARIA GHIESBRECHTII.** *Amp. testâ globosâ, solidiusculâ, profunde umbilicatâ, spirâ parvisculâ, depressâ, apice acutâ, anfractibus rotundatis, multique decussatim umbilicis; intescentibus; apertura pyriformi-furcata-ovata, labro effuso, circo rubido-aurato.*

**GHIESBRECHT'S AMPULLARIA.** Shell globose, rather solid, deeply umbilicated, spire rather small, depressed, sharp at the apex, whorls rounded, everywhere decussately marked; dark olive; aperture pyriformly ovate, lip effused, deep ruddy vermilion.

*Hab.* Province of Chiapas, Mexico; Ghiesbrecht.

A remarkably fine species of solid globose form, cha-

racteristically marked throughout, and having a conspicuous deep red aperture.

Species 124. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA FUMATA.** *Amp. testâ semiglobosâ, oblique effusâ, angustâ umbilicatâ, spirâ parvâ, acutâ, anfractibus convexis, levibus, ultimo nullo mariano; olivaceâ, ad suturam fulvescente, fasciâ nigricantibus cingulatâ; apertura ampullâ, labro plano-expanso, fuscâ foveo-fusco lineatâ et lineata.*

**THE SMOKED AMPULLARIA.** Shell semiglobose, obliquely effused, narrowly umbilicated, spire small, sharp, whorls convex, smooth, the last one much the largest; olive, fulvous at the suture, encircled with dark lines; aperture large, lip flatly expanded, interior stained and lined with smoky brown.

*Hab.* Province of Chiapas, Mexico; Ghiesbrecht.

Peculiarly distinguished by the flat expanded formation of the lip, and the painting of the interior, which is stained with shining smoky brown lines and tint.

Species 125. (Mus. Cuming.)

**AMPULLARIA DIRA.** *Amp. testâ subglobosâ, acutâ angustâ umbilicatâ, anfractibus rotundatis, ad suturam planatis, rufâ striatis; olivaceo-aurigente; apertura ovata, labro simplici.*

**THE DISMAL AMPULLARIA.** Shell subglobose, minutely narrowly umbilicated, whorls rounded, rather flattened at the suture, rudely striated; olive-black; aperture ovate, lip simple.

*Hab.* —?

A dull rudely striated blackish-olive species, of the simplest form.









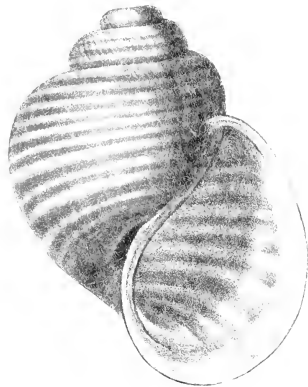
176



177a



177b



178



179a



179b



180

# AMPULLARIA.

PLATE XXVII.

Species 126. (Mus. Hanley.)

AMPULLARIA PLANORBULA. *Amp. testis abbreviata, umbilice n. distincto, spiris brevis, subimmersis, anfractibus expansis, convexis, levibus, ad suturam depressis; lobis subrotundis, foveis linearisque costulis circumlatis; apertura subrotundata, libero simplici.*

THE FLAT AMPULLARIA. Shell discoid, largely unilobed, spire short, subimmersed, whorls narrow, convex, smooth, depressed at the suture, yellowish-white, encircled with chestnut bands and lines; aperture lunar-circular, lip simple.

FOULLET, Kuster, Conch. Cab. *Amp.* p. 26, pl. 7, f. 3.

Hab. —?

A small species, distinguished from all others of the genus by its discoid *Planorbis*-like growth.

Species 127. (Fig. a, b, Mus. Cuming.)

AMPULLARIA DEPRESSATA. *Amp. testis subglobosa, anguste pyriformi, unilobata, spiris obtusa, crassa, anfractibus anguste convexis, stricis levibus deorsum, ad suturam lobis pectatis; lobis costulis, lineis fulvoviridibus circumlatis; ad suturam fulvoviride; apertura ovata, pyriformi, libero simplici.*

THE DEPRESSATE AMPULLARIA. Shell subglobose, narrow and deeply unilobed, spire obtuse, eroded, whorls narrow, convex, finely depressed with striae, broadly flattened at the suture; lobes sub-stant, encircled with intense lines, fulvous at the suture; aperture ovate, rather small, lip simple.

MÉLIAND, Mon. Soc. Phys. de Genève, vol. vii, p. 115, pl. 2, f. 25, 27.

Hab. Brazil.

A rather narrowly convoluted shell, beccusated throughout with fine striae, especially characterized by a broad flattened development of the whorls next the suture.

Species 128. (Mus. Hanley.)

AMPULLARIA SWAINSONI. *Amp. testis oblongo-ovata, anguste pyriformi unilobata, spiris subrotundis, anfractibus convexis, nulloque minute punctulatis; lobis subrotundis, foveis n. acutis angustis cordatis circumlatis; apertura pyriformi-ovata, libero effuso, fovea albiviride.*

SWAINSON'S AMPULLARIA. Shell oblongo-ovate, narrowly deeply unilobed, spire rather exerted, whorls convex, minutely punctured throughout, yellowish-olive, encircled with numerous narrow green bands; aperture pyriformly ovate, lip effused, inferior whitish.

*Ampullario fasciata*, Swainson, Zool. Illus. Seren. Series, vol. ii, pl. 63.

*Ampullaria Swainsoni*, Philippi

Hab. —?

Distinguished from its congeners by its bold oblongo-ovate form of convolution and continuous encircling of narrow bands.

Species 129. (Fig. a, b, Mus. Hanley.)

AMPULLARIA BALANOIDEA. *Amp. testis ovata, solida, obtusè unilobata, spiris subrotundis, obtusa, anfractibus rotundatis, subangustis, tenuissime granoso-striatis, ad suturam planis-declivibus; nigricantibus-costula; apertura pyriformi, ovata, libero effusa, columella calluosa-reflexa, auricula tertia.*

THE AVON-LIKE AMPULLARIA. Shell ovate, solid, with a covered umbilicus, spire rather exerted, obtuse, whorls rounded, rather narrow, very finely granosely striated, flatly slanting at the suture; blackish-chestnut; aperture rather small, ovate, lip effused, columella callously reflected, orange-tinted.

GOULD, MS., Mus. Hanley.

Hab. Liberia, West Africa.

Very closely allied to *A. Plate* which follows, but of a more obliquely effused form, with a more exerted spire.

Species 130. (Mus. Cuming.)

AMPULLARIA PLATEI. *Amp. testis ovata, solidiuscula, imperforata, spiris obtusè exertis, anfractibus subangustis, convexis, minute granoso-striatis, ad suturam obtusè planatis; lobis costulis, foveis angustis fasciis circumlatis; apertura ovata, libero simplici, columella calluosa-reflexa, auricula tertia.*

THE PLATE AMPULLARIA. Shell ovate rather solid, imperforated, spire obtusely exerted, whorls rather narrow, convex, minutely granosely striated, obtusely flattened at the suture; yellowish-chestnut, encircled with narrow brown bands; aperture ovate, lip simple, columella callously reflected, orange-tinted.

*Helix Platei*, Maton, Trans. Linn. Soc. 1809, vol. x, pl. 24, f. 16, 17.

*Ampullaria Platei*, D'Orbigny.

*A. platei*, Nationis, D'Orbigny.

*A. spira etia*, Cuvillier, Spix.

Hab. River Plate.

Distinguished from the preceding species, from Liberia, to which it is singularly closely allied, by its narrower form of convolution and banded painting.



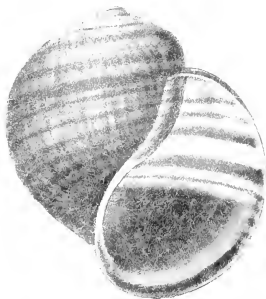




452a



452b



453



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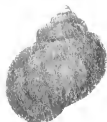
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458

# AMPULLARIA.

PLATE XXVIII.

Species 131. (Fig. a, b, Mus. Cuning.)

AMPULLARIA ATROSOMA. *Amp. testâ globoso-turbinata, eiv umbilicata, spirâ subseriatâ, contractibus rotundatis, rugoso-striatis; nigricante-aurantiâ; apertura ovali, labro ciliatâ circumscripto.*

THE GOLDEN-MOUTH AMPULLARIA. Shell globosely turbinated, scarcely umbilicated, spire somewhat exerted, whorls rounded, roughly striated; blackish-chestnut; aperture ovate, lip bright orange-red.

LEA, MS., Mus. Cuning.

A globosely turbinated shell of solid structure and dark chestnut colour, with a pretty bright orange-red lip.

Species 132. (Fig. a, b, Mus. Cuning.)

AMPULLARIA NUX. *Amp. testâ oblongo-conoidâ, solidâ, eiv umbilicata, spirâ obtusè exsertâ, contractibus convexis, ad suturam abeclitibus et obsolete plicato-convexis; fulvous-aurantiâ; apertura ovali, parvicornâ, labro columellâ callosâ-reflexâ.*

THE NET AMPULLARIA. Shell oblong-conoid, solid, scarcely umbilicated, spire obtusely exerted, whorls convex, slanting and obsolete plicately wrinkled at the suture; fulvous-chestnut; aperture ovate, rather small, columellar lip callously reflected.

*Hab.* Bombay.

A small fulvous-chestnut shell of an oblong conoid form, with the columellar lip rather unusually callously reflected.

Species 133. (Fig. a, b, Mus. Cuning.)

AMPULLARIA AURIFORMIS. *Amp. testâ compressè ovali, obliquè contractâ. Iguonæformi, tenui, profusè umbilicatâ, spirâ parvâ, contractibus convexis, striatis et umbilicatis, rufis obsolete obtusè angulatis, anfractu ultimo compressè flexo; intus albecco; apertura trigono-ovalâ, basi rotundatâ, expansâ, circâlescente.*

THE EAR-SHAPED AMPULLARIA. Shell compressly ovate, obliquely twisted, *Iguonæ*-shaped, thin, deeply umbilicated, spire small, whorls convex, striated and malicated, obsolete and obtusely angled round the upper part, last whorl conspicuously effused; dark olive; aperture triangularly ovate, rotundately expanded at the base, bluish.

*Hab.* Honduras.

The form of this species is quite peculiar, the last whorl being unusually obliquely effused, more particularly towards the base.

Species 134. (Fig. a, b, Mus. Cuning.)

AMPULLARIA SPRUCEI. *Amp. testâ oblongo-conoidâ, solidâ, imperforatâ, spirâ plus minus exsertâ, contractibus declivi-convexis, levibus, haud umbilicatis; fulvo-aurantiâ, prope aperturam obscure ciliâ-fasciatâ; apertura ovali, parvicornâ, labro effuso, columellâ densè callosâ.*

SPRUCE'S AMPULLARIA. Shell oblong-conoid, solid, imperforated, spire more or less exerted, whorls slantingly convex, smooth, not shining; fulvous-olive, faintly red-banded near the aperture; aperture ovate, rather small, lip effused, columella thickly callous.

*Hab.* Tarapoto, east side of the Andes; Spruce.

This species has a peculiar solid *Littorina*-like aspect, with the columellar lip callously reflected over the place of the umbilicus.

Fig. 135. (Mus. De Burgh.)

This interesting shell has been selected from the collection of Mrs. de Burgh, for the sake of giving a more characteristic illustration of *A. zonata* of Spix than that represented at Pl. VII.





AMPULLARIA.

	no.	no.		no.
adusta, <i>Rees</i> . . . . .	III.	11	flava, <i>Rees</i> . . . . .	XIX
Amazonica, <i>Rees</i> . . . . .	XII.	55	fulvifl., <i>Rees</i> . . . . .	VII.
ampullacea ( <i>Heller</i> ), <i>Linn.</i>	X.	45	funata, <i>Rees</i> . . . . .	XXVI
aperta, <i>Philippi</i> . . . . .	XIX.	30	Ghièsbrochii, <i>Rees</i> . . . . .	XXVI
auriformis, <i>Rees</i> . . . . .	XXVII.	133	gigas, <i>Spar.</i> . . . . .	I.
aurostoma, <i>Lea</i> . . . . .	XXVIII.	131	glauca ( <i>Heller</i> ), <i>Linn.</i>	XXIII
balanoides, <i>Gould</i> . . . . .	XXVII	129	glauca, <i>Swainson</i> . . . . .	V.
baltica, <i>Philippi</i> . . . . .	XXII	84	Gossei, <i>Rees</i> . . . . .	XX
bilineata, <i>Rees</i> . . . . .	XXIII	110	Guyanaensis, <i>Guetin</i> . . . . .	XXIII
bulba, <i>Rees</i> . . . . .	XXII.	101	hemistoma, <i>Rees</i> . . . . .	VII
Burdeshi, <i>Rees</i> . . . . .	VI.	59	Hanleyi, <i>Rees</i> . . . . .	XXIII
Brownii, <i>Jay</i> . . . . .	I.	7	hans-trum, <i>Rees</i> . . . . .	V.
buxa, <i>Rees</i> . . . . .	XXIII	112	hepataria, <i>Rees</i> . . . . .	XXVII.
caliginosa, <i>Rees</i> . . . . .	XXV	118	Hondurasensis, <i>Rees</i> . . . . .	III.
canaliculata, <i>Linnæus</i> . . . . .	XXII	79	Hop-tonensis, <i>Lea</i> . . . . .	XIII
carinata, <i>Swainson</i> . . . . .	XIII.	58	immersa, <i>Rees</i> . . . . .	VI.
Cassidifloris, <i>Rees</i> . . . . .	XII.	56	insularum, <i>D'Orbigny</i> . . . . .	IX.
Celebensis, <i>Quoy</i> . . . . .	X.	48	inropecta, <i>Rees</i> . . . . .	XXI
cerastum, <i>Hanley</i> . . . . .	XXI.	99	Javamica, <i>Rees</i> . . . . .	XX.
cinerea, <i>Rees</i> . . . . .	XX.	94	labiosa, <i>Koch</i> . . . . .	XXI.
citrea, <i>Swainson</i> . . . . .	XXIV.	116	Largillierii, <i>Philippi</i> . . . . .	XXIII
Columbicensis, <i>Sowerby</i> . . . . .	V.	25	Latrelli, <i>Rees</i> . . . . .	V.
compacta, <i>Rees</i> . . . . .	XIV.	62	Layardi, <i>Rees</i> . . . . .	VI.
complicata, <i>Rees</i> . . . . .	XIX	89	leucostoma, <i>Swainson</i> . . . . .	IV
conca, <i>H. and</i> . . . . .	II	10	Limey, <i>Philippi</i> . . . . .	XXIV
cornucopia, <i>Rees</i> . . . . .	I	1	lividus, <i>Rees</i> . . . . .	V.
corrupta, <i>Swainson</i> . . . . .	X	66	lubrica, <i>Rees</i> . . . . .	XIII.
crassa, <i>Swainson</i> . . . . .	I.	7	luculona, <i>Swainson</i> . . . . .	XXIII
Cubensis, <i>Rees</i> . . . . .	XXIII	83	Luzonica, <i>Rees</i> . . . . .	VI.
Cumingii, <i>Rees</i> . . . . .	XXII.	84	Lynceusiformis, <i>Rees</i> . . . . .	XXIII
cupulata, <i>Sw.</i> . . . . .	XXVII	130	moesta, <i>Rees</i> . . . . .	XX.
cuprina, <i>Rees</i> . . . . .	I.	1	oxy. <i>Rees</i> . . . . .	X.
derussati, <i>Morand</i> . . . . .	XXVII	127	Malabarica, <i>Philippi</i> . . . . .	XX
depressa, <i>Sw.</i> . . . . .	XXIII	111	maledicta, <i>Sw.</i> . . . . .	VII
dima, <i>Rees</i> . . . . .	XXVI	125	maura, <i>Rees</i> . . . . .	XIII
Dalmanes, <i>Rees</i> . . . . .	XXI	75	megastoma, <i>Sowerby</i> . . . . .	III.
Dalmata, <i>Philippi</i> . . . . .	IV.	18	melancholia, <i>Rees</i> . . . . .	V.
Dysoni, <i>Hanley</i> . . . . .	VI	19	Metralli, <i>Rees</i> . . . . .	XXV
Elisa, <i>Swainson</i> . . . . .	XXIII	85	multicollis, <i>Rees</i> . . . . .	XXV
estrina, <i>Rees</i> . . . . .	XX	93	Nov. <i>Rees</i> . . . . .	XXVII
estrina, <i>D'Orbigny</i> . . . . .	XXVI	122	ocellata, <i>Guetin</i> . . . . .	XXIII
eucastrea, <i>Rees</i> . . . . .	XXI	76	ocellatus, <i>D'Orbigny</i> . . . . .	III
eylindrostoma, <i>Rees</i> . . . . .	XXII.	79	obolus, <i>Rees</i> . . . . .	II
fasciata, <i>Rees</i> . . . . .	IX	44	notabilis, <i>Rees</i> . . . . .	XIV
fasciata, <i>Linnæus</i> . . . . .	X.	48	obula, <i>Rees</i> . . . . .	XIV
Festiva, <i>Swainson</i> . . . . .	XXVII	128	oxy, <i>Rees</i> . . . . .	XXVII
flava, <i>Rees</i> . . . . .	III.	6	oblonga, <i>Sowerby</i> . . . . .	XX

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	Plate	Species	Date	Species
olea, <i>Reeve</i> . . . . .	XXI	102	<i>angosa</i> , Lamarek . . . . .	IV, 18
olivacea, <i>Spiz</i> . . . . .	VIII	38	<i>saxata</i> , <i>Reeve</i> . . . . .	XXII, 108
<i>Oliveri</i> , Deshayes . . . . .	I.	5	<i>seclaris</i> , <i>D'Orbigny</i> . . . . .	XVI, 73
Orouceensis, <i>Zugler</i> . . . . .	X.	45	<i>simplex</i> , <i>Reeve</i> . . . . .	XXI, 98
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<i>pachystoma</i> , Philippi . . . . .	XXIII.	84	<i>spetiosa</i> , <i>Philippi</i> . . . . .	VII, 33
<i>pachystoma</i> , Beuson . . . . .	X.	66	<i>Spixii</i> , <i>D'Orbigny</i> . . . . .	I, 2
Paludinoïdes, <i>Christofori</i> . . . . .	II.	9	<i>Spurcei</i> , <i>Reeve</i> . . . . .	XXVIII, 134
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pilula, <i>Reeve</i> . . . . .	III.	12	<i>Turbinoides</i> , <i>Reeve</i> . . . . .	VII, 37
planorbola, <i>Philippi</i> . . . . .	XXVII.	126	<i>urecus</i> ( <i>Norita</i> ), <i>Muller</i> . . . . .	IV, 18
Plata ( <i>Helix</i> ), <i>Maton</i> . . . . .	XXVII.	130	<i>venustus</i> , <i>Reeve</i> . . . . .	IV, 17
polita, <i>Deshayes</i> . . . . .	VII.	35	<i>vermiformis</i> , <i>Reeve</i> . . . . .	XII, 54
porphyrostoma, <i>Reeve</i> . . . . .	VI.	30	<i>vexillum</i> , <i>Reeve</i> . . . . .	IV, 20
producta, <i>Reeve</i> . . . . .	XV.	68	<i>virescens</i> , <i>Deshayes</i> . . . . .	VII, 35
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ERRATA.

Pl. IV, Sp. 16. For *A. subannalis* read *A. sordida* *Ree.*  
 Pl. V, Sp. 24. For *A. subannalis* read *A. sordida* *Ree.*

MONOGRAPH  
OF THE GENUS  
CANCELLARIA.

There is a pleasure in the public's words  
There is a rapture in the sailor's tale,  
There is a society where none intrudes,  
By the deep Sea, and amidst its coral  
Flow'rs, not Man the less, but Nature's care. — *Beaumont*







2a.



1a.



2b.



3.



4a.



4b.



5b.

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Washburn & Co. N.Y.

# CANCELLARIA.

## PLATE I.

### Genus CANCELLARIA, Lamarck.

*Le testis in seo fissuratus, et ad sa. laevigata, sursum deorsum convexa, a. rectius cancellata, plerumque uniplatis, vel vix bilobata, spirae saluta. plerumque plus minus late angulatae, rursus, subaltili bi-ter-platatae, p. s. p. concave, radiatis, rursus haec a. uniplatis, haec unangulatae, postea convexae, aperturae ovali, foveae p. s. minus, radiis laevigata, labra interstria serrata. Operculum nullum.*

Shell ovate or fusiform, sometimes smooth, mostly elaborately reticulated, sometimes imperforated generally largely deeply umbilicated, suture of the spire generally more or less broadly angularly excavated; columella two-three-plated, plate's mostly strong, small-r towards the base, base sometimes recurved posteriorly; aperture ovate, anterior more or less strongly ridged, lip sometimes serrated. No operculum.

This very beautiful genus, which has risen greatly in the estimation of connoisseurs during the last few years, owing to the comparative rarity of the species and to their very elegant varieties of convolution and sculpture, and our acquaintance with which is chiefly due to the researches of Mr. Cuming and Sir Edward Belcher, and to the beautiful monograph in the 'Thesaurus Conchyliorum' of Mr. Sowerby, occupies a somewhat anomalous position in the system. The shells of the *Cancellaria*, with all the characteristics of those of a carnivorous race of molluscs, such as solid testaceous substance, enamelled apertures, and elaborately latticed sculpture, allied, too, on a general aspect to the more voracious of the class, are nevertheless, according to the observations of M. Deshayes one of the most typical of the genus, the *C. cancellata* of the Mediterranean, a tribe of vegetable feeders unprovided with any operculum.

Apart from the main generic character of the group, namely, the plate's on the columella, the species are singularly unlike in generic aspect. In *C. bilobata* and *pygmaea*, for example, we have a heavy subglobular shell without any sculpture at all, while in *C. crassirostris*, *leucostrea*, and others we have sculpture of the most elaborate kind, and which in the former of these the whorls are so closely convoluted as to leave the columella, or axial pillar, imperforated, or the latter, and especially in that marvellous species the *C. trypanoloma*, the pillar is formed round an nucleus which penetrates inwardly nearly to the apex.

Little more than half-a-dozen species were known to Lamarck. It is to the deep-sea dredgings of the Cuming, reaching from seven to forty fathoms off the shores of Central America and the Philippine Islands, that we are chiefly indebted to the magnificent series figured in this monograph, forming the pride of his collection, and then appears small probability of their being much added to.

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

CANCELLARIA CUMINGIANA. *Con. test. l. oblongo-ovata, ad basim attenuata, subumbilicata, spirae biconvexula, obtusa, radii oblique convoluti, anfractibus ad sat crum. emarginatis, deinde rotundatis, margine anguste subulatis et levatis; subulato-foveis; apertura ovali, pleris triloba, infund. fove. obsolete.*

CUMING'S CANCELLARIA. Shell oblong-ovate, attenuated at the base, slightly umbilicated, spire rather short, obtuse, rarely obliquely convoluted, whorl-channelled at the suture, then rounded, everywhere narrowly grooved and ridged; fawn-brown; aperture ovate, plate's three, the lowest almost obsolete.

PETIT, Guérin's Mag. de Zool.

Hab. — ?

This remarkable species is chiefly distinguished by its obtuse form and rude oblique plan of convolution; the surface is moreover sculptured throughout with narrow excavated grooves, the intermediate ridges being equally narrow, and sometimes faintly linearly grooved in the centre.

### Species 2. (Fig. a, b, Mus. Cuming.)

CANCELLARIA SOLIDA. *Con. test. ovato-globosa, crassa, solida, ad basim convexa-emarginata, imperforata, spirae biconvexula, subita impressa, anfractibus prope apicem decussatim levatis, deinde levibus; aperturae subangusta, foveae levatae, pleris duabus, superior angusta, posterior nulla; nuda, fovea subulata, latera v. d.*

THE SOLID CANCELLARIA. Shell ovately globose, thick, solid, concavely channelled at the base, imperforated, suture very short, suture impressed, whorls decussately ridged near the apex, then smooth; aperture rather narrow, interior ridged, plate's two, the upper narrow, prominent; orange-fawn, interior white.

SOWERBY, *Proc. Zool. Soc.* 1832, p. 52.

*Hab.* Real Llanos, Central America; Cuming.

A very solid globose shell, concavely channelled round the columella on a level with the upper plat, without any indiation of external sculpture except near the apex.

Spec. 83. (Mus. Cuming.)

**CANCELLARIA RETICULATA.** *Con. testâ oblongo-ovata, imperforatâ, solidâ, spirâ exertâ, angustibus, saepeis, antiquè obtusè reticulatâ; albâ, rugulosa, fasciatâ, variegatâ; apertura subangustè ovata, haec in 3. brachiâ, plicis duabus, et 3. prominens.*

**THE RETICULATED CANCELLARIA.** Shell oblong-ovate, imperforated, solid, spire exerted, whorls convex, everywhere obtusely reticulated: whitish, banded and variegated with red-brown; aperture rather narrowly ovate, interior strongly ridged, plates two, very prominent.

*Concha reticulata*, Linnæus, *Syst. Nat.* (12th edit.) p. 1190.

*Cancellaria reticulata*, Lamarck.

*Hab.* West Indies.

This fine old Linnæan species may be recognized as the original type of the genus.

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

**CANCELLARIA ACUMINATA.** *Con. testâ oblongo-ovata, solidâ, imperforatâ, spirâ exertâ, obtusissimâ, angustibus obsolete planilicatis, plicis apicem decussatâ costatis, albâ, rugulosa, fasciatâ et abscissâ; apertura angustè oblongâ, fauce calatâ, lincâ, plicis tribus, apicem distante, prominente.*

**THE POINTED CANCELLARIA.** Shell oblong-ovate, solid, imperforated, spire exerted, very sharp-pointed, whorls convex, absolutely flatly ridged, decussately ribbed near the apex; whitish, banded and clouded with red-brown; aperture narrowly oblong, interior strongly ridged, plates three, the uppermost distant, prominent.

SOWERBY, *Proc. Zool. Soc.* 1832, p. 53.

*Hab.* Guacomya, Central America (dredged in sandy mud at a depth of twelve fathoms). Cuming.

Distinguished from the preceding species by its more compact oblong form and acuminate spire, encircled with flattened ridges which are almost obsolete.







6a.



5a.



6b.



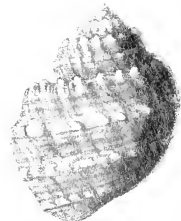
7.



5b.



5c.



5d.

# CANCELLARIA.

PLATE II.

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

**CANCELLARIA BIFLATA.** *Con. testâ ovato-convexâ, laevi, aspidâ, capite profundè umbilicatâ, spirâ erectâ, turbidâ, areolatus superior latè impresso-annulatis, et angustè ciliè obliquè undulatis, deinde convexis, et suboperculatis striatis; sordidè fuscâ; apertura triangulari, basi sinistâ, labro columellari latè reflexo, plicis duabus, parvis.*

**THE BIFLATE CANCELLARIA.** Shell ovately conoid, thin, inflated, largely deeply umbilicated, sparse exerted, turbid, whorls broadly impressly channelled round the upper part, rudely obliquely undulated at the angle, then convex, obtusely wrinkle-ridged and striated; dirty fulvous; aperture triangular-ovate, situated at the base, columellar lip broadly reflected, plait two, small.

SOWERBY, Proc. Zool. Soc. 1832, p. 51.

*Hab.* Gulf of Mexico, Central America (from a muddy bottom in twelve fathoms); Cuming.

Distinguished chiefly by its light inflated growth and large excavated umbilicus.

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

**CANCELLARIA SORDIFERA.** *Con. testâ ovato-convexâ, suboperculata, cap. recurvâ, basi cono excavatâ, spirâ erectâ, angustâ, superiorè excavato-annulatis, deinde convexis, longitudinalitè obliquè costatis, tris angustis, sordidè fulvis; apertura triangulari, basi sinistâ, labro columellari latè reflexo, plicis duabus, parvis.*

**THE SORDID CANCELLARIA.** Shell ovately ventricose, somewhat pear-shaped, imperforated, twistedly recurved at the base, spire turbid, whorls excavately channelled at the upper part, then convex, longitudinally obliquely ribbed, closely spirally deossated with narrow undulated ridges; yellowish-brown; encircled with a narrow whitish band towards the base; aperture trifurcately ovate, plait two, very small.

SOWERBY, Tankerville Catalogue, Appendix, p. 15.

*Con. Nera imperialis, Michelin.*

*Hab.* Japan.

The whorls of this species are rather broadly excavately channelled as in the preceding, but at the base they are closely convoluted into a twisted recurved extremity, leaving no trace of an umbilicus.

Species 7. (Mus. Cuming.)

**CANCELLARIA OBESA.** *Con. testâ ovali, crassâ, ponderosâ, imperforatâ, spirâ brevissimâ, acuminatâ, areolatus convexis, superiorè declivibus, laevibus, obscure spiritalitè striatis; cretas apice a. acutè reticulatis; albidè, aurantio-fusco pallidè undulatis; apertura oblongâ, subangustâ, superiorè sinuatâ, forice valvulari tritâ, plicis duabus, crassissimis, prominentibus.*

**THE STOUT CANCELLARIA.** Shell ovate, thick, ponderous, imperforated, spire rather short, acuminated, whorls convex, slanting at the upper part, smooth, obscurely spirally striated towards the apex, minutely reticulated; whitish, faintly clouded with orange-brown; aperture oblong, rather narrow, situated at the upper part, interior very strongly ridged, plait two, very thick, prominent.

SOWERBY, Proc. Zool. Soc. 1832, p. 52.

*Hab.* Gulf of Dulce, Central America (dredged from the depth of fifteen fathoms); Cuming.

This fine species, of which two specimens in a young state were brought to Mr. Cuming from Puerto Potrero, is distinguished by its obtuse growth and prominently developed columellar plait, the surface of the last whorl being smooth, whilst the earlier whorls are finely reticulated.

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

**CANCELLARIA CASSIDIFORMIS.** *Con. testâ ovato-ventricosâ, pyriformi, imperforatâ, spirâ brevi, acuminatâ, areolatus spiritalitè angustostriatis, et sinuata profunde angustè annulatis, utrinque convexis et undoso-angulatis, nodis subangulatis, acuminatè; apertura oblongo-ovata, subangustâ, labro columellari recurvo, latè expanso, plicis duabus, acutis.*

**THE CASSID-SHAPED CANCELLARIA.** Shell ovately ventricose, pear-shaped, imperforated, spire short, acuminated, whorls spirally wrinkle-ridged, deeply narrowly channelled at the suture, then convex and nodosely angled, nodules rather prickly; orange-fulvous; aperture oblong, rather large, columellar lip recurved, widely spread, plait two, sharp.

SOWERBY, Proc. Zool. Soc. 1832, p. 53.

*Hab.* Panama (young specimens dredged from a sandy muddy bottom, at the depth of sixteen fathoms); Cuming.

Allied to *C. nodulifera*, but differing by its more bulbous inflated proportions, less twistedly recurved base, and less exerted spire.







10a.



12a.



13a.



9a.



11a.



14a.



8a.



10b.



12b.



13b.

# CANCELLARIA.

PLATE III.

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

CANCELLARIA CRYVATA. *Cancellaria elongata* (L.) var. *crivata* (Cuming), *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851.

LE. WHITE. CANCELLED. Shell rather narrowly truncate, imperforate, spine sharply acuminated, whorls spirally broad, 2½ covered, lower tubally ribbed, rather flattened,  $\frac{1}{2}$  covered, or partly freely a lined at the angle, brown, brown, obscurely banded, aperture small, about the very small.

SUBSTRATA. Pe. 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.

THESE ARE THE

Of a very sharp, turned form, ribbed throughout, the ribs being somewhat distant and slightly obliquely waved.

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

CANCELLARIA SPINIFRONS. *Cancellaria spinifrons* (Cuming), *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851.

LE. SPINIFRONS. CANCELLED. Shell compressly ovate, anteriorly flattened, 1½ lined at the base, spine short, acuminated, whorls rather flatly convex, here and there convex, obliquely elevated, elegantly elevated and serrated cords, hind-latitude banded with 7 lines, imperforate small, but near the angle edge of spine 4 lines.

SUBSTRATA. Cuming, *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851.

The typical form of the typical character is very small, from which the present differs specifically by its uniformly broader spiral, and lower aperture.

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

CANCELLARIA SPINIFRONS. *Cancellaria spinifrons* (Cuming), *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851.

LE. SPINIFRONS. CANCELLED. Shell broadly rounded, turned, imperforate, spine sharply exserted, whorl longitudinally flattened, ribbed, spiral linearly covered,

languidly angled at the upper part, ribs rounded at the angle, fulvous, banded with red, aperture rather small, plates three, moderate.

BESHAYES, *Encyclopédie Méthodique*, 1785, vol. 1, p. 185.

*Cancellaria* *Trilobata*, Sowerby.

Hab. Cuyayan, Island of Mindanao, Philippines.

A fine solid angularly elliptical species, of 1½ line fulvous colour splashed with red.

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

CANCELLARIA ELEGANS. *Cancellaria posidonensis* (L.) var. *elegans* (Cuming), *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851.

THE ELEGANT CANCELLARIA. Shell finely ovate, thick, imperforate, spine conoidly acuminated, whorls flatly convex, everywhere elegantly granularly reticulated, narrowly angled at the suture, with red, banded and variegated with reddish-brown; aperture rather small, plates three, moderate.

SOWERBY, *General of Shells*, p. 3.

H. S. Island of Ticao, Philippines ( dredged from sandy mud, at the depth of six fathoms ); Cuming.

This fine species differs from the *C. posidonensis* to which Mr. Beshayes refers it, in being a more markedly fusiform growth, more elegantly sculptured, and in not being excavately channelled at the suture.

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

CANCELLARIA CANCELLATA. *Cancellaria cancellata* (Cuming), *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851.

THE CANCELLED CANCELLARIA. Shell compressly ovate, somewhat fusiform, imperforate, here and there convex, twisted at the base, spine rather short, sharp, whorls convex, obliquely ribbed, variegated with narrow spiral ridges; whitish, variegated with brown, covered with two chestnut lines; aperture small, interior strongly ridged, plates three, prominent.

H. S. *Journal of the Acclimatization Society of London*, vol. 1, p. 10, 1851.

*Cancellaria cancellata*, Lamarck.

Hab. Mouth of the Gambia, West Africa.

This well-known species' plates large, and the interior of certain specimens is dark.









15c.



15a.



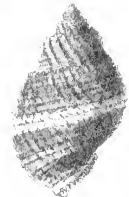
15b.



17a.



16a.



17b.



18a.



16b.



18b.



14b.









20a



21a



22b



22a



23a



23b



24a



24b



25a



25b

# CANCELLARIA.

PLATE V.

Species 19. (Fig. 10, Mus. Cuming.)

CANCELLARIA SCALATA. *Con. testâ subpyramidalâ, albidâ, costâ bulbâ obliq. spirâ exsertâ, infractibus ad suturam. C. testâ subpyramidalâ, albidâ, costâ bulbâ obliq. spirâ exsertâ, infractibus ad suturam. C. testâ subpyramidalâ, albidâ, costâ bulbâ obliq. spirâ exsertâ, infractibus ad suturam.*

THE SUBPYRAMIDAL CANCELLARIA. Shell subpyramidal, minutely unilocular, spir. exserted, whorls impressely excavated at the suture, slowly conically ribbed throughout, ribs finely noduled, rose-fawn, nodules whitish; aperture small, plates three, small.

SOVERBY, *Conch. Illus.* t. 27. Thosaurus Conch., vol. 1, p. 155, pl. 361, f. 26. *Hab.* Ceylon; Dr. Siebold.

Sculptured throughout with delicate closest ribs, finely beaded at distant intervals, the shell being of a subtranslucent pinkish-fawn colour, inclining more to rose towards the apex.

Species 20. (Fig. 11, Mus. Cuming.)

CANCELLARIA GRANOSA. *Con. testâ subpyramidalâ, albidâ, multilobâ, spirâ acuminatâ exsertâ, infractibus. C. testâ subpyramidalâ, albidâ, multilobâ, spirâ acuminatâ exsertâ, infractibus. C. testâ subpyramidalâ, albidâ, multilobâ, spirâ acuminatâ exsertâ, infractibus.*

THE GRANULOUS CANCELLARIA. Shell subpyramidal, with a convex unilobular, spire acuminately truncated, whorls irregularly flattened round the upper part, then longitudinally obliq., spirally decussated with obtusely grooved ridges; yellowish-fawn, sparingly blotched with red; aperture rather small, plates three, small.

SOVERBY, *Conch. Illus.* t. 10, 17.

*Hab.* Peru.

The surface of this species is but indistinctly obtusely beaded, of a yellowish-fawn colour, sparsely blotched red at the angle of the whorls with red.

Species 21. (Fig. 12, Mus. Cuming.)

CANCELLARIA EMBRYIFORMIS. *Con. testâ obliq. ang. uniloculari, costâ arcuata serratâ, costâ bulbâ supra suturâ. C. testâ obliq. ang. uniloculari, costâ arcuata serratâ, costâ bulbâ supra suturâ. C. testâ obliq. ang. uniloculari, costâ arcuata serratâ, costâ bulbâ supra suturâ.*

THE EMBRYO-SHAPED CANCELLARIA. Shell oblong, imperforated, spir. acuminately exserted, whorls slightly concavely impressed to and the upper part, then a con-

vex, decussated throughout with highest stem whitish, banded and stained with rust; aperture rather narrow, interior strongly ridged, plate two, thin, prominent.

*Hab.* ———?

This species partakes of the characters of *C. tenuis* and *C. acuminata*, but is distinctly characterized by the more acuminated elevation of the spire, and more globose form of the body whorl.

Species 22. (Fig. 13, Mus. Cuming.)

CANCELLARIA DEUSSATA. *Con. testâ obliq. uniloculari, albidâ, costâ bulbâ, spirâ brevissimâ, exsertâ, infractibus ad suturam subangulatis, fibrâ triloculari multique cancellatis. C. testâ obliq. uniloculari, albidâ, costâ bulbâ, spirâ brevissimâ, exsertâ, infractibus ad suturam subangulatis, fibrâ triloculari multique cancellatis.*

THE DEUSSATED CANCELLARIA. Shell globosely fusiform, with a covered unilobular, spire rather short, sharp, whorls slightly impressed at the suture, cancellated throughout with corded ridges; unilobular; aperture rather narrow, plates three, moderate.

SOVERBY, *Proc. Zool. Soc.* 1832, p. 55.

*Hab.* Panama ( dredged from a sandy bottom, in ten to thirteen fathoms ); Cuming.

Of a somewhat *Trochus*-like form, openly reticulated throughout with rather distant narrow raised cords.

Species 23. (Fig. 14, Mus. Cuming.)

CANCELLARIA CIRCOLATA. *Con. testâ subfusiformi-turritâ, aculeoventrâ, imperforatâ, spirâ exsertâ, infractibus supra suturâ angulatâ, costâ angulatis, dentic. plangens. C. testâ subfusiformi-turritâ, aculeoventrâ, imperforatâ, spirâ exsertâ, infractibus supra suturâ angulatâ, costâ angulatis, dentic. plangens.*

THE CIRCULATE CANCELLARIA. Shell somewhat fusiformly turritoid, rather solid, imperforated, spire exserted, whorls narrowly obtusely angled, then flatly convex, obliquely longitudinally wrinklerough, decussated with spiral linear grooves, fulvous translucent; aperture rather small, plates two, narrow, rather prominent.

HINDS, *Zool. Voy. Sulphur*, Moll. p. 41, pl. 12, f. 7, 8.

*Hab.* Gulf of Papagayo and San Blas (in seven to fourteen fathoms); Hinds.

Of a solid insiformly turritoid growth, superficially cancellated with oblique longitudinal waved ridges and spiral linear grooves.









25a



25b



25c



26a



26b



26c



26d



26e



26f



26g

Species 25. (Fig. 3, Mus. Cuming.)

CANCELLARIA PUNEBERA. *Can. testis subpyramidalis, unilobata, spiræ acuminatæ, inflexionibus ad angulum, aperturæ moderatæ, columella cæcitate, costis spirælae subintersecantibus, spirælae excavatæ, subdissepitæ, luteo albæ; aperture parvæ, platis tribus, moderatæ.*

SPECIES UNILOBED CANCELLARIA. Shell subpyramidal, unilobed, spiræ acuminated, whorls flatly inflexed at the suture, then obliquely ribbed, the ribs spicily hooked at the angle; spirally excavated; luteo fawn, ridges white; aperture small, hooked in the interior, platis three, moderate.

Loc. — Conch. Flus. E. 20. Theaurus Conch. vol. ii. p. 253, pl. 96. F. 84 to 86.

Loc. of Manila (in sandy mud at the depth of five fathoms): Cuming.

This rarely found species is peculiarly characterized by the hook-headed termination of the ribs, which are marked by a line with white encrustages.

Species 27. (Fig. 6, Mus. Cuming.)

CANCELLARIA SERRATA. *Can. testis pyramidalis, unilobata, spiræ acuminatæ, inflexionibus ad angulum, aperturæ moderatæ, columella cæcitate, costis spirælae subintersecantibus, spirælae excavatæ, subdissepitæ, luteo albæ; aperture parvæ, platis tribus, moderatæ.*

THE TWO-LANED CANCELLARIA. Shell pyramidal, unilobed, spiræ acuminated, whorls largely inflexed at the suture, sharply angled, obliquely ribbed, ribs narrow, distally raised at the angle; fulvous-fawn banded with white; aperture small, platis three small.

Loc. — Ann. Mus. Brit. vol. iv. p. 403.

Hab. West Indies.

It is not possible to determine, satisfactorily, which species is the Lunar Skin *C. serrata*. The shell here figured is not assigned to it by Mr. Sowerby.

Species 29. (Fig. 5, Mus. Cuming.)

CANCELLARIA MELANOTOMA. *Can. testis ovali, unilobata, spiræ acuminatæ, inflexionibus ad angulum, aperturæ moderatæ, columella cæcitate, costis spirælae subintersecantibus, spirælae excavatæ, subdissepitæ, luteo albæ; aperture parvæ, platis tribus, moderatæ.*

THE TWO-MOUTH CANCELLARIA. Shell ovate, somewhat

ventricose, imperforated, spiræ acuminated, unilobed, whorls convex, closely depressed throughout, with fine ridges; fulvous-white, stained red behind with red-brown; aperture ovate, columella somewhat excavated, broadly channelled, spirælae three, moderate.

Loc. — Zool. Soc. 1845, p. 137.

Hab. — ?

Chiefly distinguished by its wide-spaced channelled lamina around the columella of a black purple-brown colour.

Species 27. (Fig. 4, Mus. Cuming.)

CANCELLARIA BIVASATA. *Can. testis profusius oblonga et basi attenuata, imperforata, spiræ erectæ, inflexionibus planis, planisque, luteo albæ, aperturæ moderatæ, columella cæcitate, costis spirælae subintersecantibus, spirælae excavatæ, subdissepitæ, luteo albæ; aperture parvæ, platis tribus, moderatæ.*

THE TWO-LANED CANCELLARIA. Shell fusiformly oblong, attenuated at the base, imperforated, spiræ erect, whorls flatly convex, densely encrusted without with small close-set ridges; reddish-fawn, encircled with two faint bands; aperture oblong-oval, columella arched, three-plat d.

Loc. — Zool. Soc. vol. ii. p. 181.

Can. Thaur. oblonga. Kienner.

Hab. Straits of Malacca (in coarse sand); Hindis.

The short description of *C. oblonga* in the Appendix to the Tankerville Catalogue does not agree with this fusiform *Melano*-like species.

Species 28. (Fig. 7, Mus. Cuming.)

CANCELLARIA TENTILE. *Can. testis subpyramidalis, unilobata, spiræ acuminatæ, inflexionibus ad angulum, aperturæ moderatæ, columella cæcitate, costis spirælae subintersecantibus, spirælae excavatæ, subdissepitæ, luteo albæ; aperture parvæ, platis tribus, moderatæ.*

THE TENTILE CANCELLARIA. Shell subpyramidal, slightly unilobed, spiræ acuminated, whorls impressly excavated at the suture, then obliquely longitudinally ribbed, decussated with faint spiral ridges; reddish-fawn tint, here and there white-dotted on the ribs; aperture small, platis three, moderate.

Loc. — J. Mus. Brit. vol. iv. p. 403.

Hab. Moluccas.

An elegant species, conspicuously distinguished by its chestnut-red colour, sparsely dotted on the ribs with white.







24a



25a



26a



27a



28a



29a



30a



31a



32a



33a

# CANCELLARIA.

PLATE VII.

Species 29. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA BEIGERII.** *Con. testā ovato-rotundata, late profunde umbilicata, spirā brevissimā, turritā, ascrectibus ut superioribus late excavatis, ovale angulatis, longitudinaliter rotunde costatis, tenuē spiralliter latis; rufocastaneā, et raris apicula alba; apertura triangulari ovate basi sinuata, platis tribus, subparvulatis.*

**THE TWO-COLORED CANCELLARIA.** Shell ovately ventricose, broadly deeply umbilicated, spine rather short, turreted, whorls broadly excavated at the suture, sharply angled, longitudinally distinctly ribbed, faintly spirally ridged; reddish-chestnut, white towards the apex; aperture triangularly ovate, situated at the base, platis three, rather prominent.

**HAWKS, Zool. Voy. Sulphur, Moll. p. 43, pl. 12 f. 13, 14.**

*Hab.* Island of Sumar, Philippines; Cuming.

A simply angled roundly turreted shell, with the longitudinal ribs rather distant from each other.

Species 30. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA HYMANTOMA.** *Con. testā pyramidali-ovata, solida, subangulose umbilicata, spirā obtuse turritā, inflexione superiore vix angulatis, longitudinaliter crassiusculis, saleis limbricibus spirallibus deessatis; lutescentibus, rufifusca corallitā et fuscata; apertura parvā foveā latis et corrugatā, vicinē angulata, platis tribus, angustis.*

**THE RED-MOUTHED CANCELLARIA.** Shell pyramidally ovate, solid, rather narrowly umbilicated, spine obtusely turreted, whorls rudely angled round the upper part, longitudinally thickly ribbed, decessated with spiral fovear grooves; yellowish-white, blotched and banded with red-brown; aperture small, interior ridged and wrinkled, bright red, platis three, narrow.

**SOWERBY, Pro. Zool. Soc. 1832, p. 54.**

*Hab.* Gallapagos Islands (dredged from a sandy bottom, at a depth of ten to sixteen fathoms); Cuming.

A solid rudely sculptured shell, with a characteristic arched aperture.

Species 31. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA CHRYSOSTOMA.** *Con. testā subglobosa, vix umbilicata, spirā subparvū alidatā, superā parvā angulata, costis crassis et liris vix deessatis; corallitibus et raris spirallibus latis et punctatis, apertura rotundatā-ovata, foveā latis et corrugatā, vicinē angulato-angulata, platis tribus, prominentibus.*

**THE GOLDEN-MOUTH CANCELLARIA.** Shell subglobose, scarcely umbilicated, spine subpyramidal, whorls but little angled at the upper part, rudely decessated with thick ribs and ridges; bluish-white, sparingly

dotted and lined with chestnut; aperture rotundately expanded, interior ribs flat and wrinkled, bright orange-red, platis three, prominent.

**SOWERBY, Pro. Zool. Soc. 1832, p. 54.**

*Hab.* Panama and St. Elena (dredged from a sandy bottom, at the depth of from eight to ten fathoms); Cuming.

Obscurely rudely decessated with ribs and ridges, and with a more expanded aperture than the preceding species.

Species 32. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA GASTROOMA.** *Con. testā subglobosa, anguliter profunde umbilicata, spirā turritā, ascrectibus superne latissime excavato-angulatis, longitudinaliter costatis, costis distinctibus, liris spirallibus clathratis; purpurascens-ovata, ensibus-fusca hic illic livida; apertura parvā, trigonā, platis duabus, subobsoletis.*

**THE ANGLE-MOUTH CANCELLARIA.** Shell subglobose, largely deeply umbilicated, spine turreted, whorls very broadly excavately angled at the upper part, longitudinally ribbed, ribs distant, latticed with spiral ridges; purple-white, here and there lined with chestnut-brown; aperture small, triangular, platis two, rather obsolete.

**SOWERBY, Pro. Zool. Soc. 1832, p. 51.**

*Hab.* Conehagua and St. Salvador, Central America (dredged from a sandy bottom, at a depth of about eight fathoms); Cuming.

This fine species is characterized by its broadly angled turreted growth and bold latticed sculpture.

Species 33. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA RIGIDA.** *Con. testā ovata, subanguliter profunde umbilicata, spirā turritā, ascrectibus superne late excavato-angulatis, oblique costatis, costis tenuibus, subdistinctibus, liris subtilibus spirallibus deessatis; lutescentibus, ad angulā purpurascens-fusca maculata; apertura trigonā, ad basin sinuata, triplicata.*

**THE RIGID CANCELLARIA.** Shell ovate, rather largely deeply umbilicated, spine turreted, whorls broadly excavately angled at the upper part, obliquely ribbed, ribs thin, rather distant, decessated with fine spiral ridges; yellowish-lawn, spotted at the angle with purple-brown; aperture triangular, situated at the base, platis three.

**SOWERBY, Pro. Zool. Soc. 1832, p. 53.**

*Cancellaria costata*, Sowerby, Jan *Hab.* Puerto Portero, Central America (from a sandy bottom, at the depth of thirteen fathoms); Cuming.

This species comes near to *C. gastrooma* in form, but is at once distinguished by its more delicate ribs.









221



222



223



224



225



226



227



228



229



230

PLATE VIII.

PLATE VIII.

# CANCELLARIA.

PLATE VIII.

Species 30. (Fig. 1. M. Cuming.)

**CANCELLARIA CANTATA.** *Cava testâ ovali, imperforatâ, spirâ brevissimâ, acutâ, infraorbibus superioribus angustè et obliquè, ad angulâ obsoletè plicatè-undulatis; columella archata; platis tribus; pinnatibus.*

**THE SMOOTH CANCELLARIA.** Shell ovate, imperforated, spine rather short, exserted, whorls narrowly obtusely angled at the upper part, obsoletely plicately undulated at the angle, then smooth; white, obscurely tinged with flesh-brown and blacked at the angle; aperture ovate, closely ridged within, plait three, prominent.

SOVERBY, Conch. Illus. f. 24.

*Hab.* N. W. South Wales.

A smooth species, partaking, like *C. spirata*, of the typical form of the little *Fluxus australis*.

Species 31. (Fig. a, b. M. Cuming.)

**CANCELLARIA NIXENSIS.** *Cava testâ subfusiformi-ovata, umbilicatâ, spirâ brevissimâ, subobtusâ, infraorbibus angustè convexè subretroflexis, latis subultrix genivis natis; columella archata; platis tribus; pinnatis; aperturâ ovata, foveâ radiatâ laticâ, columella archata, platis tribus, undulatis.*

**THE CHINESE CANCELLARIA.** Shell somewhat fusiformly ovate, umbilicated, spine exserted, somewhat obtuse, whorls convexly slanting at the upper part, everywhere diversified with fine granose ridges; whitish, stained and band led with red-brown; aperture ovate, interior strongly ridged, columella arched, plait two, no leura.

*Hab.* China.

A simply evaluated fusiformly oblong shell, with the surface closely demarcated throughout with fine granose linear ridges.

Species 32. (Fig. 2. M. Cuming.)

**CANCELLARIA TURBECULOSA.** *Cava testâ subglobosâ, pinnatâ, umbilicatâ, spirâ brevissimâ, subobtusâ, infraorbibus superioribus convexè, pinnatis, in angulâ serratè-undulatis; columella convexè, striatâ et crenatâ; platis tribus; aperturâ subangulâ, truncatâ, foveâ radiatâ laticâ; columella archata; platis tribus, undulatis.*

**THE BEAUTIFUL CANCELLARIA.** Shell subglobose, deeply umbilicated, spine short, somewhat imbricated, whorls convexly angled round the upper part, serrately la-

minated in the angle, then convexly striated and tubercled; white, aperture very large, triangularly ovate, columellar lip broadly reflected, plait two, moderate, oblique.

SOVERBY, Pro. Zool. Soc. 1832, p. 51.

*Hab.* Iquiqui, Peru ( dredged from a sandy bottom, at the depth of seven fathoms ); Cuming.

Of a peculiar chalk-white aspect allied to *C. ballatus*.

Species 33. (Fig. a, b. Mus. Cuming.)

**CANCELLARIA ORTUSA.** *Cava testâ globosâ, minute umbilicatâ, spirâ brevissimâ, obtusâ, suturâ subimpressâ, infraorbibus reticulatè, longitudinaliter subobsoletè plicatis, spirâ inter regulariter subultrix; columella archata, subangulâ, columella archata, platis tribus, parvis.*

**THE OBTUSE CANCELLARIA.** Shell globose, minutely umbilicated, spine very short, obtuse, suture slightly impressed, whorls rounded, longitudinally somewhat obsoletely plicated, spirally regularly grooved; yellowish-brown; aperture ovate, rather large, columella arched, plait two, small.

DESHAYES, Enc. Méth. Zool., vol. ii. p. 187. *Cuv. Règne Anim. nov. edit. Moll. pl. 52. f. 6.*

*Hab.* — ?

This shell, formerly in the collection of M. Deshayes, and the only example of the species known, is remarkably distinguished by its very obtuse growth.

Species 34. (Fig. a, b. Mus. Cuming.)

**CANCELLARIA PULCHRA.** *Cava testâ ovato-globosâ, rîâ umbilicatâ, spirâ acutè emouida, infraorbibus convexis, superioribus subangulatis, costis obliquis longitudinalibus latis, ac spirâbus genivis angulè claudicatis; columella convexo-foveâ foveatâ et lineatâ; aperturâ parvis-ovata, foveâ radiatâ laticâ, platis tribus, undulatis.*

**THE BEAUTIFUL CANCELLARIA.** Shell ovately globose, scarcely umbilicated, spine sharply conoid, whorls convex, slightly angled at the upper part, litted throughout with oblique longitudinal ribs and spiral ridges; whitish, banded and lined with chestnut-brown; aperture rather small, strongly ridged within, plait three, moderate.

SOVERBY, Pro. Zool. Soc. 1832, p. 50.

*Hab.* St. Elena, West Columbia (from a sandy bottom, at a depth of from eight to ten fathoms); Cuming.

Closely allied to *C. scutis*, but conspicuously distinguished by its many processes upon the ribs.







101



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103



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# CANCELLARIA.

PLATE IX.

Species 36. (Fig. *a, b*, Mus. Cuning.)

**CANCELLARIA AFFINIS.** *Con. testâ ovata, angustâ, apertâ, spirâ multâ, acuta, inflexilibus superiôrê latè excavatis, rugulatis, distinctè convexis, longè obliquè et subparallelè striatis, costis subparallelis, striis obliquis et subparallelis, utrinque dilatatis, fatis, lîris inflexilibus, aperturâ subangustâ, platis tribus, moderatis.*

**VALLED CANCELLARIA.** Shell fusiformly ovate, bluntly umbilicated, spire middling, whorls angularly slanting round the upper part, then rather flat, latticed throughout with oblique and spiral ridges; foliaceous, ridges reddish; aperture rather narrow, platis three, moderate.

Specimens, *Paris, etc.*, Sowerby.

*Pl. C. — ?*

Of a characteristic fusiformly oblong form, neatly latticed throughout without any depression at the suture. Differs from *C. subulata* in form and in not being umbilicated at the lip, while the diaphragm-platis are finer.

Species 37. (Fig. *a, b*, Mus. Cuning.)

**CANCELLARIA BREVIS.** *Con. testâ oblongâ, subparallelè, apertâ, spirâ multâ, costis convexis, inflexilibus, striis subparallelis, utrinque dilatatis, fatis, lîris inflexilibus, aperturâ angustâ, platis tribus, moderatis.*

**SHORT CANCELLARIA.** Shell subglobose, rather largely umbilicated, spire shortly truncated, whorls broadly excavately angled round the upper part, longitudinally obliquely finely ribbed, spirally obscurely finely ridged; whitish, latticed with chestnut-brown about the angle; aperture triangulovate, small, platis three, small.

SOWERBY, *Proc. Zool. Soc.* 1832, p. 54.

*Pl. Parisiæ, Borrero et St. Elm., Cuning.*

Specimens allied to *C. granatosa*, of which it has the appearance of being a small worn specimen.

Species 38. (Fig. *a, b*, Mus. Cuning.)

**CANCELLARIA INDEMITA.** *Con. testâ subparallelè, apertâ, spirâ multâ, costis convexis, inflexilibus, striis subparallelis, utrinque dilatatis, fatis, lîris inflexilibus, aperturâ angustâ, platis tribus, moderatis.*

**UNDOULDED CANCELLARIA.** Shell somewhat squarely oblong, scarcely umbilicated, spire short, acuminate, whorls slanting round the upper part, obscurely angled, then flatly convex, latticed throughout with

longitudinal and spiral ridges; whorls rather angularly but narrowly oblongly excavately angled, ridged lip incident towards the base, platis three, small, prominent.

SOWERBY, *Proc. Zool. Soc.* 1832, p. 54.

*Hab.* Panama.

Distinguished by its oblong-square form, closely latticed sculpture, and undulated lip.

Species 39. (Fig. *a, b*, Mus. Cuning.)

**CANCELLARIA CONVEXATA.** *Con. testâ ovata, angustâ, apertâ, spirâ multâ, costis convexis, inflexilibus, striis subparallelis, utrinque dilatatis, fatis, lîris inflexilibus, aperturâ angustâ, platis tribus, moderatis.*

**THE BURRED CANCELLARIA.** Shell ovate, narrowly umbilicated, spire truncated, whorls broadly excavately angled at the upper part, then convex, longitudinally finely wrinkle-ribbed, ribs finely ribbed, deussated with spiral striae; pale straw-colour, sparingly blotched at the angle with orange-red; aperture triangulovate, platis three, small.

SOWERBY, *Conch. Illus.* f. 28. *The Saurus Conch.* vol. ii. p. 455, pl. 93, f. 19, 23.

*Cancellaria pusilla* Sowerby.

*Hab.* Ceylon (in the sands); *Dr.* Sibbold.

Of elegant form, delicately sculptured and coloured.

Species 40. (Fig. *a, b*, Mus. Cuning.)

**CANCELLARIA CRISPATA.** *Con. testâ ovata, imperforatâ, spirâ multâ, costis convexis, inflexilibus, striis subparallelis, utrinque dilatatis, fatis, lîris inflexilibus, aperturâ angustâ, platis tribus, moderatis.*

**THE CRISP CANCELLARIA.** Shell ovate, imperforated, spire sharply exerted, whorls narrowly angled round the upper part, obliquely longitudinally ribbed, ribs thick, prickly forked at the angle, deussated with spiral striae; whitish, encircled with chestnut-brown bands and lines; aperture ovate, small, interior finely ridged, platis three, small.

SOWERBY, *Conch. Illus.* f. 26. *The Saurus Conch.* vol. ii. p. 452, pl. 96, f. 89.

*Hab.* Island of Negros, Philipines (dredged in the sand, at the depth of five fathoms); Cuning.

Allied to *C. convexata*, from which species it is chiefly distinguished by its very thick ribs.









25a



26a



26b



27a



27b



27c



28a



28b



29a



29b

# CANCELLARIA.

PLATE X.

Species 44. (Fig. a, c, Mus. Cuming.)

**CANCELLARIA AUSTRALIS.** *Con. testâ ventâ, imperforatâ, spirâ acuta, sutureâ impressâ, anfractibus rotundis, liris longis tuberculatis, loricis conjunctis loricisque tenuibus, columellis; apertura parvisculâ, columella arcuata, plicis tribus, medio-latis.*

**THE SOUTHERN CANCELLARIA.** Shell ovate, imperforated, spire acuminated, suture impressed, whorls rounded, decussated with close-set oblique longitudinal ribs, and fine spiral ridges; white; aperture rather small, columella arched, plait three, moderate.

**SOEWERY.** *Couch Illus. sp. pl. f. 23. Thesaurus Couch. vol. ii. p. 112. pl. 95. f. 72. 73.*

*Hab.* New South Wales.

Of an ordinary *livorosa*-like form, strongly decussated throughout with close-set ribs and ridges.

Species 45. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA ALBIDA.** *Con. testâ subfusiformi-oblongâ, solidâ, imperforatâ, liris contortâ, spirâ acuminatâ, anfractibus plano-convexis, ad suturem anguste plicatis, loricâ albis, plicis angulatis, liris pauciculis anfractibus anguste reticulatis; columella; apertura parvâ, angustâ, plicis duabus, sub-rotundibus.*

**THE WHITEISH CANCELLARIA.** Shell somewhat fusiformly oblong, solid, imperforated, twisted at the base, spire acuminated, whorls flatly convex, narrowly puckered at the suture, then slantingly angled, elegantly reticulated throughout with corded ridges; white; aperture small, narrow, plait two, rather prominent.

**HINDS.** *Proc. Zool. Soc. 1843. p. 47.*

*Hab.* Bay of Comaguini, Panama, and Veragua (at a depth of from seven to twenty-three fathoms); Cuming.

This elegantly fusiform species, collected by Mr. Hinds in the voyage of the "Sulphur," is most exquisitely latticed throughout with equidistant raised cord-like ridges.

Species 46. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA CANADICA.** *Con. testâ subfusiformi-ventâ, ventriâ solidâ, imperforatâ, spirâ acutâ acuminatâ, anfractibus rotundis, liris longis tuberculatis, loricis conjunctis, loricisque tenuibus, columellis; apertura parvisculâ, columella arcuata, plicis tribus, medio-latis.*

**THE WHITE CANCELLARIA.** Shell somewhat fusiformly ovate, swollen, imperforated, twisted at the base,

spire sharply acuminated, whorls rounded, but little flattened at the suture, densely nodulose reticulated throughout; white; aperture rather narrow, strongly ridged within, plait two, strong, very prominent.

**SOEWERY.** *Couch Illus. sp. pl. f. 1.*

*Hab.* Polynesia.

This species very closely resembles *C. australis*, but it may be at once recognized by its stronger sculpture, and more prominent columellar plait.

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

**CANCELLARIA VENTRIOSA.** *Con. testâ fusiformi-oblongâ, ventricosâ, imperforatâ, spirâ acutâ acuminatâ, anfractibus superâe plano-convexis, deinde rotundis, liris longitudinalibus et spirâlis, columella; apertura parvisculâ; plicis tribus, angustis.*

**THE VENTRILOSE CANCELLARIA.** Shell fusiformly oblong, ventricose, imperforated, spire sharply acuminated, whorls flatly convex at the upper part, then rounded, decussated throughout with longitudinal and spiral ridges; red-brown; plait three, narrow.

**HINDS.** *Proc. Zool. Soc. 1843. p. 47.*

*Hab.* Red Sea, Central America (at a depth of from sixty to seventy fathoms), and Gulf of Magdalena, California (in sandy mud at seven fathoms); Hinds.

Not much unlike *C. albida*, but of a peculiar red-brown colour, carved with a distinct pattern of sculpture.

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

**CANCELLARIA GEMMULATA.** *Con. testâ globosose-ovâ, solidâ, imperforatâ, spirâ brevi, acutâ, anfractibus superâe rix angulatis, plano-convexis, rixis adalatis, loricisque densè conspicuè decussatis; albâ; apertura subcapitata, plicis tribus, medio-latis.*

**THE GEMMED CANCELLARIA.** Shell globosely ovate, solid, imperforated, spire short, sharp, whorls scarcely angled at the upper part, flatly convex, closely prominently decussated with noduled ridges; white; aperture rather expanded, plait three, moderate.

**SOEWERY.** *Proc. Zool. Soc. 1832. p. 55.*

*Hab.* Bay of Nicoya, Central America (from a sandy muddy bottom); Cuming.

Distinguished from the preceding species chiefly by its more contracted subglobose form and roughly noduled sculpture.







30a.



30c.



30b.



30e.



30c.



30b.



30b.



30a.



30b.



30c.

# CANCELLARIA.

PLATE XI.

Species 49. (Fig. a, b, c, Mus. Cuming.)

**CANCELLARIA MITRIFORMIS.** *Con. testâ fusiformi-elongatâ, imperforatâ, ad basin attenuato-convexâ, spirâ turratâ, anfractibus superioribus declivibus angulatis et convexis, his, liris modularis modique densè decussatis, liris plicatibus, ad labrum elevatis et serratis; columellaâ distinctâ rugulosa; apertura elongata subangusta, columellaâ uniplatâ.*

**THE MITRIFORM CANCELLARIA.** Shell fusiformly elongated imperforated, attenuately recurved at the base, spire turreted, whorls slantingly angulated and convex at the upper part, closely decussated throughout with nodular ridges, the spiral ridges raised and serrated at the lip; red-brown or blackish; aperture rather narrow, columella one-plated.

SOBERBY, *Proc. Zool. Soc.* 1832, p. 51.

*Cancellaria mitriformis*, Sowerby.

*Hab.* Panama (dredged in sandy mud); Cuming.

Distinguished from all other species of the genus by its elongated *Mitra*-like form and serrated lip.

Species 50. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA MACROSPERA.** *Con. testâ ovato-turratâ, ovalipellucida, minute umbilicata, spirâ elongatâ, hic illic variosa, anfractibus ad suturam angustè plicato-serratis, deinde convexis, liris subtilibus ceculatis decussatis; pellucida-albâ; aperturaâ acuta, labro convexo carinato, labro columellari expanso, ovato-lobato, lamellis.*

**THE LARGE SPIRE CANCELLARIA.** Shell acuminate turreted, semi-pellicled, minutely umbilicated spire elongated, here and there varicose, whorls narrowly flatly excavated at the suture, then convex, decussated with fine crenulated ridges; transparent white; aperture very small, lip variously thickened, columellar lip expanded, plaited three, thin.

AVOUS and REUVE, *Moll. Voy. Samarang*, p. 41, pl. 10, f. 2.

*H.* Coast of Borneo, China Sea; Belcher.

An extremely delicate transparent white shell, remarkable for its narrow elongated form of convolution.

Species 51. (Fig. d, f, Mus. Cuming.)

**CANCELLARIA TRIGONOSTOMA.** *Con. testâ ovato-pyramidato-turratâ, Scalaria-formâ, perisoma (per) imperforatâ umbilicatâ, spirâ peraterratâ, angustissimis anfractibus, spirâ turratâ obsolete liris, ad angulum scalarium spatiosa; rugulosa; aperturaâ parvâ, triangulâ, columellaâ biplicatâ, plicis lamellis.*

**THE TRIANGULAR-MOUTH CANCELLARIA.** Shell elegantly pyramidally turreted, Scalaria-shaped, very largely perspective umbilicated, spire much attenuated, whorls sharply triangular, spirally absolutely ridged, spined along the outer angle; pink-white; aperture small, triangular, columella two-plated, plaited three.

*Delphinula trigonostoma*, Lamarek. *Anna. Mus. Nat. Hist. Paris*, p. 88.

*Cancellaria trigonostoma*, Deshayes.

*Le Boristrophe*, Favanne.

*Hab.* Ceylon; Kienbo.

This very remarkable species is convolute, with one side of each triangular whorl so attached to that of the preceding as to form a cone enclosing a large deep perspective umbilicus.

Species 52. (Fig. a, b, c, Mus. Cuming.)

**CANCELLARIA CLAVATULA.** *Con. testâ elongato-turratâ, ad basin recurvâ, imperforatâ, spirâ acutâ, hic illic valde irregulariter variosa, anfractibus plicato-convexis, obtusè longi-umbilicatis, costatis, spirâ turratâ striatâ; c-fusiformi, alba umbilicatâ et foveolatâ; aperturaâ parvâ, columellaâ biplicatâ.*

**THE CLUB CANCELLARIA.** Shell elongately turreted, recurved at the base, imperforated, spire sharp, here and there strongly irregularly varicose, whorls flatly convex, obtusely longitudinally ribbed, spirally striated; red-brown, lobed and banded with white; aperture small, columella two-plated.

SOBERBY, *Proc. Zool. Soc.* 1832, p. 52.

*Hab.* Panama (dredged from a sandy muddy bottom, at seven fathoms); Cuming.

Chiefly distinguished, amongst other peculiarities, by its strong irregular deposit of varices.









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347



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# CANCELLARIA.

PLATE XII.

Species 53. (Fig. *a, b*, Mus. Cuning.)

**CANCELLARIA EXCAVATA.** *Con. testā obliquo-oratā, tenuicatā, minutissimè umbilicatā, spirā turratā, acutā, anfractibus ad suturam latè profundè excavatis, ad angulum carinatis, deinde planatis, levibus, alentibus; peritridio albā; apertura subplaitata-acutā, fovea tenuilobatā, columellā arcuatā, triplaitā.*

**THE EXCAVATED CANCELLARIA.** Shell oblong-ovate, rather thin, very minutely umbilicated, spire turreted, sharp, whorls broadly deeply excavated at the suture, keeled at the angle, then flattened, smooth, shining; transparent white; aperture somewhat squarely ovate, finely ridged within, columella arched, three-plaited.

SOWERBY, Pro. Zool. Soc. 1848, p. 137.  
*Hab.* South Australia.

This very delicate transparent white *Eburna*-like species is remarkably characterized by its very broad and deeply excavated sutural channel.

Species 54. (Fig. *a, b*, Mus. Cuning.)

**CANCELLARIA ARTICULARIS.** *Con. testā acuto-moidē, angustè profundè umbilicatā, spirā acutè exsertā, anfractibus ad suturam angustè subprofundè excavatis, deinde curvatis, obliquo longitudinalliter subtiliter costatis, spiritaliter obscure latis, costis minutè nodulatis, nodulis ad angulum protractioribus; liris curvatis, nodulis albis; apertura trigono-oratā, subexpansā, fovea cutide liratā, columellā triplaitā.*

**THE ARTICULATED CANCELLARIA.** Shell ovately conoid, narrowly deeply umbilicated, spire sharply exserted, whorls narrowly rather deeply excavated at the suture, then convex, obliquely longitudinally finely ribbed, spirally faintly ridged, ribs minutely noded, nodules more prominent at the angle; livid flesh-colour, nodules whitish; aperture triangularly ovate, rather expanded, interior strongly ridged, columella three-plaited.

SOWERBY, Conch. Illust. sp. 34, f. 32.  
*Hab.* Ceylon. Dr. Sibbald.

A most elegantly sculptured species, with somewhat of the general aspect of a *Nassa*.

Species 55. (Fig. *a, b*, Mus. Cuning.)

**CANCELLARIA PISCATORIA.** *Con. testā oratā, elevatè umbilicatā, ad basin subcavitatā, spirā abbreviatā, anfractibus superè excavato-angulatis, ad angulum anfractis-nodulatis, deinde convexis, liris arcuatis, deussatis; viarum-albā, liris-olivaceis turrā et abbreviatā, columellā arcuatā, obscure multiploitā.*

**THE FISHERMEN'S CANCELLARIA.** Shell ovate, with a covered umbilicus, somewhat twisted at the base, spire sharply attenuated, whorls excavately angled at the upper part, prickly noded at the angle, then convex, deussated with prickly ridges; ash-white, stained and clouded with livid olive, columella arched, obscurely one-plaited.

*Buccina piscatorina*, Gmelin, Syst. Nat. p. 8196, no. 116.

*Cancellaria piscatoria*, Deshayes.

*Cancellaria nodulosa*, Lamarck.

*Nassa indusa*, Martini.

*Le Sol'at*, Adanson.

*Hab.* Mouth of the Gambia, West Africa.

A somewhat abnormal form of the genus, with only a single indistinct plait on the columella.

Species 56. (Fig. *a, b*, Mus. Cuning.)

**CANCELLARIA SPIRATA.** *Con. testā ovatā, minutè superficialiter umbilicatā, spirā brevissimā, acutā, anfractibus plano-curvatis, ad suturam profundè excavatis, prope apicem longitudinalliter costatis, ad basin spiritaliter striatis; albiā, carina-fiatā, ad angulum nodulis arcuatis-rufis emarginatā; apertura ovatā, fovea cutide liratā, columellā arcuatā, triplaitā.*

**THE SPIRAL CANCELLARIA.** Shell ovate, minutely superficially umbilicated, spire rather short, sharp, whorls flatly convex, deeply excavated at the suture, longitudinally ribbed near the apex, spirally striated at the base; white, flesh-tinged, encircled with orange-ridged spots at the angle, aperture ovate, strongly ridged within, columella arched, three-plaited.

LAMARCK, Anim. sans vert. vol. ix. p. 498.

*Hab.* Garden Island, Swan River.

This shell so nearly resembles the *Eburna australis* that, as we have shown in speaking of that species, it has been confounded with it by very high authorities. The pre-

sence of the columellar plait in the shell assigned to *Cancellaria* is decisive.

Species 24. (Fig. a, b, M.-C. Cunningham.)

**CANCELLARIA COSTIFERA.** *Con. testâ rotatâ, latè superficialitè umbilicata, spirâ turreatâ, angustatâ supercolatâ excavato-angulatis, obliquè longitudinalitè costatis, spirallitè substriatis; oribus perparvis, lineis raris interruptis cingulatis, angulo costisq; hinc illinc albis; aperturâ triangulo-rotatâ, columella areolata, triplicatâ.*

**THE RIBBED CANCELLARIA.** Shell ovate, broadly spirally

facially umbilicated, spire turreted, whorls broadly excavately angled at the upper part, obliquely longitudinally ribbed, spirally faintly striated; livid-purple, encircled with interrupted red lines, angle and ribs here and there white; aperture triangularly ovate, columella areoled, three-plaited.

SOWERBY, Conch. Illus., sp. 33, f. 31.

*Hab.* Island of Burias, Philippines (in coarse sand at the depth of nine fathoms); Cuming.

The most striking peculiarity of this species is its painting of interrupted red lines upon a dull livid-purple ground.





57a



58a



59b



60a



61a



61b



62b



62a



62b



63b

# CANCELLARIA.

PLATE XIII.

Species 58. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA SEMI-DISJUNCTA.** *Can. testā ovatā, latissimè apertè umbilicatā, spirā largè exsertā, anfractibus ad suturam latissimè excavatè angulatis, angulo obtuso, spirāliter liris et excavatè sulcatis, liris salsicque impresso-striatis; spathulæ, aurantio-fusca lineatā et uncinatā; aperturā trigonā, columellā biplicatā.*

**THE HALF-DISJOINED CANCELLARIA.** Shell ovate, very broadly openly umbilicated, spire loosely exserted, whorls very broadly excavately angled at the suture, angle obtuse, spirally ridged and excavately grooved, ridges and grooves impressly striated; fawn-colour, tinged and spotted with orange-brown; aperture triangular, columella two-plaited.

SOWERBY, *Proc. Zool. Soc.* 1815, p. 127.

*Hab.* Cagayan, Island of Mindanao, Philippines (from sandy mud at the depth of twenty-five fathoms); Cuming.

Readily distinguished by its loose manner of convolution, the last whorl being nearly disjoined from the preceding.

Species 59. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA VERRILLVII.** *Can. testā ovatā, minute umbilicatā, spirā revorsantē, ovatā, anfractibus convexis, ad suturam angustè obtusè excavatis, longitudinaliter obliquè costatis, stris decussatis spirālibus decussatis; costarum-rufis; aperturā ovatā, fauce liriatā, pliris tribus parvis.*

**VERRILL'S CANCELLARIA.** Shell ovate, minutely umbilicated, spire rather short, sharp, whorls convex, narrowly obtusely excavated at the suture, longitudinally obliquely ribbed, decussated with spiral raised striae; chestnut-red; aperture ovate, interior ridged, plait three, small.

KILNER, *Coquilles Vivantes*, p. 17, pl. 5. f. 3.

*Hab.* —?

Allied, both in respect of form and colour, to *C. Littorinæformis*, but more prominently sculptured.

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

**CANCELLARIA RUGOSA.** *Can. testā subglobosā, solidā, imperforatā, anfractibus rotundatis, superne obtusè angulatis, obliquè rufè tuberculato-costatis, spirāliter sulcatis; pallidè straginatā, ad angulum aurantio-rufā lineatā; aperturā ovatā, subapansā, fauce rufè liriatā, columellā triplicatā.*

**THE WRINKLED CANCELLARIA.** Shell subglobose solid, imperforated, whorls round, obtusely angled round the upper part, obliquely roughly tubercularly ribbed, spirally grooved; pale straw-colour, tinged with

orange-red at the angle; aperture ovate, rather expanded, interior strongly ridged, columella three-plaited.

LAMARCK, *Mém. sans vert.* vol. ix. p. 498.

*Hab.* China.

The form of this species is nearly globose, the shell being expanded, so to speak, by its rude swollen tuberculated ridges.

Species 61. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA OBLIQUATA.** *Can. testā obliquè globosā, ventricosè expansā, angustè profunde umbilicatā, spirā parvā, ovatā, anfractibus ad suturam sublatè excavatis, decussè rotundatis, obliquè levicostatis, spirāliter elevatè striatis, stris super costas nitidè nodulatis, costis ad angulum subnervatis; fulvescente-albā, rufo-fuscescente lineatā et sparsim punctatā; aperturā repressā, fauce liriatā, labris columellaris tenne reflexo, pliris tribus.*

**THE OBLIQUE CANCELLARIA.** Shell obliquely globose, ventricosely expanded, narrowly deeply umbilicated, spire small, sharp, whorls rather broadly excavated at the suture, then rounded, obliquely thinly ribbed, spirally elevately striated, striae neatly noduled on the ribs, ribs slightly prickled at the angle; fulvous-white, stained and sparingly dotted with red-brown; aperture expanded, interior ridged, columellar lip thinly reflected, plait three.

LAMARCK, *Mém. sans vert.* vol. ix. p. 498.

*Hab.* Bay of Manila (in sandy mud at the depth of eight fathoms); Cuming.

A most elegantly-formed neatly sculptured species, of a delicate, shining, fulvous-white colour, sparingly tinged and dotted with reddish-brown.

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

**CANCELLARIA LITTORINÆFORMIS.** *Can. testā ovatā, profunde umbilicatā, levicostā, anfractibus superne angustè angulatis, decussè declivè-convexis, anfractibus decussatis striatis; rufescente-castaneis; aperturā subangustè ovatā, columellā triplicatā.*

**THE LITTORINA-LIKE CANCELLARIA.** Shell ovate, deeply umbilicated, rather thin, whorls narrowly angled at the upper part, then slantingly convex, decussately striated throughout; reddish-chestnut; aperture rather narrowly ovate, columella three-plaited.

SOWERBY, *Conch. Illus.* f. 14.

*Hab.* Ceylon.

Of precisely the typical form of *Littorina*, faintly sculptured throughout with decussating striae.









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634



635



636



637



638



639



640



641



642

# CANCELLARIA.

PLATE XIV.

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

**CANCELLARIA SPERVIA.** *Con. testâ ovata, angustè umbilicatâ, spirâ acutè truncatâ, anfractibus superioribus excavato-umbilicatis, subaequalibus, costis erectis, costis pliciferis tribus; albidâ, limbo-suturâ fuscâ, umbra alba, apertura triangulari ovata, foveâ levissimè reticulatâ, columella tripartita.*

**THE SPERVIED CANCELLARIA.** Shell ovate, narrowly umbilicated, spine sharply truncated, whorls rather broadly (separately) angled at the upper part, thinly longitudinally ribbed, ribs sharply indistinctly serrated, whitish, stained with livid olive, white-banded in the middle; aperture triangularly ovate, ridged within, columella three-plaited.

*Hab.* —?

An elegantly sculptured species, the ribs being unusually thin, erect and sharply faintly serrated.

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

**CANCELLARIA CORONA.** *Con. testâ subglobosâ-ovata, excavatâ, anfrâ umbilicatâ, spirâ acutâ, anfractibus rotundatis, ad suturam parum angulatis, liris tenuibus, costis erectis, plicis tribus; fulvescente; aperturâ parâ ovata, foveâ plicis tribus, foveâ.*

**THE CROWNED CANCELLARIA.** Shell subglobosely ovate, rather thick, minutely umbilicated, spine sharp, whorls rounded, but little angled at the suture, everywhere neatly lat-oval with eared ridges; light fulvous; aperture rather small, placis three, strong.

*Cancellaria coronata.* Adams (not of Lamarck).

*Hab.* —?

A solid shell, peculiarly neatly latticed throughout with equal-sized ribs.

Species 65. (Fig. a, b. Mus. Cuming.)

**CANCELLARIA LAMELLOSA.** *Con. testâ ovata, sublatè protractâ, anfrâ ovata, spirâ acutè truncatâ, anfractibus superioribus excavato-umbilicatis, subaequalibus, costis erectis, costis pliciferis tribus; albidâ, limbo-suturâ fuscâ, umbra alba, apertura triangulari ovata, foveâ levissimè reticulatâ, columella tripartita.*

*fusca, costis erectis, costis pliciferis tribus; albidâ, limbo-suturâ fuscâ, umbra alba, apertura triangulari ovata, foveâ levissimè reticulatâ.*

**THE LAMELLOSE CANCELLARIA.** Shell ovate, rather broadly deeply umbilicated, spine sharply acuminate, whorls narrowly excavated on the upper part, obliquely longitudinally ribbed, ribs beautifully serrated and lamellated, prickly-hooked at the angle; whitish, spotted with red-brown at the angle; aperture triangularly ovate, ridged within, columella three-plaited.

*Hinds, Zool. Voy. Sulphur, Moll. p. 43. pl. 12. f. 15, 16. Hab. Indian Archipelago.*

A beautifully sculptured species, the ribs being elegantly produced along the edge into lamellae.

Fig. 66. (Mus. Cuming.)

The shell here represented is in a very immature stage of growth, and may be the young of *C. spongylarum*. It however has a finer pattern of sculpture than is usual with that species.

Species 67. (Fig. a, b. Mus. Cuming.)

**CANCELLARIA PYSIDIA.** *Con. testâ globosâ-ovata, imperforatâ, spirâ brevissimâ, acutè truncatâ, anfractibus ad suturam angustè angulatis, obliquè longitudinaliter densè costatis, costis erectis, angustis, umbra pliciferâ levissimè serratâ; albidâ, limbo-suturâ fuscâ, umbra alba, apertura ovata, foveâ levissimè reticulatâ, columella arcuata, plicis tribus, irregularibus.*

**THE HEBBLED CANCELLARIA.** Shell gibbosely ovate, imperforated, spine rather short, sharply acuminate, whorls narrowly angled at the suture, obliquely longitudinally closely ribbed, ribs erect, narrow, beautifully prickly serrated throughout; whitish, faintly tinged with livid brown; aperture ovate, interior marked with red lines, columella arched, placis three, irregular.

*Hab. Mauritius.*

This is one of the most beautifully sculptured species of the genus. The ribs are peculiarly serrated throughout at the edge into short obtuse prickles.







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# CANCELLARIA.

PLATE XV.

Species 8. (Fig. 9.) Mus. Cuming.)

**CANCELLARIA CANCELLARIA.** *Cen. testis nonnulliflorata* (Lamour.) *testis spiralis gracilis, nigroalbida, et saturata* (Poc.) *testis depressa, albescit nigroalbida, longitudo latere costata, costis cuneatis, crassissimis, distinctibus, fere* (Lamour.) *transversis sculptis, lineis costis subconcurrentibus* (Poc.) *testis subglobosa, subglobosa, testis* (Lamour.) *testis depressa, columnella triplaitata.*

**THE COMMON CANCELLARIA.** Shell acuminately auriform, multilobed, spine slender, whorls deeply impressed at the suture, of dusky angled, longitudinally ribbed, ribs raised, compressed, distinct, sculptured with delicate transverse ridges, with a raised line intervening; transparent white, faintly tinged with orange; aperture triangularly ovate, lip expanded, columnella three-plaited.

**HINDS,** *Moll. Voy. Sulphur*, p. 13, pl. 12, f. 5, 6.

*C. cancellaria* (Lamour.) Adams and Reeve.

*Testis* of Megaloma, California (the sandy land, at seven fathoms); Hinds.

Characterized by its exquisitely sculptured dorsal ribs, which give the shell a blackish spotted aspect. Although the identity given by Sir Edward Forbes to *C. testis* of the figure of the *Samaring* is *C. testis*, the species are evidently the same.

Species 9. (Fig. 10.) Mus. Cuming.)

**CANCELLARIA MEGALOMATA.** *Cen. testis nonnulliflorata* (Lamour.) *testis spiralis, costis cuneatis, crassissimis, distinctibus, fere transversis sculptis, lineis costis subconcurrentibus* (Poc.) *testis subglobosa, subglobosa, testis* (Lamour.) *testis depressa, columnella triplaitata.*

**THE MEGALOMATA CANCELLARIA.** Shell acuminately turbid, dorsal elevated, spine sharp, whorls angled round the suture part, longitudinally ribbed, ribs compressed, distinct, transversely striated, white, aperture triangularly ovate, lip rather expanded, columnella three-plaited.

**HINDS** —

Resembling the preceding species in its structure, but more conspicuously striated, and more obviously marked round the upper part of the whorls.

Species 10. (Fig. 11.) Mus. Cuming.)

**CANCELLARIA CANCELLARIA.** *Cen. testis nonnulliflorata* (Lamour.) *testis spiralis, costis cuneatis, crassissimis, distinctibus, fere transversis sculptis, lineis costis subconcurrentibus* (Poc.) *testis subglobosa, subglobosa, testis* (Lamour.) *testis depressa, columnella triplaitata.*

**THE TESTIFORM CANCELLARIA.** Shell cylindrical-oblong, rather stout, imperforated, spine short, con-

ical, suture but little depressed, with flatly convex, gemmose demarcated; whitish, knobby, and sometimes tessellated with purple spots; aperture narrowly oblong, ridged within, columnella strongly two-plaited broadly emarginated.

**SOWERBY,** *Proc. Zool. Soc.* 1842, p. 51.

*Hinds,* Bay of Caracas, St. Elena, and Apiaquia, Central America (firedred from a sandy muddy bottom, at a depth of from seven to ten fathoms); Cuming.

Quite unlike any other species of the genus in its general typical form, as is sufficiently apparent in the figure.

Species 11. (Fig. 12.) Mus. Cuming.)

**CANCELLARIA FORBESII.** *Cen. testis pyramidalis-nuda, angustis subul. testis spiralis, costis cuneatis, crassissimis, distinctibus, fere transversis sculptis, lineis costis subconcurrentibus* (Poc.) *testis subglobosa, subglobosa, testis* (Lamour.) *testis depressa, columnella triplaitata.*

**THE GREEN ISLAND CANCELLARIA.** Shell pyramidally ovate, narrowly multilobed, spine exerted, whorls deeply slantingly excavated at the suture, obtusely keeled at the angle, then flatly convex, smooth, flesh-fibrous, encased with faint brownish lines, blotched with orange brown at the angles; aperture triangularly ovate, lip thickly varicose, columnella arch'd, three-plaited.

**SOWERBY,** *Proc. Zool. Soc.* 1848, p. 127.

*Hinds,* Alagoa bay.

The excavated growing of this species slants inward in a peculiar manner, whilst the shell is characterized by a distinct linear pattern.

Species 12. (Fig. 13.) Mus. Cuming.)

**CANCELLARIA FORBESII.** *Cen. testis nonnulliflorata* (Lamour.) *testis spiralis, costis cuneatis, crassissimis, distinctibus, fere transversis sculptis, lineis costis subconcurrentibus* (Poc.) *testis subglobosa, subglobosa, testis* (Lamour.) *testis depressa, columnella triplaitata.*

**THE WEINKIND CANCELLARIA.** Shell oblong perpendicular, imperforated, spine exerted, rather of thin, weak, flatly convex, longitudinally ribbed below, moderately demarcated with purple lines; ribs convex; aperture narrowly oblong, ridged within, columnella three-plaited, attenuated, two-plaited.

**HINDS,** *Proc. Zool. Soc.* 1843, p. 18.

*Hinds,* Bay of Compuilla (a mud at the depth of six or seven fathoms); Hinds.

Of a very distinct typical form, peculiarly attracted towards the base, and having no external indication of the suture.









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# CANCELLARIA.

PLATE XVI.

Species 73. (Fig. a, b, c, d, Mus. Cuming.)

**CANCELLARIA SEMIOPACULIDA.** *Cun. testâ ovato-reticulata, l. convexâ, ant. distinctâ, umbilicâ, spirâ brevissimâ, acuta, suturâ plicatâ, plicis longioribus, angustissimis, subradialiter obsolete plicatissimis; transversâ longitudinaliter obsolete plicatissimis; columella trispinata; fulvovirescens, subpellucida; ap. leviter emulsa, ad basin attenuatâ, columnâ tripliatâ.*

**THE SEMIOPACULID CANCELLARIA.** Shell ovately convex, rather thin, very minutely umbilicated, spine rather short, sharp, suture deeply impressed, widely rounded at the upper part, longitudinally obliquely plicately ribbed, transversely finely ridged; fulvous, subpellucid; aperture ovate, attenuated at the base, columella three-plaited.

ADAMS and REEVE, *Moll. Voy. Samarang*, p. 42, pl. 10, f. 3 and 3a.

*Hab.* Sooloo Sea.

A light inflated shell, with the suture deeply impressed, peculiarly attenuated at the base.

Species 74. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA ANTIQUATA.** *Cun. testâ ovata, p. truncatâ et p. leviter emulsa, spirâ turratâ, l. convexâ et ant. brevitate distinctâ, suturâ carinata, plicâ plicatâ, delatâ et p. obsolete costatâ, transversâ longitudinaliter obsolete plicatâ; columella trispinata.*

**THE ANTIQUATED CANCELLARIA.** Shell ovate, very thickly and deeply umbilicated, spine turreted, which is broadly rhombogly excavated at the suture, leaved and pricked at the angle, then sharply plicately ribbed, smooth; white; aperture small, triangular, columned, base or obsolete two-plaited.

HINDS, *Moll. Voy. Sulphur*, p. 33, pl. 12, f. 17, 18.

*Hab.* No. 6 (collected from coarse sand, at the depth of twenty-seven fathoms); Hinds.

This elegant little species has the largest umbilicus next

to the remarkable *C. 73* (see also the *Obolus*), and evolved in the same peculiar manner.

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

**CANCELLARIA TENUIS.** *Cun. testâ ovata, convexâ, truncatâ, p. leviter emulsa, spirâ subapiculatâ, angustissimâ et suturâ angustâ distinctâ, costâ longitudinaliter leviter costatâ, transversâ longitudinaliter fulvovirescens; ap. leviter emulsa, ad basin attenuatâ, columnâ tripliatâ.*

**THE THIN CANCELLARIA.** Shell ovate, rather thin, narrowly deeply umbilicated, spine subpyramidal, which narrowly slantingly excavated at the suture, longitudinally lamellately ribbed, transversely finely ridged; fulvous; aperture ovate, attenuated at the base, columella three-plaited.

ADAMS, *Ms.*, Mus. Cuming.

*Hab.* —?

A light semitransparent fulvous shell, chiefly distinguished by the thin laminar structure of the ribs.

Species 76. (Fig. a, c, Mus. Cuming.)

**CANCELLARIA PURPUREFORMIS.** *Cun. testâ oblongo-ovata, imperforatâ, spirâ convexâ, subobtusâ, angustissimâ, plicâ plicatâ, longitudinaliter obsolete plicatâ, transversâ longitudinaliter obsolete plicatâ; ap. leviter emulsa, columnâ arcuatâ, tripliatâ.*

**THE PURPURA-SHAPED CANCELLARIA.** Shell oblong-ovate, imperforated, spine convex, rather obtuse, which is slightly convex, longitudinally obsolete plicated, transversely linearly grooved; brownish-white; aperture ovate, columella arched, three-plaited.

VALENCIENNES, KIERER, *Coquilles vivantes, Cancellaria*, No. 27.

*Hab.* —?

A simple oblong-ovate shell, without umbilicus or any depression at the suture.







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# CANCELLARIA.

PLATE XVII.

Species 77. (Fig. 76, Mus. Cuming.)

CANCELLARIA MINIMA. *Con. testis subglobosa, superfacialiter umbilicata, spirali sublongitudo, angustilobis, imbricata, oblique costatis, costis sparsis, interstitiis subnitide cancellatis; alba, columella fuscovirente; columella obsolete biplicata.*

THE VERY SMALL CANCELLARIA. Shell subfusiform, imperforated, spire rather elongated, whorls rounded, obliquely ribbed, ribs obtusely angled at the upper part, interstices finely cancellated; white, some times brownish; columella obscurely two-plated.

Hab. —?

A minute species, obliquely ribbed, with the interstices neatly latticed with fine transverse ridges.

Species 78. (Pl. a, b, Mus. Cuming.)

CANCELLARIA MITIDA. *Con. testis subrotundata, superficialiter umbilicata, spirali costata, umbilicibus ad suturam angustis, costatis, costis compressis, et breviter pinnatis, costis, subnitide imbricatis; alba, circumscissilis; apertura subquadrato-ovata, fovea leviter, columella non pinnate triplicata.*

THE NEAT CANCELLARIA. Shell ovately turreted, superficially umbilicated, spire sharp, whorls narrowly angled at the centre, ribbed, ribs compressed and very prominent, sharp, with the interstices smooth; white, flesh-tinged; aperture somewhat squarely ovate, ridged within, columella conspicuously three-plated.

ADAMS, MS. Mus. Cuming.

Hab. —?

Distinguished by its sharply developed ribs, which resemble those of *Sabalina* more than in any other species.

Species 79. (Fig. a, b, Mus. Cuming.)

CANCELLARIA COCTILIS. *Con. testis subrotundata, spirali*

*per profunde umbilicata, spirali breviter umbilicata, superficialiter umbilicata, spirali subrotundata, angustilobis, imbricata, oblique costatis, costis sparsis, interstitiis subnitide cancellatis; alba, circumscissilis; apertura subquadrato-ovata, ad basin umbilicis, fovea triplicata.*

THE BARKED CANCELLARIA. Shell ovately globous, narrowly deeply umbilicated, spire rather short, sharp, whorls tumid, obtusely angled at the upper part, rudely nodosely ribbed, transversely ridged; reddish; aperture somewhat squarely ovate, attenuated at the base, columella three-plated.

Hab. —?

A shell of rather tumid growth, decussated with blunt angled ribs and ridges, of a peculiar reddish colour.

Fig. 80. (Mus. Cuming.)

The shell here figured proves to be a variety of *C. pinnata* described at Pl. XII. Sp. 55.

Species 81. (Fig. a, b, Mus. Cuming.)

CANCELLARIA TERNATA. *Con. testis subrotundata, spirali subrotundata, angustilobis, imbricata, longitudinaliter angustilobis, subnitide decussatis, costatis, costis compressis, et breviter pinnatis; alba, circumscissilis; apertura subquadrato-ovata, ad basin umbilicis, fovea triplicata.*

THE FLAILED CANCELLARIA. Shell somewhat fusiformly turreted, imperforated, spire rather slender, whorls flatly angled round the upper part, longitudinally narrowly ribbed, faintly decussately ridged; fuscous-red, filled with brown; columella two-plated.

SOUVERBY, *Proc. Zool. Soc.* 1848. p. 127.

Hab. —?

A slender turreted species, neatly filled with narrow brown bands upon a fuscous-red ground.









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# CANCELLARIA.

PLATE XVIII.

Species 82. (Fig. The Saurus Conch.)

**CANCELLARIA CANCELLATA.** *Con. testâ oblongo-ovata, tenui, plicatâ, marginibus spirâ subobtusâ, angustibus superis, distinctis, acutis, laevibus; buccis; apertura ovali, foveâ, lobis, columella costâ triplicata.*

**FIG. CREAM-COLOURED CANCELLARIA.** Shell oblong-ovate, thin, transparent, imperforated, spine rather obtuse, whorls slantingly convex round the upper part, smooth; cream-coloured; aperture ovate, interior ridged, columella strongly three-plaited.

**SOWERBY, Encyclopédie Méthodique, p. 180. Sowerby, Thesaurus Conchæ, vol. ii, p. 448, pl. 96, f. 105.**

*Hel.* —?

This species is unknown to me. The accompanying figure is from Mr. Sowerby's 'Thesaurus Conchyliorum.'

Species 83. (Fig. Moll. Voy. Sulphur.)

**CANCELLARIA FLATA.** *Con. testâ ovata, v. ovata, tenui, nitida, circumflexâ costata, superâ angustâ, laevibus distinctis, acutis, plicatâ; apertura ovali, foveâ, lobis, columella costâ triplicata, plicâ inferiore auriculâ, natis; gornio, solæ alto, ovali inflexâ.*

**FIG. RAISED CANCELLARIA.** Shell ovate, elongated, non-angulated, whorls ribbed, rugulated at the upper part, dissected with raised lines, suture deep, apertural, peritonea disjointed at the upper part, lip 3-angled within, columella three-plaited, lower plait the largest, undulous small, somewhat concealed, non-imbricated.

**FIG. Moll. Voy. Sulphur, p. 12, pl. 19, f. 3, 4.**

*Hel.* Common (at the depth of thirty fathoms); Hinds.

This species is also unknown to me. The description of it is from Mr. Hinds' in the Mollusca of the Voyage to the Sulphur.

Fig. 15, c, d, e. (Mus. Cuming.)

The specimens here represented are varieties, which it may desirable to figure, of *C. Baccinoides*, described at plate IV.

Species 84. (Fig. a, b. Mus. Cuming.)

**CANCELLARIA BULBIFERA.** *Con. testâ v. angustiplicatâ, circumflexâ costata, spirâ superâ, b. s. angustâ obtusâ, b. s. spirâ parvâ, ovale depressâ plicata, s. b. s. d. impressâ, angustâ auriculâ superâ distinctâ, b. s. s.*

*gata; foveâ, lobis, columella costâ triplicata, plicâ inferiore auriculâ, natis.*

**THE LITTLE BULB CANCELLARIA.** Shell elongate-pyriform, subventricose, solid, imperforated, narrowly attenuated at the base, spine small strongly dissimulately plicated, suture rarely impressed, last whorl slanting round the upper part, smooth; whorls; aperture narrowly oblong, columella three-plaited, uppermost plait very strong.

**SOWERBY, Pro. Zool. Soc. 1822, p. 55.**

*Hel.* Real Lijos, Central America.

Very closely allied to *C. pycnos*, from which it differs in being of a more attenuately oblong form.

Species 85. (Fig. Thesaurus Conch.)

**CANCELLARIA VIRIDULA.** *Con. testâ oblongâ, angustilimbâ, obscure costata, spirâ brevâ costata, spirâ ventrali, angustibus circumflexâ, superâ costâ; apertura ovali, foveâ, lobis, columella costâ triplicata; auriculâ nulla, spirâ ovale pallide auriculâ.*

**FIG. GREENISH CANCELLARIA.** Shell oblong, longitudinally obscurely ribbed, spirally ribbed, spine unangulated, whorls rounded, suture strong; aperture short, smooth, columella absolutely three-plaited; colour none, with a pale green colorless.

*Abund. viridula, Gould. Sowerby, Thesaurus Conchæ, vol. n, p. 449, pl. 96, f. 102.*

*Hel.* —?

Unknown to me. Description and figure copied from Mr. Sowerby's 'Thesaurus Conchyliorum.'

Species 86. (Fig. Gould Extern. Mass.)

**CANCELLARIA CORTHOYI.** *Con. testâ ovato-convexâ, circumflexâ costata, spirâ brevâ costata, spirâ ventrali, angustibus circumflexâ, superâ costâ; apertura ovali, foveâ, lobis, columella costâ triplicata.*

**CORTHOY'S CANCELLARIA.** Shell ovately convex; white, punctulated with coarse revolving lines, and lines of growth, columella three-plaited.

**JAY, Catalogue, 1839.**

*Cancellaria Baccinoides, Cuthouy, Boston Jour. Nat. Hist. vol. 9, p. 105, pl. 3, f. 5.*

*Hel.* Massachusetts Bay, United States (found in fishes), Gould.

This little shell Dr. Gould describes in his Report on the Invertebrata of Massachusetts, as being somewhat abundant, and usually occupied by a hermit crab.



# CANCELLARIA.

	Plate	Species		Page
hemisphaerica, <i>Sowerby</i>	I.	1	Littoriniformis, <i>Sowerby</i>	XVII.
rotunda, <i>Reeve</i>	IX.	39	lyrata, Adams and Reeve	XV
abunda, <i>Reeve</i>	X.	15	macrospira, Adams and Reeve	XI.
striatata, <i>Reeve</i>	XXI	74	Mangeloides, <i>Reeve</i>	XX.
reticularis, <i>Sowerby</i>	XII	54	melanostoma, <i>Sowerby</i>	VI.
opposita, <i>Lamarck</i>	IV	17	minima, <i>Reeve</i>	XVII
costata, <i>Sowerby</i>	X	11	Mitreiformis, <i>Sowerby</i>	VI.
tricolor, <i>Reeve</i>	VII	29	nitida, Adams	XVII
multiloba, <i>Deshayes</i>	VI	27	noduliferum, <i>Sowerby</i>	II.
ovata, <i>Sowerby</i>	IX.	40	notulosa, Lamarck	XII.
Buccinoides, <i>Sowerby</i>	IV.	15	obesa, <i>Sowerby</i>	II.
Buccinoides, <i>Southon</i>	XVIII	86	obliquata, Lamarck	XIII
cellulosa, <i>Sowerby</i>	XVIII	84	oblonga, Kiefer	VI.
ovata, <i>Southon</i>	II	5	obtusata, <i>Deshayes</i>	XIII.
areolata (Fulcata), <i>Linn</i>	III.	13	ovata, <i>Sowerby</i>	IV.
areolata, <i>Sowerby</i>	X.	46	p. sentoria (Buccinoides), <i>Gmel.</i>	XII.
causidiformis, <i>Sowerby</i>	II.	8	pulchra, <i>Sowerby</i>	VIII.
chrysozona, <i>Sowerby</i>	VII.	31	Purpuriformis, <i>Valenc.</i>	IX.
lyrata, <i>Adams</i>	XV	61	pusilla, <i>Sowerby</i>	XI.
layatiana, <i>Sowerby</i>	XI.	52	pyramis, Adams and Reeve	II.
ovata, <i>Reeve</i>	XVII	79	reticulata (Fulcata), <i>Linn</i>	I.
angulata, <i>Sowerby</i>	IX.	12	rigida, <i>Sowerby</i>	XII.
erosa, <i>Reeve</i>	XIV	61	ringosa, Lamarck	XIII
ovata, <i>Reeve</i>	XV	72	scalaria, Lamarck	VI.
ovata, <i>Sowerby</i>	VII	33	scolata, <i>Sowerby</i>	V.
costifera, <i>Sowerby</i>	XII.	57	semi-dissecta, <i>Sowerby</i>	XIII.
Conthocera, <i>Jen</i>	XXIII	86	semipellucida, Adams and Reeve	XVI.
reticulata, <i>Sowerby</i>	VI	21	serrata, <i>Reeve</i>	XIV.
capitata, <i>Sowerby</i>	IX.	63	similaris, <i>Sowerby</i>	III.
Cambringina, <i>Ford</i>	I.	1	Sinuata, <i>Reeve</i>	VIII
dissectata, <i>Sowerby</i>	V.	22	solida, <i>Sowerby</i>	I.
lamarckiana, <i>Reeve</i>	V	21	Spongularia, <i>Deshayes</i>	III.
ovata, <i>Reeve</i>	XXVIII.	83	sprata, <i>Deshayes</i>	XII.
gans, <i>Sowerby</i>	III	12	truncata, <i>Sowerby</i>	XVII.
ovata, <i>Sowerby</i>	XII	53	tonans, Adams	XVI.
ovata, <i>Sowerby</i>	XV.	71	tesellata, <i>Sowerby</i>	XX.
ovata, <i>Reeve</i>	XV	68	trichilis, Kiefer	VI.
annulata, <i>Sowerby</i>	X	18	trigonostoma (Delphinium), <i>Lam.</i>	XI.
trigonostoma, <i>Sowerby</i>	VII	12	Trotaria, <i>Sowerby</i>	III
truncata, <i>Sowerby</i>	V	20	tuberculosa, <i>Sowerby</i>	XVII.
trigonostoma, <i>Sowerby</i>	VII	30	umbilata, <i>Sowerby</i>	III.
astrata, <i>Reeve</i>	XIV	67	umbilata, <i>Sowerby</i>	XI
astrata, <i>Michelin</i>	II	6	ureolata, <i>Reeve</i>	V.
umbilata, <i>Sowerby</i>	IX.	14	ventricosa, <i>Reeve</i>	X.
umbilata, <i>Deshayes</i>	XXIII	82	Verreauxii, <i>Kiefer</i>	XIII.
ovata, <i>Sowerby</i>	VIII.	24	verrucata, <i>Deshayes</i> , <i>Gmel.</i>	XVIII
umbilata, <i>Reeve</i>	XIV	65		85



# MONOGRAPH

OF THE GENUS

# LITTORINA.

It sees the sun and feels the dew,  
The clouds and clouds with clouds of dew,  
It sees the world and life in their grasp,  
And 'tis that up and sin' it like a loss.

The star that sees us pass over it, the storm,  
Sings to us with all the sorrows of the rain,  
And really makes us feel its cold and  
Pours its great shudders of the hurricane.

*L. v. 10.*









14



15



16



17



18



19



20

# LITTORINA.

PLATE I.

## Genus LITTORINA, Ferrussac.

*Testa* turritata, conico-ovata, vel subglobosa, plerumque ovata, rari umbilicata; spiræ spiræque brevissimæ, acutæ; anfractus aut laticostæ aut lineari-striatæ, infersè tubercula tenuicarinatis; apertura subcirculari, columella sæpe plus minus inæ excavatâ. Operculum rotundum, pyriformi-circulare.

Shell turritated, conically ovate, or subglobose, generally solid, rarely umbilicated; spire generally rather short, sharp; whorls either smooth or linear-grooved, sometimes thinly keeled at the lower part; aperture nearly circular, columella often more or less broadly excavated. Operculum horny, pyriformly circular.

The *Littorina* or Periwinkles are a group of turritated shells, mostly small, inhabiting the sea-shore in all parts of the world between tide-marks, or living on the branches of trees within range of the spray. The few species known to Lamarck were referred to his genera *Turbo*, *Mundulota*, and *Phasianella*. De Ferrussac first collected them into a genus, taking the old Linnaean *Turbo littoreus*, or common edible Periwinkle of our shores, as the type; and Deshayes described it in detail in his notes to the new edition of the 'Animaux sans Vertèbres.' In 1845 Dr. Philippi examined the *Littorina* in Mr. Cuming's collection, describing twenty-one new species in the 'Proceedings of the Zoological Society,' and published subsequently a monograph of the group in his 'Abbildungen,' in which a hundred and twelve species are enumerated; more however are set down there as species than we feel justified in adopting.

Of the genera into which the group has been further subdivided, the most natural is that section named *Turricolæ*, of which the Linnaean *Turbo papillosa* is the type. But we have the authority of Deshayes and MM. Quoy and Gaimard for stating that its animal and horny operculum are similar in all respects to the typical *L. littorea*.

It would be in vain to attempt to show any speciality of geographical range in the *Littorina*. From Sika in the north to New Zealand and Valparaiso in the south they are distributed along the shores both of the eastern and western intermediate continents and islands. In their natural habitats they generally represent tidal zones on the rocks, and in Borneo and such swampy localities they live commonly on the branches of the Mangrove-trees.

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

**LITTORINA PULLATA.** *Litt. testâ obliquè conicâ, trachyliformi, crassâ, imperforatâ, atrantio-lucetâ, fasciis fasciis vel nigricante-griseis circumdatâ, transversem rugosostriatâ, et papillosâ, papillis unac elongatis et juncis auris obsolete, unac rotundis, proincurvatis, et numerosis.*

**THE RIBBELED LITTORINA.** Shell obliquely conical, trochus-shaped, thick, imperforated, orange-cream-colour, sometimes encircled with brown or blackish-grey bands, trans-versely roughly striated and papillose, papille sometimes oblong, and more or less obsolete, sometimes prickly, prominent, and numerous.

*Trochus bullatus*, Martyn, Universal Conchologist, pl. 38.  
*Trochus granulatus*, Chemnitz.  
*Mundulota papillosa*, Lamarck.  
*Littorina papillosa*, Deshayes.  
*Turricolus papillosus*, Adams.

*Hab.* Zanzibar, North Australia, and New Zealand.

The varieties of this extremely variable species are distinguished by Philippi in his 'Abbildungen' as vars. *elongatus*, *quadriscrota*, *costata*, *subovata*, and *cera*. The division is but an artificial one, though characteristic of as many typical states of the species. The differences consist mainly in the development of the papille-like nodules of the shell, which may be observed in all gradations, from prickly protuberances, to oblong, more or less obsolete, compressed tubercles.

## Species 2. (Mus. Cuming.)

**LITTORINA CORONARIA.** *Litt. testâ pyriformi-conicâ, crassâ, imperforatâ, lucenti, anfractibus superâ concavo-convexis, subangulatis, striatis et variatis, carinis multique varicatis-nodulatis, columellâ subcirculari, basi excavatâ.*

**THE GARLAND LITTORINA.** Shell pyramidally conical, thick, imperforated, cream-coloured, whorls convexly slanting at the upper part, slightly angled, striated and keeled, keels everywhere prickly noduled, columella somewhat twisted, notched at the base.

*Mundulota coronaria*, Lamarck, Ann. Mus. sars. vert. vol. ix. p. 174. Enc. Méth. pl. 147. f. 6.  
*Littorina coronaria*, Philippi.  
*Eschschia coronaria*, Adams.  
*Hab.* Philippine Islands: Cuming.

This species may be readily distinguished from all varieties of the preceding by its more pyramidal form, smaller, prickly sculpture, and more concave growth at the suture.

Species 3. (Mus. Cuming.)

**LITTORINA TECTUM-PERSICUM.** *Litt. testâ obliquè conicâ, crassâ, imperforatâ, lactea, fusca lineâ et lineâ transversâ striatâ, et tuberculâ, tuberculis sublongis, prominentibus, declivibus, plus minusve crepissimis, columellâ basi crevâta.*

**THE PERSIAN-ROOF LITTORINA.** Shell obliquely conical, thick, imperforated, cream-coloured, stained and lined with brown, transversely striated and tubercled, tubercles rude, prominent, slanting, more or less irregular, columella slightly notched at the base.

*Turbo tectum-Persicum*, Linnæus, Syst. Nat. p. 1234

*Mundula tectum-Persicum*, Lamarck.

*Littorina tectum-Persicum*, Deshayes.

*Hab.* — ?

Intermediate in its characters, between *L. bullata* and *pagodas*, and subject apparently to limited variation.

Species 4. (Mus. Cuming.)

**LITTORINA PAGODUS.** *Litt. testâ obliquè conicâ, acutâ, crassâ, solidâ, imperforatâ, fuscovirenti-lactea, fusca lineâ et lineâ transversâ rugulosis-striatis, et compressè nodulatis, squarâ declivibus, radii subplicatis, anfractu ultimo conspicuè bituberculato.*

**THE PAGODA LITTORINA.** Shell obliquely conical, sharp, thick, solid, imperforated, brownish cream-colour, stained and lined with brown, whorls roughly striated and compressly noduled, slanting round the upper part, radii subplicated, last whorl conspicuously bitubercled.

*Turbo pagodus*, Linnæus, Syst. Nat. p. 1234.

*Trochus pagodus*, Chemnitz.

*Mundula pagodus*, Lamarck.

*Littorina pagodus*, Deshayes.

*Tectorius pagodus*, Guerin.

This well-known species is chiefly remarkable for its uniformly large size and more angular sharp growth, the entire surface being more or less plicately striated and tubercled, the tubercles on the last whorl being developed in a prominent double row.





# LITTORINA.

PLATE II.

Species 5. (Mss. Cuming.)

LITTORINA SPINULOSA. *Litt. testis conoid, acuta, anguste profunde umbilicata, umbilicus intertus, obliquis, rugulosis, angustibus crenoso-striatis, declivis-angulatis, serialibus micantibus adnatis.*

THE SPINED LITTORINA. Shell broadly conical, sharp, narrowly deeply umbilicated, umbilicus sometimes covered, robbish flesh-colour, whorls roughly striated, slantingly angled, sculptured with rows of small nodules.

PHILIPPI. Abbild. und Besch. Conch. vol. iii. p. 17. pl. 6. f. 21.

Hab. Singapore: Cuming.

The robbish flesh-colouring of this species, as compared with the uniform livid-grey that prevails in the group, is not among the least characteristic of its peculiarities.

Species 6. (Mss. Cuming.)

LITTORINA LEMNISCATA. *Litt. testis anguste conoid, imperforata, nigra, striae transversae et granulatae serialibus lobis, basi oblique obliquis, columella convexo-effusa.*

THE LEMNISC LITTORINA. Shell narrowly conical, imperforate, black, sculptured with transverse striae and three rows of granules, base obscurely white-lined, columella convexly effused.

PHILIPPI. Pro. Zool. Soc. 1845. p. 139.

Hab. Cuba:

A small pyramoidally conical shell, sculptured with raised transverse lines and granules.

Species 7. (Mss. Cuming.)

LITTORINA MALACCANA. *Litt. testis sublate conoid, acuta, angustibus-serialibus, angustibus superie declivibus, transversis striatis, granulis albicantibus biserialibus cingulatis.*

THE MALACCA LITTORINA. Shell somewhat broadly conical, sharp, blacki-bogrey, whorls slanting at the upper part, transversely striated, encircled with two rows of whitish granules.

PHILIPPI. Abbild. und Besch. Conch. vol. iii. p. 15. pl. 6. f. 17.

Hab. Fulo Penang, Malacca.

More tumid in the lower whorl than the preceding species, with the granules whitish.

Species 8. (Mss. Cuming.)

LITTORINA CUMINGII. *Litt. testis alba, cono-conoid, profunde umbilicata, acuta, crenoso-striata, angustibus superie planis-declivibus, micantibus squamulato-striatis, squamis variis serialibus biserialibus cingulatis, basi nulli-squamulata.*

CUMING'S LITTORINA. Shell shortly conical, deeply umbilicated, sharp, flesh-tinted ash-colour, whorls flatly slanting at the upper part, minutely squamulately striated, encircled with two rows of prominent prickly scales, base many-angled.

PHILIPPI. Abbild. und Besch. Conch. vol. iii. p. 17. pl. 6. f. 22.

*Echinella Cumingii*, Adams.

Hab. Island of Guimaras, Philippines.

This very beautiful species is prominently distinguished by its winding periphery of prickly scales and deep umbilicus.

Species 9. (Mss. Cuming.)

LITTORINA PILATATA. *Litt. testis subpyramidato-conoid, crenoso-striata, imperforata, livido-griseo, nudis albis cingulatis, angustibus superie declivibus columella late convexo-dilatata, porphyroscalo-fusca.*

THE BEATED LITTORINA. Shell subpyramoidally conical, rather thick, imperforated, livid-grey, encircled with white nodules, whorls slanting at the upper part, columella broadly convexly dilated, purplish-brown.

D'ORBIIGNY. Moll. Cuba, p. 297. pl. 14. f. 20-23.

Hab. Cuba.

Chiefly remarkable for the broadly excavated purplish-brown columella, and conspicuous white nodules upon livid-grey ground.

Species 10. (Mss. Cuming.)

LITTORINA SUBOBUSA. *Litt. testis subobuso, et sublate imperforato, griseo, porphyro-fusco testato, transversis striatis, liris distantibus tenui-nodulatis, apertura parvisculata, porphyro-fusca.*

THE SUBNODOSE LITTORINA. Shell ovately conical, solid, imperforated, grey, tessellated with purple-brown, transversely three-ridged, ridges distant, finely noded; aperture rather small, purple-brown.

PHILIPPI, Abbild. und Besch. Conch. vol. ii. p. 19, pl. 3 f. 8 and 9.

Hab. Red Sea.

A solid, rather tumid species, encircled with three rather distant, finely noded ridges, tessellated with rich purple-brown, and having the columella and interior deeply stained with the same colour.

Species 11. (Mus. Cuming.)

LITTORINA MURICATA. *Litt. testâ ovato-conicâ, rotâ, angustâ excavato-nodulâ, colâ excavato-cinereâ, anfractibus rotundatis, ad suturam solidâ impressis, striatis, nodulis granularibus multique scrobis sculptis.*

THE PRICKLY LITTORINA. Shell ovately conical, sharp, narrowly excavately umbilicated, violet-ash, whorls rounded, rather impressed at the suture, striated, encircled throughout with rows of granulated nodules.

*Turbo muricatus*, Linnaeus, Syst. Nat. 12th edit. p. 1232. *Le Boson*, Adanson.

*Littorina muricata*, Deshayes.

Hab. West Africa, Cuba, Honduras.

In this species the whorls are more rounded and the suture more impressed than in its congeners, and the granulated sculpture is more defined.

Species 12. (Mus. Cuming.)

LITTORINA VILIS. *Litt. testâ pyramidalis-conicâ, rotâ, imperforatâ, transversim elevato-striatâ, colâ excavato-roseâ, anfractibus superâe piano-decrescentibus, nodulis albidis medio biserialiter cinctis, aperturâ purpureo-fusâ.*

THE WHITELISS LITTORINA. Shell pyramidally conical, sharp, imperforated, transversely elevately striated, greenish-grey, whorls flatly slanting round the upper part, encircled round the middle with two rows of white nodules, aperture purple-brown.

MÜNKE, Philipp. Abbild. und Besch. Conch. vol. ii. p. 15, pl. 2, f. 21.

Hab. New Zealand.

Distinguished from the allied species by its more slender, sharply pyramidal form.

Species 13. (Mus. Cuming.)

LITTORINA NODOSA. *Litt. testâ obovata, tumidiusculâ, imperforatâ, spirâ brevâ, rotâ, anfractibus superâe declivibus, declivè concaecis, lino linearibus et nodulis tenuibus muricatis cingulis, fusco-roseâ, rufo tinctâ, columellâ latè excavatâ, aperturâ fusco-fusâ.*

THE NODOSE LITTORINA. Shell broadly ovate, rather swollen, imperforated, spire short, sharp, whorls slanting round the upper part, then convex, encircled with linear ridges and fine prickly nodules, fuscous-grey, stained with red, columella broadly excavated, interior of aperture brown.

GRAY, Zoology of Beechey's Voyage, p. 139.

Hab. North coast of Australia.

A shortly conoid swollen species, with a somewhat *Parapa*-like aspect, sculptured with fine granose nodules.

Species 14. (Mus. Cuming.)

LITTORINA PYRAMIDALIS. *Litt. testâ pyramidalis-ovata, imperforatâ, spirâ turritâ, anfractibus superâe convexo-declivibus, declivè angulatis, et tubercularum seriatis duabus conspicuè cingulatis, purpureo-ovata, aperturâ parvâ, columellâ latiusculè excavatâ, purpureo-roseâ, basi subproductâ.*

THE PYRAMIDAL LITTORINA. Shell pyramidally ovate, imperforated, spire turreted, whorls convexly slanting at the upper part, then angled, and conspicuously encircled with two rows of tubercles, purple-brown, aperture small, columella very broadly excavated, purplish, rather produced at the base.

QUOY and GAIMARD, Voy. de l'ASTROLABE, vol. ii. pl. 33, f. 12-15.

Hab. New Zealand.

A rather abnormal form of the genus, quite peculiar in its characters.







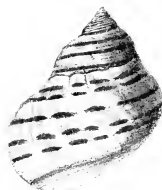
15a.



15b.



16c.



16a.



17a.



17b.



16b.

# LITTORINA.

## PLATE III.

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

**LITTORINA AENEAE.** *Litt. testâ orato-turbinata, imperforatâ, apice acutâ, suturâ impressâ, anfractibus concavis, densè scabro-striatis; albâ vel latevirente, cincto-fusca et varietate rarè oblique strigatâ seu lentiginosâ.*

**THE BRONZED LITTORINA.** Shell ovately turbinated, imperforated, spire sharp, suture impressed, whorls convex, densely scabrously striated; whitish or yellowish, variously obliquely streaked or freckled with ash-brown and blue.

*Hab.* Senegal.

The two shells here represented, from Mr. Cuming's collection, were figured by Dr. Philippi in his 'Abbildungen,' pl. 5, fig. 13 and 14, as varieties of *L. angulifera*, Lamourk. They appear to me, on further examination and comparison, to belong to different species. Fig. 15 a I take to be a variety of *L. scabra*, described at Pl. 5, Sp. 24, while the shell Fig. 15 b and 15 c appears not to have been described.

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

**LITTORINA GRANDIS.** *Litt. testâ oblique turbinata, crassâ, solida, imperforatâ, anfractibus superius convexiusculis, levibus vel obsolete variatis, cæcis apicem striatis; carinâ ovato-groenâ, variâ interruptè nigricante-fusca, columellâ latè callosâ, albi, labro fusco uncinato.*

**THE LARGE LITTORINA.** Shell obliquely turbinated,

thick, solid, imperforated, whorls slightly concave round the upper part, smooth or obsolete keeled, striated towards the apex; bluish-grey, keels interruptedly blackish-brown, columella broadly callous, white, lip spotted with brown.

*MIDDENDORF.* Beit. Malac. Rossica, part 2, p. 57.

*Hab.* Island of Schantar, Sea of Ochotsk: Middendorf.

A fine species of solid massive growth, of a bluish-grey colour, encircled with narrow interrupted black-brown bands, indicating keels that with age have become obsolete.

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

**LITTORINA PULCHRA.** *Litt. testâ orato-turgidâ, imperforatâ, apice acutâ, anfractibus densè lineato-striatis, superius convexo-helicibus; auraco-cultrivirente, flammulis atratis obliquis strigatâ, columellâ latè excavatâ.*

**THE BEAUTIFUL LITTORINA.** Shell ovately turgid, imperforated, apex sharp, whorls densely ridge-striated, concavely slanting at the upper part; orange-red, streaked with oblique black flames, columella broadly excavated.

*SOWERBY.* Genera of Shells, *Littorina*, f. 2, 3.

*Hab.* Panama.

Another fine species, better known to collectors than the preceding, distinguished by its conspicuous pattern of obliquely waved stripes upon a rich orange-red ground.







152



153



154



155



156



157



158

# LITTORINA.

## PLATE IV.

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

**LITTORINA LITTORINA.** *Litt. testâ ovato-turbinata, imperforatâ, crassâ, lævigatâ vel spiritaliter elevato-striatâ, nigrifuscis interlineâ superiorè concavo-impressis; albacâ, aut cinerâ, aut rufâ, nigricante interdum fuscâ et lineatâ; columellâ latè callosâ, subexcavatâ, albâ.*

**THE SHORE LITTORINA.** Shell ovately turbinated, imperforated, thick smooth or spirally elevated striated, whorls sometimes concavely impressed round the upper part; olive, or ash, or red, sometimes banded and lined with black; columella broadly callous, slightly excavated, white.

*Turbo littoreus*, Linnæus, Syst. Nat. p. 1252.

*Turbo ustulatus*, Lamarek.

*Littorina vulgaris*, Sowerby.

*Littorina littorea*, Johnston.

*Hab.* Atlantic shores of Europe.

Of this species, the well-known eatable Periwinkle of our market, we have selected four varieties, differing in colour and even in form, so far as regards the angular depression of the upper portion of the whorls.

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

**LITTORINA VARIA.** *Litt. testâ ananato-oroid, imperforatâ, crasso-costâ, dense irregulariter curvatâ, prope suturam cancellulatâ; lutescente-albâ, lavis nigris*

*nadirque tessellato-lævigatâ; columellâ sublatè excavatâ, margine nigro-lineatâ.*

**THE VARIED LITTORINA.** Shell acuminately ovate, imperforated, rather thick, densely irregularly keeled, somewhat channelled next the suture; yellowish-white, everywhere tessellately freckled with black lines; columella rather broadly excavated, margin black-lined.

SOWERBY, Genera of Shells, No. 37.

*Hab.* Vanuata.

A prettily marked species, densely irregularly keeled throughout.

Species 20. (Mus. Cuming.)

**LITTORINA FASCIATA.** *Litt. testâ ovato-turbinatâ, subventriosâ, imperforatâ, lævigatâ; albâ, fasciis lineisque fusco-griseis obliquè inclinatâ; apertura subcontractâ, columellâ latè excavatâ, margine fusco-lineato.*

**THE BANDED LITTORINA.** Shell ovately turbinated, somewhat ventriose, imperforated, smooth; whitish, obliquely waved with browni-ly-grey bands and lines; aperture somewhat contracted, columella broadly excavated, margin brown-lined.

GRAY, Zool. Beechey's Voyage, p. 139.

*Hab.* Tumbuc, Peru; Cuming.

A fine bold species, lined and obliquely banded, characterized by a dark blotch upon the columellar area, which is more than usually twisted.









22a



23a



22b



23a



24b



27b



25b



25a



26a



26b

# LITTORINA.

PLATE V.

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

**LITTORINA SCABRA.** *Litt. testâ acuminato-oratâ, tenuicâle, angustibus declivis-emeris, spiritaliter dense ligatis, striâ elevatâ sæpè inter liras decurrente, inferiâ obsolete microrimatis; intersate aut rosâ, nunc obliquè fuscâ strigatâ et punctatâ, nunc immaculatâ; aperturâ subcontractâ, columellâ excavato-appressâ.*

**THE SCABROUS LITTORINA.** Shell acuminately ovate, rather thin, whorls slantingly convex, spirally densely ridged, with a raised strie often running between the ridges, absolutely keeled towards the lower part; yellowish or rose, sometimes obliquely streaked and dotted with brown, sometimes unspotted; aperture rather contracted, columella excavately appressed.

*Helix scabra.* Linnæus, Syst. Nat. p. 1213.

*Physinella angulifera,* Lamarck.

*Littorina scabra,* Philippi.

*Hel.* Philippine Islands; Cuning.

Mostly characterized by a painting of oblique interrupted dark-brown streaks, though it has varieties of yellow or rose-colour entirely without marking.

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

**LITTORINA PHILIPPINA.** *Litt. testâ acuminato-oratâ, tenui, angustibus declivis-emeris, spiritaliter regulariter flosculatis, intersatis obliquè longitudinaliter stratis, inferiâ obsolete microrimatis; purpureo-roseo-punctatâ, obscure punctatâ, cæcis apicem oris; aperturâ subconstrictâ, columellâ appressâ, porpurascente.*

**PHILIPPI'S LITTORINA.** Shell acuminately ovate, thin, whorls slantingly convex, spirally regularly thread-ridged, intersives obliquely longitudinally strated, absolutely keeled at the lower part, purple-fawn, obscurely dotted, red towards the apex; aperture rather contracted, columella appressed, purplish.

*H. b.* Philippine Islands; Cuning.

This species very closely resembles the *L. subulida*, which immediately follows, but the spiral ridges are of a

finer thread-like character, and there is more transparency in the substance of the shell.

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

**LITTORINA SIEBOLDII.** *Litt. testâ acuminato-oratâ, tenuicâle, angustibus declivis-emeris, spiritaliter coriuto-stratis, striâ elevatâ inter liras decurrente; lutescente-punctatâ, obscure punctatâ; aperturâ subcontractâ, columellâ excavato-appressâ.*

**SIEBOLD'S LITTORINA.** Shell acuminately ovate, rather thin, whorls slantingly convex, spirally keel-ridged, with a raised strie running between the ridges; yellowish-fawn, obscurely dotted; aperture rather contracted, columella excavately appressed.

*PHILIPP, Pro. Zool. Soc. 1845, p. 143. Abbild. und Besch. Conch. pl. 6. f. 3.*

*Hel.* Japan.

A fine acuminated species, of rather solid growth, spirally keel-ridged throughout with great regularity.

Species 24. (Fig. a, b, c, Mus. Cuning.)

**LITTORINA FUSCA.** *Litt. testâ acuminato-oratâ, tenui, subconstrictâ, angustibus emeris, spiritaliter flosculatis, liris regularibus, subultrastatis, striâ elevatâ inter liras cæcis decurrente; cinereo-griseâ aut rosâ, fuscâ sæpè promiscue punctatâ, aperturâ subultrastatâ, columellâ tenuè constrictâ.*

**THE THIN-ROUNDED LITTORINA.** Shell acuminately ovate, thin, somewhat ventriose, whorls convex, spirally thread-ridged, ridges regular, rather distant, with rarely a raised strie running between the ridges, ash-grey or rose, often promiscuously dotted with brown, aperture nearly round, columella thinly twisted.

*SOWERBY, Genera of Shells, Lith. Soc. f. 5.*

*Hel.* Island of Zebu, Philippine Islands (on the rocks at low-tide), Cuning.

Of light substance, with the thread-like ridges more than usually distant, while the columella is peculiar in being thinly contorted.







16a



17a



16b



17b



18a



18b



19a



20a



20b



21a

## LITTORINA.

PLATE VI.

## Species 25. (Mus. Cuming.)

LITTORINA CINGULATA. *Litt. testâ conico-ovata, solidiusculâ, anfractibus concentricis, spirâliter filoso-costatis, interstitiis dense elevatis-striatis; carinâ-rufâ, costis pallidis, obscurè maculatis; aperturâ parvisculâ, columellâ subcylindricâ, albâ.*

THE BELLED LITTORINA. Shell conically ovate, rather solid, whorls convex, spirally thread-ribbed, interstices densely elevately striated, ash-bred, ribs pale, obscurely spotted, aperture rather small, columella rather callous, white.

PHILIPPI, Pro Zool. Soc. 1845, p. 142.

*Hab.* North coast of New Holland; Dring.

Distinguished by its strong spiral ridges, the interstices between which are prominently excavated and of darker colour.

## Species 26. (Fig. a, b, Mus. Cuming.)

LITTORINA CASTANEA. *Litt. testâ subgloboso-ovata, solidiusculâ, spirâ brevi, anfractibus superioribus depressiusculis, inferioribus anhelis et spirâliter carinatis, carinis regularibus, subulatis; intus rufo-castaneâ; aperturâ circumscissâ, columellâ late callosâ.*

THE CHESTNUT LITTORINA. Shell somewhat globosely ovate, rather solid, spire short, whorls somewhat depressed at the upper part, then rounded and spirally keeled, keels regular, rather distant; deep reddish-chestnut; aperture circular, columella broadly callous.

ADAMS and REEVE, Moll. Voy. Samarang, p. 19, pl. II, f. 8.

*Hab.* Eastern Seas; Belcher.

Of a dark reddish-chestnut colour, variegated throughout with strong, rather distant keels.

## Species 27. (Fig. a, b, Mus. Cuming.)

LITTORINA ABBORIGENA. *L. testâ acuminato-ovata, tenuiusculâ, anfractibus declivibus-concentricis, spirâliter filoso-linearibus, lineis sæpè alternantibus rufis-purpureis, interstitiis striatis; fulvâ, purpureâ ad suturam maculatâ et interstria obliquè striatâ; aperturâ subcylindricâ, columellâ excavato-appressâ, interstium purpureo lineatâ.*

THE TRAY LITTORINA. Shell acuminately ovate, rather thin, whorls slantingly convex, spirally thread-ribbed, ridges often alternately larger, interstices striated; fulvous, spotted at the suture and sometimes obliquely streaked with purple; aperture rather contracted, columella excavately appressed, sometimes stained with purple.

*Hab.* Singapore (on the branches of the Mangrove-tree). Cuming.

Of a peculiar opaque fulvous cast, spotted beneath the suture with purple, which is occasionally prolonged into oblique streaks.

## Species 28. (Fig. a, b, Mus. Cuming.)

LITTORINA NEWCOMBEI. *Litt. testâ pyramidaliter-ovata, solidiusculâ, anfractibus ad suturam rufè marginatis, declivibus-concentricis, inferiorè obtusè angulatis, indiquè densè irregulariter linearis-sulcatis; carinose-costis, fulvo-rufè prominentè tessellatâ, aperturâ parvisculâ, columellâ excavato-appressâ, intus purpureâ.*

NEWCOMBE'S LITTORINA. Shell pyramidally ovate, rather solid, whorls rudely margined at the suture, slantingly convex, obtusely angled at the lower part, densely irregularly linear-grooved throughout; bluish, prominently tessellated with fulvous-red; aperture rather small, columella excavately appressed, deep purple.

*Hab.* Sandwich Islands.

A very characteristic species, rather solid, inclined to be angular at the base, closely linearly incised throughout. The ground-colour is grey-blue, prominently tessellated throughout with fulvous-red.

## Species 29. (Fig. a, b, Mus. Cuming.)

LITTORINA CARINIFERA. *Litt. testâ pyramidaliter-ovata, rarius basin angulato-retrovata, solidiusculâ, anfractibus plano-declivibus, carina concentricâ, spirâliter carinato-costatis, costis distinctibus, lineâ obtusâ inter costas decurrentè; griseo-ovata, rufosulco punctatâ et lineatâ; columellâ late appressâ, fulvâ intus rufâ rufâ.*

THE KEELED LITTORINA. Shell pyramidally conical, angularly ventrose towards the base, rather solid, whorls flatly slanting, but little convex, spirally keel-ribbed, ribs distant, with an obtuse ridge running between the ribs; grey-blue, dotted and freckled with red-brown; columella broadly appressed, fulvous or deep violet.

*Plasiacilla carinifera*. Menke, Synopsis, 2nd edit. p. 51.

*Littorina perler*, King.

*Littorina carinifera*, Philippi.

*Hab.* Java, Philippine Islands, China, Boro o.

This species has a wide range in the Eastern Seas, and varies materially in general form.









31 a.



31 a.



31 b.



32 a.



32 a.



32 b.



32 b.



33 a.



33 b.



33 a.

## LITTORINA.

PLATE VII

Species 30. (Mus. Cuming.)

*LITTORINA TENEROSA.* *Litt. testâ ovato-oblongâ, obtusâ perforatâ, angustibus subangustis, columnatis, nunc teretibus, nunc spirantibus levibus; rugulosis, rosâ fâctâ, foveâ rotundatâ; apertura c. convexâ, columellâ dilatato-sinuatâ.*

**THE DINGY LITTORINA.** Shell conically ovate, with a covered umbilicus, whorls rather narrow, rounded, sometimes smooth, sometimes spirally ridged; reddish-brown, or fulvous reticulated with brown; aperture circular, columella dilutely sinuated.

*Turbo tenerosa*, Montagu, Test. Brit. vol. ii. p. 303.

Supp. pl. 29. f. 4.

*Turbo rosatus*, Say.

*Littorina tenerosa*, Forbes.

**Hab.** Britain and United States.

Of this little species there are two very distinct varieties, one smooth and the other ridged. It is said to run into *L. rosæ*; but it requires a considerable stretch of the imagination to trace this specific relationship.

Species 31. (Fig. *a, b*, Mus. Cuming.)

*LITTORINA PALLIATA.* *Litt. testâ subgloboso-orulatâ, subdilatatâ, imperforatâ, spirâ ex convexâ, angustibus curvatis, n. angustibus granulosostriatâ, crevas aperiturâ ex p. s. s.; orabâ foveâ, præperforatâ, aut fulvescenti, n. c. s. l. apertura nunc contractâ, columellâ latâ ovali, n. striatâ rugo-pæporeâ.*

**THE CLOTHED LITTORINA.** Shell somewhat globose-ovate, rather solid, imperforated, spire scarcely exerted, whorls convex, very minutely granularly striated, expanded towards the aperture; ash-brown, banded with purple, or fulvous-olive; aperture semi-circular, columella broadly callous, sometimes reddish-purple.

*Turbo palliata*, Say, Journ. Acad. Nat. Sci. Philadelphia, vol. ii. p. 219.

*Littorina palliata*, Gould.

**Hab.** United States.

Although included in the British fauna, the existence of this species upon our coast has not been satisfactorily determined. It is abundant on the shores of the United States.

Species 32. (Fig. *c*, Mus. Cuming.)

*LITTORINA RUGOSA.* *Litt. testâ ovato-globosâ, solidâ, imperforatâ, spirâ parvâ, acutâ, angustibus truncato-curvatis, longitudinaliter rube-curvatis, spirantibus lineari-subulvis; nunc ovali, convexo-fuscescente, obscure pallidissimo lineatâ; columellâ latissimâ excavatâ, orâ nunc-fuscescente aurulatâ.*

**THE WRINKLED LITTORINA.** Shell ovately globose, solid imperforated, spire small, sharp, whorls tumidly convex, longitudinally rudely wrinkled, spirally linearly grooved; opaque-white, very faintly obscurely tinged with flesh-purple, columella very broadly excavated, spotted with flesh-purple.

MENKE, Specim. Moll. N. v. Holland. p. 9.

**Hab.** Mouth of the Swan River, New Holland.

A very solid opaque-white globose shell, encircled with linear grooves, curiously rudely wrinkled longitudinally, and remarkably broadly excavated upon the columella.

Species 33. (Fig. *a, b, c*, Mus. Cuming.)

*LITTORINA RUBIS.* *Litt. testâ ovato-globosâ, intermedium obtusâ subulvâ, solidissâ id, spirâ brevi, acutâ, angustibus curvatis, striatis aut spirantibus lineari-subulvis; albidâ, convexo-fusco lineatâ, aut latâ, interdum nigro-lineatâ; apertura parvâ, contractâ, convexâ, columellâ callusâ.*

**THE RUDE LITTORINA.** Shell ovately globose, sometimes with a covered umbilicus, very solid, spire short sharp, whorls convex, smooth or spirally linearly grooved; whitish, banded with flesh-brown, or yellow, sometimes black in the linear grooves, aperture small, contracted, circular, columella callous.

*Turbo rubis*, Donovan, Brit. Shells, vol. i. p. 33. f. 5.

*Turbo littoros*, Maton and Barker.

*Littorina rubis*, Johnston.

*Littorina zosteris*, Bean.

*Littorina nigro-lineata*, Gray.

**Hab.** Britain and United States.

The specimen figured in the accompanying Plate represents the most characteristic varieties of this well-known species, the last, Fig. 33. *c*, being the *L. nigro-lineata* of Gray.

Species 34. (Fig. *c, b*, Mus. Cuming.)

LITTORINA LITTORALIS. *Litt. testâ semiglobosâ, solidissimâ, spirâ plano-depressâ, anfractibus oblique convexis, levibus aut obscurissimè striatis; labiâ, interdum latè fusco-fasciatâ; aperturâ circulari, valvâ contractâ, columellâ latè excavatâ.*

THE LITTORAL LITTORINA. Shell semiglobose, very solid, spire flatly depressed, whorls obliquely convex, smooth, or very obscurely striated; yellow, sometimes broadly brown-banded; aperture circular, very much contracted, columella broadly excavated.

*Nerita littoralis*, Linnæus, Syst. Nat. p. 1253.

*Turbo retusus* and *obtusatus*, Lamarek.

*Turbo ustulatus*, De Blainville.

*Littorina obtusata*, Meuke.

*Hab.* Britain and North European shores.

Well distinguished by its oblique obtuse growth and depressed spire, varying in colour from yellow, more or less banded, to freckled brown.





35



36a



36b



37a



38a



38b



39a



39b



40a



40b

# LITTORINA.

PLATE VIII.

Species 35. (Mus. Cuming.)

**LITTORINA TENUS**. *Litt. testâ ovato-oblongâ, acutâ, imperforatâ, anfractibus declivibus, concentricis tenuiter linearis-sulcatis; caraco-albidâ, opaco-albo obscure luteigula; apertura parvisensâ, labro columellari cano reflexo.*

**THE THIN LITTORINA.** Shell ovately oblong, sharp, imperforated, whorls slantingly convex, concentrically finely linear-grooved; flesh-white, obscurely freckled with opake-white; aperture rather small, columellar lip thinly reflected.

PHILIPPI, Abbild. und Besch. Conch. p. 18, pl. 6, f. 8.  
*Hab.* Island of Ticao, Philippine Islands.

A light-drab freckled shell, having more the appearance of a *Belusina* than of a *Littorina*.

Species 36. (Fig. a, b, Mus. Cuming.)

**LITTORINA CONICA.** *Litt. testâ subpyramidalis-conicâ, tenuicostâ, imperforatâ, anfractibus plano-declivibus, parvis sensu, spirâliter linearis-sulcatis, infernè angulatis, ad angulum tenuicostatis; pellucidis-griseis, fuscisente reticulâ et luteipunctâ, interstria stramineâ; apertura parvisensâ, columellâ appressâ, sulcatâ, labro levè reflexo, evulso.*

**THE CONICAL LITTORINA.** Shell somewhat pyramidally conical, rather thin, imperforated, whorls flatly slanting, but little convex, spirally linear-grooved, angled round the lower part, finely keeled at the angle; transparent-grey, filleted and freckled with light-brown, sometimes straw-colour; aperture rather small, columella appressed, grooved, lip thinly reflected, violet.

PHILIPPI, Pro. Zool. Soc. 1845, p. 141  
*Hab.* Japan.

An extremely graceful and characteristic species, of a pyramidally conical form, semitransparent, either yellow or freckled with a neat filleted pattern, the columellar lip being of a violet hue.

Species 37. (Fig. a, b, Mus. Cuming.)

**LITTORINA AFRICANA.** *Litt. testâ ovato-conicâ, subretrocurvâ, solidiusculâ, imperforatâ, anfractibus convexis,*

*laevibus, spirâliter linearis-sulcatis, infernè angulatis, tenuicostatis; œneulo-oblâ; columellâ latè excavatâ, cano aperture fuscâ intus purpureo-castaneâ.*

**THE AFRICAN LITTORINA.** Shell ovately conical, somewhat ventricose, rather solid, imperforated, whorls convex, smooth, spirally linear-grooved, angled and finely keeled round the lower part; limb-white; columella broadly excavated, with the interior of the aperture deep purple-chestnut.

PHILIPPI, Abbild. und Besch. Conch. p. 31 pl. 4, f. 10.  
*Hab.* Algora Bay; Krauss.

A solid, opake, blue-white shell, faintly linear-grooved, neatly angled round the lower part, having the columella and interior of the aperture richly stained with dark purple-chestnut.

Species 38. (Fig. a, b, Mus. Cuming.)

**LITTORINA PLANAXIS.** *Litt. testâ subglobose-conicâ,entricosâ, imperforatâ, anfractibus laevibus, superè subimpressis, declivè convexis; olivaceo-fuscâ, albo floccatâ; columellâ latissimè excavatâ.*

**THE PLANAXIS LITTORINA.** Shell somewhat globose conical, ventricose, imperforated, whorls smooth, slightly impressed round the upper part, then convex; olive-brown, flaked with white; columella very broadly excavated.

NUTTALL, Philippi, Abbild. und Besch. Conch. p. 33, pl. 4, f. 16.

*Hab.* Upper California.

Of rather globose form, remarkably broadly excavated at the columella against the body-whorl. Rusty olive-brown in colour, flaked with white.

Species 39. (Fig. a, b, Mus. Cuming.)

**LITTORINA SUCULOSA.** *Litt. testâ evulso-conicâ, tenuicostâ, sulcâ, anfractibus plano-declivibus, regulariter latè sulcatis et obtusè costatis, infernè angulatis. spirâliter, costis interstria virido-purpureo-ovatis, nitentibus, apertura subcontractâ.*

**THE GROOVED LITTORINA.** Shell rather sharply conical, rather thin, solid, whorls flatly slanting, regularly broadly grooved and obtusely ribbed, angled at the

lower part; fawn-colour, ribs sometimes stained with livid-purple, shining; aperture rather contracted.

PHILIPPI, Pro. Zool. Soc. 1845, p. 142.

*Hab.* North coast of New Holland.

Characterized very distinctly by its broad, shining, flattened ribs, which are sometimes of a purplish-livid hue, and intervening grooves.

Species 10. (Mas Cuming.)

LITTORINA STRIATA. *Litt. testa abbreviata-rimata, costis-  
cosâ, imperforatâ, acutâ, antrochthos declivis-concavis,*

*obosis, spiruliter sulcatis et liralis, sordide cinereo-  
sigillata; columellâ latissimâ excavatâ, fusco luteâ*

THE STRIATED LITTORINA. Shell shortly conical, ventri-  
cose, imperforated, sharp, whorls slantingly convex,  
stout, spirally grooved and ridged; ash-black; columella  
very broadly excavated, stained with brown.

KING, Zool. Journ. vol. v. p. 345.

*Littorina Camaricasis*, D'Orbigny

*Littorina crenica*, Nuttall.

*Hab.* West Africa, Azores, and Canary Islands.

A stout, strongly linear-grooved, adust shell, with the  
columella against the body-whorl very broadly excavated.







# LITTORINA.

PLATE IX.

Species 41. (Mus. Cuming.)

LITTORINA CRUSA. *Litt. teste Darwini, similis, sed haec, ut legitur, a Fordi etus de Lirio aere, tenuissimi spiraculi, quibus rursus hic, hic, rursus obtusis angulis, hic, rursus apertum. litorali et sulcat, color, favea ovalitatis, columella et fast. rotunda.*

THE SPOTT LITTORINA. Shell ovately conoid, solid, rather stout, whorls slantingly convex, very finely spirally linearly grooved; st. obtusely angled at the lower part; pinkish fawn-colour; aperture rather contracted, orange in the interior, columella callous. Vol. I.

SWERY, Genera of Shells, p. 6.

H. N. Society and Philippine Islands.

A smooth, stout species, of solid growth, flesh-tinged without, orange within, having the spiral linear grooves rather distant.

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

LITTORINA FORTNELLE. *Litt. testa subtriangulato-ovalitatis, angustis, truncata, a spiraculis carinis, angulice spiraculis linearis-sulcatis; pallide spaldica, infusore oblique striatis; apertura parva, ovata, columella et fast. rotunda.*

FORTNELLE'S LITTORINA. Shell somewhat elongately turbinate, narrow, rather thin, whorls convex, spirally linearly grooved throughout; light fawn-colour, obliquely streaked with red-brown; aperture small, circular, columella thinly reflected.

H. N. China.

A slender attenuated shell, with a small aperture, having more the appearance of a *Turritella* than a *Littorina*.

Species 13. (Mus. Cuming.)

LITTORINA PALLIDENS. *Litt. testa arcuato-lanceata, spirali carinis, infra latera rotundatis, spiraculis foveolatis, ad suturam infra spiraculis angulicis; spiraliter striatis, colore carneis, columella et fast. rotunda.*

THE PALE LITTORINA. Shell ovately turbinate, spine sharp, whorls rounded, spirally linearly-streaked, impressed at the suture; opaque-white; aperture nearly circular, lip expanded, white.

PHILIPP, Pro. Zool. Soc. 1845, p. 132.

Hab. Cagayan, Island of Mindanao, Philippines, Vol. I.

An opaque-white shell, solid, elegantly conoid, growth, encircled throughout with strongly reflected narrow-like keels.

Species 44. (Fig. a, b, Mus. Cuming.)

LITTORINA ALBICANS. *Litt. testa arcuato-lanceolata, truncato-lanceolata, spirali carinis, infra latera rotundatis, spiraculis linearis-sulcatis, ad suturam obtusis angulicis; alba, plicata-variceis; columella et fast. rotunda, litorali purpurascens, ad carinam angulicis angulice apertura subtriangulati, litorali tenui reflexa.*

THE WHITEISH LITTORINA. Shell acuminately ovate, thin, semi-transparent, spine sharp, whorls rounded, spirally linearly grooved, obtusely keeled at the suture, last whorl plicately varicose; chalk-white, blue-purple towards the apex, filled with red-brown at the keel; aperture nearly circular, lip thinly reflected.

METCALFE, Pro. Zool. Soc. 1852.

Hab. Sarawak, Borneo; Sir James Brooke.

A peculiarly delicate, semi-transparent chalk-white shell, irregularly varicose on the last whorl after the manner of a *Scutaria*.

Species 45. (Fig. a, b, Mus. Cuming.)

LITTORINA MELANOSTOMA. *Litt. testa pyriformi-ovalitatis, subtriangulata, spirali carinis, infra latera plicato-ovalitatis, oblique carinis striatis, spiraculis linearis-sulcatis; strigata, angulice angulicis angulice apertura triangularitatis, columella et fast. rotunda.*

THE BLACK-MOUTH LITTORINA. Shell pyramidally elongate, rather solid, spine sharp, whorls flately slanting, obliquely roughly striated, spirally linearly grooved, straw-colour, sometimes obliquely streaked with purple-brown; aperture triangularly ovate, expanded at the base, columella callous, deep black sheathed.

GRAY, Zoology of Beccal's Voyage, p. 110.

H. N. Singapore and Borneo.

An interesting species, distinguished from all others.

the genus by its oblong pyramidal form and deep purple-violet columella.

Species 46. (Fig. *a, b*. Mus. Canton.)

LITTORINA FLAMMEA. *Litt. testâ elongato-ovata nigro-gustâ, tenui, subventricosa, spirâ acuta, angustatis declivi-convexis, radiâ et costâ spirâliter linearisubtilis; ferrugines-pulverâ, rufa-foveâ oblique striatâ, apertura parvisseâ, basi dilatâ, columellâ tenui reflexâ.*

THE FLAMED LITTORINA. Shell elongately ovate, narrow, thin, slightly ventricose, spire sharp, whorls slantingly convex, strongly and closely spirally linearly grooved: rust-brown-colour, obliquely streaked with red-brown: aperture rather small, dilated at the base, columella reflected at the base.

PHILIPPI, Abhd. und Besch. Conch. pl. 6. f. 21.

Holl. Shanghai, China: Fortune.

A slight, elongated species, closely spirally grooved throughout, and peculiarly marked with oblique flames





48 a



47



49 b



50 a



49 a



50 b



51 a



50 b



51 b



52

## LITTORINA.

PLATE X.

Species 17. (Mus. Cuming.)

**LITTORINA FRASERI.** *Litt. testâ acuminatopiceâ, aperturâ lobâ decliviter-emissâ, subretrovorsâ, columbâ excavatâ; limbo purpureo-nigricatâ, nigricatâ, nudiqve rubropiceâ; aperturâ semicirculari, columellâ latè excavatâ.*

**FRASER'S LITTORINA.** Shell acuminately ovate, whorls slightly convex, subretrovorse, strongly closely edged; livid-purple, shining, every where red-bord'd; aperture semi-circular, columella broadly excavated.

*Her. Lagos, West Africa; Fraser.*

A thin but solid shell, deeply closely grooved, the intermediate ridges being tessellated with dark purple-red.

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

**LITTORINA TESSELLATA.** *Litt. testâ acuminatopiceâ, atractionibus ad suturem impressis, declivè retrovorsâ, inflexè obtusè angulatis, nudiqve limbo lividopurpureis; circumscissâ, punctis purpureo-olivâ, nudiqve densè tessellatâ, columellâ latè excavatâ.*

**THE TESSELLATED LITTORINA.** Shell acuminately ovate, whorls impressed at the suture, then ventricose, obtusely angled at the lower part, every where finely finely grooved; greenish-white, densely tessellated throughout with dark purple-red dots; columella broadly excavated.

**PHILIPP.** Abhd., and Besch. Conch. pl. 5. f. 26.

*Littorina maculata*, D'Orbigny.

*Her.* West Indies.

Nearly tessellated throughout with dark purple-red, the dots mostly forming oblique waved streaks.

Species 19. (Mus. Cuming.)

**LITTORINA SITJANA.** *Litt. testâ semiglobosâ, inflatâ, spirâ parvâ, obtusâ, inflexâ convexâ, suture brevibus, ante spirâ lobâ flexâ; nigricatâ, circumscissâ, nudiqve ad suturem foveolâ; aperturâ circulari, labro excavatâ dilatata.*

**THE SITJA LITTORINA.** Shell semiglobose, inflated, spiral small, obtuse whorls convex, sometimes smooth, sometimes spirally ridged; black, lanced in the middle and at the suture with greenish-white; aperture circular, lip excavately dilated.

**PHILIPP.** Pro. Zool. Soc. 1845, p. 110.

*Her.* Sitja.

A very characteristic semiglobose, inflated shell, of solid growth, more or less strongly keeled.

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

**LITTORINA GRENLEYI.** *Litt. testâ pyramidaliter-emissâ,*

*inflexâ convexâ, suture brevibus, ante spirâ lobâ flexâ; nigricatâ, circumscissâ, nudiqve ad suturem foveolâ; aperturâ circulari, labro excavatâ dilatata.*

**THE KEEL'D LITTORINA.** Shell pyramidaliter-emissâ, whorls flatly slanting, spirally lancedly keeled at the lower part, slightly convex, every where whitish, lanced with deep slender lines, obliquely wavy-streaked with purple-red, aperture circular, columella broadly excavated.

**D'ORBIGNY.** Moll. de Cuba, p. 209, pl. 1. f. 1-4.

*Her.* Cuba.

A solid shell, of very characteristic form and pattern colouring.

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

**LITTORINA AREYANA.** *Litt. testâ pyramidaliter-emissâ, suture brevi, acuta, retrovortibus, circumscissâ, punctis purpureo-nigricatis, circumscissâ, lobâ flexâ, nigricatâ, nudiqve ad suturem foveolâ; aperturâ circulari, labro excavatâ dilatata.*

**THE SHORT LITTORINA.** Shell globosely turritined, rather solid, suture short, sharp, whorls slantingly angled, strongly spirally keeled, keels distant, inter-stices striated; whitish, stained with black, blotched with red and green; aperture circular, columella broadly excavated and dilated.

*Tachybrachyus*, Philipp. Zeitschrift für Malac. 1844, p. 100.

*Her.* North coast of China.

Of broad *Tachybrachy* form, encircled with three strong keels, and prettily variegated with colour upon a dark ground.

Species 22. (Mus. Cuming.)

**LITTORINA GRENLEYI.** *Litt. testâ orbiculatopiceâ, limbo nigricatâ, atractionibus suture, spirâ flexâ, ante spirâ lobâ flexâ; nigricatâ, circumscissâ, nudiqve ad suturem foveolâ; aperturâ circulari, labro excavatâ dilatata.*

**THE GLEN-LAND LITTORINA.** Shell ovately angled, rather thin, whorls convex, spirally obliquely ridged, livid-livestrian, columella broadly dilated.

**MENCKE.** Syn. Moll. 1804, p. 15.

*Littorina orbiculata*, Mencke.

*Littorina orbiculata*, Deshayes.

*Nerita orbiculata*, Fabricius.

*Her.* Greenland.

Of rather high structure, sometimes lanced, with 11, columella & lip conspicuously excavately dilated.

June, 1857.









32



33 a



34 b



35 a



36 a



36 b



37 b



37 a



37 b



38

## LITTORINA.

PLATE XI.

Species 53. (Mus. Cuning.)

**LITTORINA CINCLIA.** *Litt. testâ acuminato-oratâ, angustissima declivis-convexis, spiritaliter lineari-sulcatis, infrenâ obtusè carinatis, nigra lividis; purpureo-ventroseâ, ferruginea lineâ, inter lines basales albâ; aperturâ parvâ, columellâ excavatâ, callisâ, livido-purpureâ.*

**THE ENCRUSTED LITTORINA.** Shell acuminate ovate, whorls slantingly convex, spirally linearly grooved, obtusely bevelled at the lower part, ridged beneath; purplish-brown, rust-tinged, white between the basal ridges; aperture small, columella excavated, callous, livid-purple.

QUOY and GAIMARD, Voy. de l'Australie, vol. ii. p. 481. pl. 33. f. 20-21.

*Hab.* New Zealand.

A dark ash-brown shell, simply linearly grooved, the grooves being wider at the base beneath the angle.

Species 54. (Fig. a, b, Mus. Cuning.)

**LITTORINA PINNADO.** *Litt. testâ acuminato-oratâ, spirâ parvâ, angustibus convexis, densè spiritaliter lineari-sulcatis; coralescenti-albâ, nudigis sinuâ angustioratâ; aperturâ parvisimâ, foveâ purpureo-cilicâ, columellâ lividissimè excavatâ.*

**THE PINNADO LITTORINA.** Shell acuminate ovate, spire very sharp, whorls convex, closely spirally linearly grooved; bluish-white, everywhere minutely red-dotted; aperture rather small, interior purple-violet, columella very broadly excavated.

*Turbo Pinadâ.* WOOD, Index Test. Supp. pl. 6. f. 34.

*Littorina Pinadâ.* Philippi.

*H.* Sandwich Islands.

Of a very characteristic aspect, bluish-grey, covered with minute purple-red dots.

Species 55. (Fig. a, b, Mus. Cuning.)

**LITTORINA NERITONIA.** *Litt. testâ acuminato-oratâ, truncatâ, ventrosâ, angustibus declivis-convexis, densè purpureo-striatis; albâ, infrenâ-foveâ obliquè figuratâ; columellâ levè exilisâ.*

**THE GLOBED LITTORINA.** Shell acuminate ovate, rather thin, ventricose, whorls slantingly convex, densely impressly striated; whitish obliquely flamed with reddish-brown; columella thinly reflected.

*Physanella neritonia.* LAMAREK, Avin. sans vert. vol. ix. p. 214

*Hab.* Bourdeaux

Allied to *L. subulata*, but of less solid growth, more

ventricose, and wanting the characteristic violet columella of that species.

Species 56. (Fig. a, b, Mus. Cuning.)

**LITTORINA IRROBATA.** *Litt. testâ acuminato-oratâ, subdiâscutâ, angustibus superè subinapressis dense rotundatis, unigue costâ spiritaliter livatis, livis contractis, intersitibus profundè excavatis; livido-plumbicâ aut nigricante, livis caralescentibus, nigro punctatis; aperturâ subcontractâ, foveâ nigro-purpureâ, columellâ excavato-dilatâ.*

**THE EDEVED LITTORINA.** Shell acuminate ovate, rather solid, whorls slightly impressed round the upper part, then rounded, everywhere strongly spirally ridged, ridges close-set, interstices deeply excavated; livid lead-colour or blackish, ridges bluish-white, dotted with red; aperture rather contracted, interior blackish-purple, columella excavately dilated.

*Turbo irrobatus.* SAY, Journ. Acad. Nat. Sci. Philadelphia, vol. ii. p. 239.

*Littorina irrobata.* GRAY.

*Physanella soluta.* LAMAREK.

*Hab.* Sika.

Strongly ridged, of a grey colour, the ridges being roughened with red granules.

Species 57. (Fig. a, b, Mus. Cuning.)

**LITTORINA ZIGZAC.** *Litt. testâ acuminato-oratâ, angustibus declivis-convexis, tenuissimè lineari-sulcatis, infrenâ obsolete angulatis; lutescenti-albâ, pallidè cinereo-caralescente, lineis rugis nudatis obliquè strigatâ; aperturâ subcontractâ, foveâ purpureo-fuscâ, columellâ subcallisâ.*

**THE ZIGZAC LITTORINA.** Shell acuminate ovate, whorls slantingly convex, very finely linearly grooved, obsolete angled at the lower part; yellowish-white, banded with pale ash-blue, obliquely streaked with wavy red lines; aperture rather contracted, interior purple-banded, columella slightly callous.

*Trachis zigac.* CHEMnitz, Conch. Cab. vol. v. p. 69. pl. 166. f. 1599.

*Hab.* Monte Christi, West Columbia. Kangaroo Island, South Australia.

Notwithstanding the discrepancy in the above-quoted localities, the specimens bearing them, on good authority, are certainly the same species, agreeing precisely with the figure cited from Chemnitz.

Fig. 58. (Mus. Cuning.)

The shell here represented, *L. tembrata* of Nuttall, proves, on examination, to be merely a worn *L. Pinadâ*.







59



60a



60b



61a



67a.



67b



61b



62a



62b



# LITTORINA.

PLATE XII.

Species 59. (Mus. Cuming.)

LITTORINA: ABERRANS. *Litt. testâ acuminato-arrivâ, limâ, gracili, angustibus rotundatis, spirâliter subtiliter lineâlis et striatis, striâ longitudinalibus irregulariter decussatis striatis, caraco-albivante, liris opacis; apertura parvâ, cuneatâ, latera et columellâ limâ? reflexis, rosâ-purpureâ.*

THE ABERRANT LITTORINA. Shell acuminately turreted, thin, slender, whorls rounded, spirally finely ridged and striated, irregularly plicately decussated with longitudinal striae; flesh-white, ridges opake; aperture small, circular, lip and columella thinly reflected, rose-purple.

PHILIPPI, Pro. Zool. Soc. 1845, p. 142.

*Hab.* Pinaua.

A slender acuminated shell, of light growth, having very much the appearance of a *Bathina*.

Fig. 60. (Mus. Cuming.)

A variety of *L. Proserp.* of more attenuated form. from Fernando Po.

Species 61. (Fig. a, b, Mus. Cuming.)

LITTORINA ZEBRA. *Litt. testâ acuminato-ovate, spirâ acutâ, crassiusculâ, angustibus convexis, herbis; irregulariter-impunctâ, flammâs obliquis undulato-striatâ; columellâ latè excavatâ, apertura foveâ angustate-purpureâ.*

THE ZEBRA LITTORINA. Shell acuminately ovate, spine sharp, rather thick, whorls convex, smooth; blackish-chestnut, streaked with broad wavy white flames, columella broadly excavated, interior of aperture blackish-purple.

*Turbo zebra*, Wood, Index Test. Suppl. pl. 6. t. 33.

*Littorina zebra*, Philippi.

*Phosinella Zebra*, Lamarck.

*Hab.* Peru, Chili.

A solid, conspicuously white-flamed shell, stained with deep-purple in the aperture.

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

LITTORINA CUNEA. *Litt. testâ ovato-quadratâ, crassâ,*

*apice ovate, angustibus, declivè-convexis, c. 25. angustis, carrugatis et tuberculato-punctatis; area ad osium rufescente; apertura parvâ, columellâ callidâ.*

THE CONE LITTORINA. Shell ovoid conoid, thick sharp at the apex, whorls slantingly convex, rudely plicately wrinkled, and tubercularly grain'd; black redish at the suture; aperture small, columella callous.

*Hab.* —?

An obtusely conoid solid shell, cinder-black, rust-tinge; at the suture, largely grained throughout.

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

LITTORINA SIMPLEX. *Litt. testâ obovato-turbinatâ, tenuiusculâ, angustibus rotundatis, obsolete spirâliter lineâlis, sordidè foveolato-uvulâlis; apertura subcircinari columellâ excavato-epaumi.*

THE SIMPLE LITTORINA. Shell ovately turbinate, rather thin, whorls rounded, obsolete spirally ridged, dirty brownish-orange; aperture nearly circular, columella excavately expanded.

*Hab.* St. Vincent, Cape de Verdes.

Of simple form, the representative apparently of our common *L. vulgaris*.

Species 64. (Mus. Cuming.)

LITTORINA AMEOLA. *Litt. testâ acuminato-ovate, c. 25. sinuâtili, angustibus superè declivè-convexis, declivè-convexis, spirâliter lineâlis, liris angustis, subrotundis, subobovatis; foveolato, purpureo-aurantiâ tessellatâ, et penâsivè maculatâ; columellâ latè excavatâ, callidâ.*

THE DOUBTFUL LITTORINA. Shell acuminately ovate, rather thick, whorls slantingly impressed round the upper part, thin convex, spirally ridged, ridges narrow, sometimes nearly obsolete; brownish, tessellated or prominently blotched with purple-chestnut; columella broadly excavated, callous.

NEUFALB, MSS., Mus. Cuming.

*Hab.* Sandwich Islands.

A shell of rather solid growth, tessellated in a somewhat irregular blotched manner.









654



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661

# LITTORINA.

PLATE XIII.

Species 65. (Mus. Cuming.)

**LITTORINA LUCIFOSA.** *Litt. testâ acuminato-ovata, imperforata, subfractibus decliviter convexis, longitudinaliter striatostriatis, bif. rot. spiriferâ subvittis; limbo-lanceo; apertura perispermâ columella pinguente.*

**THE SHIP LITTORINA.** Shell acuminately ovate, imperforated, whorls shantly convex, longitudinally plurally striated spirally crossed towards the lower part; livid-brown; aperture rather small, columella purplish.

*Hab.* New Zealand.

A rather light acuminated species, of a bluish livid-brown colour, chestnut in the aperture.

Species 66. (Fig. a, b, Mus. Cuming.)

**LITTORINA PUNCTATA.** *Litt. testâ ovato-ventricosa, spirâ brevissimâ, in dist. subfractibus convexis irregulariter striatostriatis, et reticulatis, punctis albis quodvisque subpro tessellatis, apertura subrotunda, columella subappressâ.*

**THE LOST LITTORINA.** Shell ovately ventricose, spire rather short, sharp, whorls convex, regularly linearly grooved; olive-brown, tessellated throughout with square white dots; aperture rather open, columella broadly appressed.

*Types deposited in Gmelin, Syst. Nat. p. 3397*

*Le Morac. Adanson.*

*Hab.* Senegal.

Mostly of ventricose growth, thickly tessellated with small square white dots upon a dark-olive ground.

Species 67. (Fig. a, b, c, d, Mus. Cuming.)

**LITTORINA UNDECIATA.** *Litt. testâ ovato-convexâ, imperforata, subfractibus superâe subconvexis imperforatis, dist. decliviter convexis, non latis, non subvittis; et rotatis; limbo-rotundâ; subfractibus supra fasciatis et planatis; apertura subcontractâ, columella subappressâ, tubosa rotundâ.*

**THE WAVED LITTORINA.** Shell ovately conoid, imperforated, rather solid, whorls slightly convexly im-

pressed round the upper part, flat convex, sometimes smooth, sometimes grooved and ridged yellowish white, frequently lined or flamed with red-brown; aperture rather contracted, columella closely appressed, deep violet.

*GUY, Zool. Beechey's Voyage, p. 110.*

*Hab.* Society and Philippine Islands.

This is the most variable of all *Littorina*. Some specimens are smooth and marbled with chestnut-brown others pale and spirally ridge-striated but all are characterized by a deep-violet enamel'd columella.

Species 68. (Fig. a, b, Mus. Cuming.)

**LITTORINA GRANULARIS.** *Litt. testâ ovato-ventricosâ, spirâ parva, acutâ, subfractibus convexis, dist. irregulariter striatostriatis; foveâ, carina, foveâ; columella late excavatâ et dilatata, carina pinguente.*

**THE GRAINED LITTORINA.** Shell ovately ventricose, spire small, sharp, whorls convex, obliquely irregularly granose-ridged, foveous, tinged with blue; columella broadly excavated and dilated, flesh-brown.

*GUY, Zool. Beechey's Voyage, p. 110.*

*Hab.* —?

The grained ridges are on the middle and upper portion of the whorls, on the lower part the ridges are smooth, and more numerous and closer set.

Species 69. (Mus. Cuming.)

**LITTORINA ARCTICA.** *Litt. testâ subglobosâ, spirâ brevissimâ, subfractibus reticulatis, plus minus rotatis, subrotundâ; apertura subcirculari, columella subrotundâ.*

**THE ARCTIC LITTORINA.** Shell subglobose, spire rather short, obtuse, whorls rounded, more or less corded, dirty-brown, aperture nearly circular, columella somewhat callous.

*MÜLLER, Fauna Groenlandica, p. 9.*

*Hab.* Kamtschatka, Nova Zembla.

A globose, rather light inflated species, of a dingy hue, generally more or less corded.





*Littorina Pl. XIV.*



70.



71.



72.



73.



74.



75.



76.



77.



78.



79.

(Moderately enlarged.)

# LITTORINA.

PLATE XIV.

Species 70. (Mus. Cuming.)

**LITTORINA DEBILIS.** *Litt. testâ subpyramidalis-convexâ, solidiusculâ, anfractibus planis-aequalibus, inflexis abruptè angulatis, levigatis, nitentibus, tenuissimè lineosis subulatis; columella-rotundâ, lineis cernuis subulatis pallidissimis longitudinalibus peritæ; aperturae porrectissimæ, columellâ raliâ, violaceo-fuscescente.*

**THE FAINT LITTORINA.** Shell somewhat pyramidally conoid, rather solid, whorls flatly convex, abruptly angled at the lower part; smooth, shining, very finely linearly grooved; bluish-white, painted longitudinally with faint zigzag flesh-lines; aperture rather small, columella caulous, violet-brown.

**PHILIPPI,** *Proc. Zool. Soc.* 1845, p. 140.

*Hab.* —

A solid subpyramidal shell, of a smooth, bluish aspect, marked with faint zigzag flesh-lines.

Species 71. (Fig. a, b, Mus. Cuming.)

**LITTORINA BELULATA.** *Litt. testâ pyramidalis-convexâ, spirâ brevi, acutâ, anfractibus superè declivibus, declivè carinatis, spirâ inter carinatis, carinis subulatis, columellâ bife-excavata et dilatâ.*

**THE BELLED LITTORINA.** Shell globosely turbinate, spire short, sharp, whorls slanting round the upper part, then ventricose, spirally strongly beched, keels rather distant, obsolete; grained; livid lead-colour; aperture small, columella broadly excavated and dilated.

*Hab.* China; Fortune.

Allied in form to *L. brevicornis*, but of thinner substance, with the ribs sharper and more distant.

Species 72. (Mus. Cuming.)

**LITTORINA NERTIODES.** *Litt. testâ subconoidis, spirâ brevi, acutâ, anfractibus levibus, superè subimpressis, declivibus, declivè obsoletis, subulatis; albicis, lineis effuscentibus fasciatis; aperturae porrectæ, columellâ subulata, enisâ.*

**THE NERTIODE LITTORINA.** Shell ovately conoid, spire rather short, whorls smooth, slightly anguressound

the upper part, slanting, then rather solid, whitish-banded with a livid-red, aperture small, columella somewhat caulous, red.

**Turbo Neritoides,** Linnæus, *Syst. Nat.* p. 1232

*Hab. peltica,* Montagu.

*Turbo peltica,* Møller and Rædelt.

*Turbo peltica,* Linnæus, Lamarck.

*Littorina Neritoides,* Paysonkat.

*Rissoa obliqua,* Risso.

*Littorina globulata,* Ziegler.

*Littorina caribea,* Costa.

*Littorina peltica,* Gray.

*Littorina Neritoides,* Philippi.

*Hab.* Mediterranean and other seas of Europe.

To Dr. Philippi is due the merit of having recognized in this species the true Linnæan *Turbo Neritoides*.

Fig. 73. (Mus. Cuming.)

This shell, *L. Camericensis* of D'Orbigny, is identical with *L. striata*, King.

Species 74. (Mus. Cuming.)

**LITTORINA NEW-ZEALANDI.** *Litt. testâ subglobosoturbinatâ, spirâ breviusculâ, acutissimâ, anfractibus rotundatis, spirâ inter irregulariter carinatis; aperturae subcylindricâ, foveâ costarum-fuscâ, columellâ rotundâ excavatâ, levibus-costatâ.*

**THE NEW ZEALAND LITTORINA.** Shell somewhat globosely turbinate, spire rather short, very sharp, whorls rounded, spirally irregularly linearly grooved; opaque-white, obscurely very faintly red-brown; aperture nearly rounded, chestnut-brown in the interior, columella very broadly excavated, livid-chestnut.

*Hab.* New Zealand.

Curiously resembling *L. affricana* in colour and marking, but of lighter and rounder form.

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

**LITTORINA KNYSNAENSIS.** *Litt. testâ subglobosoturbinatâ, foveâ costarum, anfractibus declivibus-aequalibus, declivè quadrato-costatis; albâ, lineis linearibus.*

*longicauda, inferaè livido-nigricante tauri, expletore  
fauce nigricante-castanea, columella callosa, rugis, sub-  
circulari.*

**THE KNYSNA LITTORINA.** Shell somewhat globosely turbinated, rather thin, ventralise, whorls slightly convex, densely spirally elevated striated; whitish, freckled with rust-brown, tinged with livid-black towards the lower part; interior of the aperture blackish-chestnut, columella callous, red, slightly excavated.

KRAUSS, Philipp, Abbild. und Besch. Conch. pl. t. f. 4.  
*Hab.* Mouth of the Knysna, Cape of Good Hope.

There is a peculiarity in the freckled marking of this species which renders it easily recognizable.

## Species 76 (Mus. Cuming.)

**LITTORINA GUTTATA.** *Litt. testâ subpyramidalis-conoidi, solidâ, abruptè angulatis, lævigatis olivaceo-griseis, punctis albis testiginosis et tessellatis; aperturâ porrectâ, columellâ callosâ rufescente.*

**THE SPOTTED LITTORINA.** Shell somewhat pyramidally conoid, solid, whorls flatly convex, abruptly angled at the lower part, smooth; olive-grey, freckled and tessellated with white dots; aperture rather small, columella callous, reddish.

PHILIPPI, Abbild. und Besch. Conch. pl. t. f. 7.  
*Physiella punctata*, Pöfker.

*Hab.* St. Vincent, Cape de Verde.

Of rather solid acuminate growth, freckled throughout with whitish dots upon an olive-grey ground.







25a



25b



25c



25d



25e



25f



25g



25h



25i

(Considerably enlarged.)

## LITTORINA.

PLATE XV.

Species 77. (Mus. Cuming.)

LITTORINA MISPICUM. *Litt. testis obtuse conoid, sub-ovato-lanceolatus, subtrilobatus, anfractibus convexis, loricibus fuscis sub-rugatis; aperture subtriangulari, columella excavata.*

THE MEDIAN LITTORINA. Shell obtusely conoid, slightly umbilicated, rather solid, whorls convex, smooth; brownish-red; aperture nearly circular, columella callous.

*Helix mispicum.* Mühlfeldt, Verh. Berl. Ges. Nat. vol. i. p. 219. pl. S. f. 8.

*Littorina fovea.* Pfeiffer

*Littorina mesipilum.* Philippi.

*Littorina Austrioides.* D'Orbigny

*Hab.* Jamaica.

A small solid shell, of a characteristic brownish-red or luteous colour.

Species 78. (Fig. a, b. Mus. Cuming.)

LITTORINA THURSDI. *Litt. testis obtuse ovatus, solidiusculus, spiris brevibus, anfractibus tenui laevibus, loricibus plumbeo-ovatis, inflexis sub-angulatis; albida, circumventricose foveolata; columella appresso-convexa; apertura fovea purpureo-fusca.*

THE THURSDI LITTORINA. Shell obtusely ovate, rather solid, spire short, sharp, whorls finely linearly grooved, flatly convex, slightly angled at the lower part; whitish, banded with greenish-blue, columella appressly excavated; interior of aperture purple-brown.

*Hab.* Valparaiso.

A small, solid, humped shell, conspicuously linearly grooved, of a pale ash-colour banded with grey-blue

Species 79. (Mus. Cuming.)

LITTORINA GRANA-COSTATA. *Litt. testis angustior, spiris brevibus, anfractibus convexis, loricibus spiriferis laevibus, sub-angulatis, inflexis sub-angulatis; cornea excavata, sub-ovata, sub-epressa-convexa; apertura fovea purpureo-fusca.*

THE GRAIN-RIBBED LITTORINA. Shell sub-globose, spire short, sharp, whorls convex, sub-ventricose, spirally linearly grooved, longitudinally granosely ribbed; bluish-white; columella appressly excavated; interior of the aperture purple-brown.

*Hab.* Brisbane Water, Australia. Strange.

A pretty little opaque blue-white shell, latticed with

grained ribs, which, in specimens of immature growth, becomes somewhat obsolete.

Species 80. (Fig. 80 a, b, and 81, Mus. Cuming.)

LITTORINA PICTA. *Litt. testis ovato-lanceolatus, anfractibus convexis, vel obsolete laevibus, loricibus, inter alia granulatis; olivaceo-purpureis, maculis granulis; aequaliter irregulariter verrucosis; columella excavata, apertura fovea intense purpurea.*

THE PAINTED LITTORINA. Shell ovately turbinate, whorls convex or obsolete linearly grooved, sometimes granulated; olive-black, irregularly mottled with large white spots; columella excavated, interior of the aperture deep purple.

*Philippi.* Abhandl. und Besch. Conch. pl. 3 f. 26.

*Hab.* Sandwich Islands.

The specimen of *L. picta* here represented is Dr. Philippi's var. *aurantiana*.

Species 82. (Fig. a, b. Mus. Cuming.)

LITTORINA FEDELENSIS. *Litt. testis ovato-convoid, truncatus, spiris brevibus, anfractibus ventricosis, plumbeis, inflexis angulatis, valde irregulariter granulatis; nigro-olivaceo, granulis pallidis; columella excavata, apertura fovea purpureo-fusca.*

THE FEDELE LITTORINA. Shell ovately conoid, rather thin, spire short, sharp, whorls ventricose, rather flat, angled at the lower part, everywhere irregularly granosely ridged, blackish, granules pale; columella excavated, interior of the aperture purple-brown.

*Hab.* Fejee Islands, Macgillivray.

A thin, angularly convoluted shell, encircled with small chains of whitish grains.

Species 83. (Mus. Cuming.)

LITTORINA PICEA. *Litt. testis obtuse conoid, anfractibus plumbeo-ovatis, oblique striatis et interdum granulatis, inflexis angulatis, intense purpureis; apertura parva, columella excavata, purpurea.*

THE PITCH LITTORINA. Shell obtusely conoid, whorls flatly convex, obliquely striated, sometimes granulated, angled at the lower part, dark pitch-black; aperture small, columella excavated, purplish.

*Hab.* — ?

A solid, pitch-dark, berry-like shell, of a distinct typical form from any other of the genus.

June, 1857.







123



124



125



126



127



128



129



130



131



132

(Considerably enlarged)

# LITTORINA.

PLATE XVI.

Species 84. (Mus. Cuming.)

**LITTORINA PALUDINGELLA.** *Litt. testâ subglobosa, tenui, carinata, spirâ parvâ, acutâ, angustius ad suturam obliquo-pressâ, rotundatis, lœvibus; olivaceo-castaneâ; aperturâ subcirculari, columellâ excavatâ, callusâ.*

**THE LITTLE PALUDINA LITTORINA.** Shell subglobose, thin, horny, spire small, sharp, whorls rather impressed at the suture, rounded, smooth, olive-chestnut; aperture nearly circular, columella excavated, callous.

*Hab.* Tasmania.

A minute, dark-brown, horny-like shell, with the whorls narrow and more than usually rounded.

Species 85. (Fig. 1, 6, Mus. Cuming.)

**LITTORINA ADAMSHI.** *Litt. testâ ovato-turbinatâ, subrotundâ, angustius in luvacis-subrotatis, superiorè et inferiùs angulatis; olivaceo-âllâ, punctis fuscis vittatâ, punctis ad extremum inferum majoribus; aperturâ subcirculari.*

**ADAMS'S LITTORINA.** Shell ovately turbinated, somewhat turreted, whorls linearly grooved, angled above and below; yellowish-white, filled with brown dots, dots larger at the lower angle; aperture nearly circular.

*Littorina pulchella*, C. B. Adams, MS., Mus. Cuming.

*Hab.* Jamaica.

A minute yellowish shell, of a peculiar turreted form, dotted with brown dots.

Species 86. (Mus. Cuming.)

**LITTORINA MINIMA.** *Litt. testâ ovatâ, Naticiformi, subumbilicatâ, spirâ parvâ, acutâ, angustius convexâ, uterâ subopressâ; carulescente-âllâ, punctis purpureo-fuscis regulariter serialim aspersâ; columellâ glauco-âllâ, aperturâ fuscâ subrotunda.*

**THE VERY SMALL LITTORINA.** Shell ovate, Natic-shaped, slightly umbilicated, spire small, sharp, whorls convex, the last somewhat expanded; bluish-white, sprinkled with regular rows of purple-brown dots; columella slaty callous, interior of the aperture violet-purple.

*Littorina minutus*, Wood, Index Test. Supp. pl. 6 f. 29.

*Hab.* ———

Distinguished by a very characteristic clear pattern of small, distinct red dots upon a blue-white ground.

Species 87. (Mus. Cuming.)

**LITTORINA RUFÂ.** *Litt. testâ ovato-turbinatâ, subrotundâ, minute umbilicatâ, angustius decliviter-convexâ, lœvibus, pallidâ; rufo-fuscescente; aperturâ parvâ fuscâ callusâ.*

**THE RED LITTORINA.** Shell ovately turbinated, rather solid, minutely umbilicated, whorls slantingly convex, smooth, polished; red-brown; aperture small, interior callous.

RECLUZ, MS., Mus. Cuming.

*Hab.* ———?

A minute, solid, bright red-brown shell, with a bright polished surface.

Species 88. (Mus. Cuming.)

**LITTORINA ARABICANA.** *Litt. testâ oblongo-ovatâ, spirâ elevatâ, angustius decliviter-convexâ, levigatâ; purpureo-castaneâ; aperturâ ovatâ, porcosâ, columellâ subrotatâ, ad extremum dilatâ, aperturâ fuscâ nigricante-purpureâ.*

**THE SLENDER LITTORINA.** Shell oblong-ovate, spire raised, whorls slantingly convex, smooth; purple-chestnut; aperture ovate, rather small, columella slightly excavated, dilated at the extremity, interior of the aperture blackish-purple.

D'ORBIGNY, Voy. dans l'Amér. Mérid. p. 593, pl. 55. f. 3, 4.

A dark, shining, chestnut shell, faintly banded, of a slender acuminate form.

Species 89. (Mus. Cuming.)

**LITTORINA FORATA.** *Litt. testâ globoso-ovatâ, subrotundâ, profunde umbilicatâ, spirâ parvâ, angustius decliviter-convexâ, inferè expansâ, antice spiratili costatis; carulescente-âllâ; columellâ excavatâ, aperturâ fuscâ rufo-cæco-purpureâ.*

**THE RIBBED LITTORINA.** Shell globose-ovate, subrotundous, deeply umbilicated, spire small, whorls slantingly convex, expanded towards the lower part, spir-

rally ribbed throughout, bluish-white, columella excavated, interior of the aperture violet-purple.

PHILLIPS, *Proc. Zool. Soc.* 1845, p. 139.

*Hab.* Galapagos Islands (found on high exposed rocks): Cuming.

A small, open, bluish-white shell, spirally ribbed, violet-purple in the interior.

Species 90. (Fig. a, b, Mus Cuming.)

LITTORINA TABALIS. *Litt. testa globosa, lani, spiræ levissimæ, minutæ, angustibus angustis, colana expansa; costarum-rufæ, lineis obscure reticulatâ; apertura amplâ, columellâ excavatâ.*

THE LITTLE BEAN LITTORINA. Shell globose thin, spire very short, minute, whorls narrow, the last expanded, chestnut-red, obscurely reticulated with lines; aperture large, columella excavated.

*Tarbo fabalis*, *Zoological Journal*, vol. ii, p. 556; pl. 13, f. 10.

*Littorina Beanii*, Macgillivray.

*Littorina* 1891 Thorsø.

*Hab.* North shores of England.

It is somewhat doubtful whether this little species is not an extreme variety of *L. littorina*.

Species 91. (Mus Cuming.)

LITTORINA NANALIS. *Litt. testâ orata, orbiculatâ, spiræ acutâ, angustibus rotundatis, spirâ altera levissimâ in-sensibilis; nitore-roseâ, nitente; apertura circulari, columellâ tenui callusâ.*

THE ROCK-INHABITING LITTORINA. Shell ovately turbinate, spire sharp, whorls rounded, spirally very finely linearly grooved, olive-brown, shining; aperture circular, columella thinly callous.

JOHNSON, *Beauck Club*, vol. i, p. 268.

*Littorina nana*, Bean.

*Hab.* Northern shores of England.

This also is referred by some authors to a typical British species, *L. radiis*.







91



93



95



93



96 a



96 b



97



98



99



100

# LITTORINA.

PLATE XVII.

Species 92. (Mus. Cuming.)

**LITTORINA LITCOLLATA.** *Litt. testâ ovata, apice obtusâ, cœcis, levissimâ, albâ, juxta latâ cœruleo-ovato cingulatâ; anfractibus parvis convexis, albâs rix angulata; apertura ovatâ, nigro-fusâ, zonis duabus albis, columellâ excavato-depressâ, nigro-fusâ.*

**THE DECOLLATED LITTORINA.** Shell ovate, obtuse and eroded at the apex, very smooth, whitish, encircled with a broad blue band; whorls but little convex, the last slightly angled; aperture ovate, blackish-brown, with two white zones, columella excavately depressed, blackish-brown.

**KRAUSS,** Philippi, Abbild. und Besch. Conch. vol. ii. p. 197, pl. 4. f. 7.

*Hab.* Natal

A small nutlike species, of a peculiar blue colour, white at the sutures, with aperture and columella dark chestnut-brown.

Species 93. (Mus. Cuming.)

**LITTORINA VENTRICOSEA.** *Litt. testâ ovata, rotundâ, basi rotundatâ, transversâ sulcatâ, sulcis unanquam granulatis; albâ, strigis multâs rufis pictâ; anfractibus convexis; apertura semiorbiculâ, patulâ, carnâ, columellâ excavato-depressâ, subcylindricâ, curvâ.*

**THE VENTRIPOSE LITTORINA.** Shell ovate, ventricose, rounded at the base, transversely grooved, grooves sometimes granulated; whitish, painted with wavy red streaks; whorls convex; aperture semiorbicular, patulate, flesh-colour, columella excavately depressed, rather swollen, flesh-colour.

**PHILIPPI,** Abbild. und Besch. Conch. vol. iii. p. 15, pl. 6. f. 19.

*Hab.* Palo-Peung.

A limbeck's grooved inflated shell, faintly red-streaked, with the aperture and columella of a characteristic flesh-colour.

Species 94. (Mus. Cuming.)

**LITTORINA DIMENENSIS.** *Litt. testâ ovato-oblongâ, basi subangulatâ, transversâ tenuissimâ striatâ, albâ, cœruleo-ovata; anfractibus planiusculis, albâs cœcis cœulescente cingulatâ, apertura ovatâ, parvisculâ, castaneo-fusâ.*

**THE DIMENS LITTORINA.** Shell ovately oblong, slightly angled at the base, transversely very finely striated, whitish-blue, whorls rather flat, the last blue-banded

round the middle; aperture ovate, rather small, chestnut-brown.

**QUOY** and **GAIMARD,** Voy. de l'Astrôlab, vol. ii. p. 479, pl. 33. f. 8-11.

*Hab.* New Zealand.

A rather solid oblong species, conspicuously blue-banded, shining chestnut-brown in the aperture.

Species 95. (Mus. Cuming.)

**LITTORINA LEVIS.** *Litt. testâ ovato-oblongâ, ovatâ, albâ, cœcis, varicostâ, interstitia cœcis fasciatâ; anfractibus parvis convexis, laevibus, sub lente spirâliter striatis, albâs basi angulatâ; apertura ovata, foveo-violacea, columellâ excavato-depressâ, foveo-violacâ.*

**THE SMOOTH LITTORINA.** Shell ovately oblong, sharp-whitish, marbled with ash, sometimes blue-banded; whorls but little convex, smooth, beneath the lens spirally striated, last whorl angled at the base; aperture ovate, brownish-violet, columella excavately depressed, brownish-violet.

**PHILIPPI,** Pro. Zool. Soc. 1845, p. 140.

*Hab.* ———?

A shell of rather solid growth, angled towards the base, blue-banded or mottled, while the aperture and columella are deep brownish-violet.

Species 96. (Fig. a, b, Mus. Cuming.)

**LITTORINA SAYI.** *Litt. testâ ovatâ, ovatâ, subcylindricâ, transversâ multicaudâ, albâ, punctis parvis rufis cœcis; spirâ rotundatâ, anfractibus convexo-ovatis, superne declivibus; apertura ovato-orbiculâ, columellâ rufâ.*

**SAY'S LITTORINA.** Shell ovate, sharp, rather ventricose; transversely many-grooved, white, ornamented with pale red dots; spire violet, whorls rather convex, slanting round the upper part; aperture ovate-orbicular, columella red.

**PHILIPPI,** Pro. Zool. Soc. 1845, p. 140.

*Hab.* Florida.

Of rather solid, ventricose growth, closely spirally grooved throughout, with the columella characteristically stained with red.

## Species 97. (Mus. Cuming.)

LITTORINA COLUMELLARIS. *Litt. testâ ovato-conicâ, acutâ, subventricosâ, densè striatâ, albâ, interdum parvis luteis ferrugineisve sâpe in strijs concoloribus pictâ; anfractibus convexis, suturis excavatis; apertura semiorbiculari, columella excavato-depressâ, fusco-violaceo tinctâ.*

THE PILLARED LITTORINA. Shell ovately conical, sharp, rather ventricose, densely striated, whitish, sometimes painted with yellow or rust spots, often running into streaks; whorls convex, sutures excavated; aperture semiorbicular; columella excavately depressed, stained with brownish-violet.

D'ORBIGNY, Voy. dans l'Amér. Mérid. n. 284.

*Hab.* Pernambuco.

It is not without some doubt as to its correctness, that I adopt this shell as *M. D'Orbigny's L. columellaris*, from Pernambuco. It belongs, rather, to the eastern type of the genus, represented by *L. undulata*, and approaches closely to some colourless varieties of that species.

## Species 98. (Mus. Cuming.)

LITTORINA OBLIGATA. *Litt. testâ globoso-turbinatâ, tenui, ventricosâ, spirâliter densè cincto-striatâ, olivaceâ vel rubro-castaneâ, fasciis luteolis intercipitis interstibus cingulatâ; anfractibus rotundatis; apertura orbiculari.*

THE TIED LITTORINA. Shell globosely turbinated, thin, ventricose, spirally densely cinctely striated, olive or reddish-chestnut, sometimes encircled with interrupted yellowish bands; whorls rounded; aperture orbicular.

*Turbo obligatus*, Say, Journ. Acad. Nat. Sci. Philadelphia, vol. ii. p. 241.

*Littorina rubris*, Gould.

*Hab.* Maine, United State-

A light, turbinated shell, mostly of a bright reddish-chestnut colour, more or less freckled with yellowish interrupted bands.

## Species 99. (Mus. Cuming.)

LITTORINA MILLEGRANA. *Litt. testâ ovato-conicâ, ventricosâ, acutâ, albâ; anfractibus convexis, spirâliter densè grano-liratis; apertura orbiculari, carneo-fuscescente.*

THE THOUSAND-GRAINED LITTORINA. Shell ovately conoid, ventricose, sharp, whitish; whorls convex, spirally densely grain-ridged; aperture nearly orbicular, flesh-brown.

PHILIPPI, *Abbild. und Besch. Conch.* vol. iii. p. 65. pl. 7. f. 15.

*Hab.* Red Sea.

Allied to the group figured in Plate II., of which *L. dilatata* is the type.

## Species 100. (Mus. Cuming.)

LITTORINA MAURITIANA. *Litt. testâ ovato-conicâ, solidâ, caralescenti-âlbâ, transversim tenuissimè striatâ; anfractibus parvis convexis, ultima subangulato; apertura purpureo-fuscâ, fasciâ solitariâ albâ basali.*

THE MAURITIUS LITTORINA. Shell ovately conical, solid, bluish-white, transversely very finely striated; whorls but little convex, the last slightly angled; aperture purple-brown, with a solitary white band at the base.

*Phasianella Mauritiana*, Lamarek, *Anim. sans vert.* vol. ii. p. 244.

*Littorina unifasciata*, Gray.

*Hab.* Mauritius, New Holland.

Distinguished by its solid, sharply conical form, and peculiarity of colouring.





101



102 a



102 b



103 a



103 a



103 b



103 b



105



106



107

# LITTORINA.

PLATE XVIII.

Species 101. (Mus. Brit.)

**LITTORINA INTERMEDIA.** *Litt. testâ elongato-conicâ, basi ventris et, heu, colore porci; lines lutescis excavatâ; spirâ acutâ, infractionibus concentricis, ultimo rotundatâ; columellâ albiâ vel rubescentâ.*

**THE INTERMEDIATE LITTORINA.** Shell oblong, conical, ventris seat at the base, thin, various in colour; grooved with impressed lines; spire sharp, whorls convex, the last rounded; columella white or violet.

PHILIPPI, Pro. Zool. Soc. 1845, p. 141.

*Hab.* Red Sea, Natal, New Holland, Philippine Islands, Tahiti.

Closely allied to *L. scabra*, of which there are many forms not always readily definable.

Species 102. (Mus. Brit.)

**LITTORINA NATALENSIS.** *L. testâ parvâ, orato-conicâ, acutâ, cæcâ, transverse striatâ, tuberculato-punctâ; apertura acutâ, columellâ nigâ, planiusculâ, testââ parvâ et dilatâ.*

**THE NATAL LITTORINA.** Shell small, ovately conical, sharp, ash-coloured, transversely striated and tubercularly nodose; aperture oval, columella black, rather flat, produced and dilated at the lower part.

KRAUSS, Philippj. Abbild. und Besch. Conch. vol. ii. p. 160, pl. 3, f. 4.

*Hab.* Natal.

A small, solid species, belonging to that characteristic group of the genus represented most conspicuously by *L. dilatata*.

Fig. 103. (Mus. Brit.)

Having figured a transversely banded example of *Littorina fasciata*, Gray, at Plate IV. fig. 20, which is not very typical of its general character, a specimen is here represented with longitudinally waved bands.

Species 104. (Mus. Brit.)

**LITTORINA GLABRATA.** *Litt. testâ orato-oblongâ, acutâ, albidocæcâ; strijs parvis brevibus obliquis punctâ; infractionibus parvis concentricis, lacinibus, ultimo basi angulata; apertura ovali, rufescente, columellâ depressâ, rudicâ.*

**THE SMOOTH LITTORINA.** Shell ovately oblong, sharp, whitish-flesh-colour, painted with oblique pale-brown streaks; whorls but little convex, smooth the last angled; aperture ovate, reddish, columella depressed, violet.

PHILIPPI, Pro. Zool. Soc. 1845, p. 140.

*Hab.* Payta, Peru; Cuning.

Of a rather solid narrowly conical form, smooth, painted in a characteristic manner with oblique brown hair-streaks.

Species 105. (Mus. Cuning.)

**LITTORINA TROCHOIDES.** *Litt. testâ elongato-conicâ, subgranulâtâ, sordide griseâ; infractionibus concentricis, acutâ tuberculato-nodosis, ad suturam impressis; apertura parvâ, subquadrato-orbiculari, columellâ excavato-depressâ, nigrescente.*

**THE TROCHOID LITTORINA.** Shell elongately conical, somewhat pyramidal, dull grey; whorls convex, strongly tubercularly nodose, impressed at the suture; aperture small, somewhat squarely orbicular, columella excavately depressed, blackish.

GRAY, Zoology of Beesley's Voyage, p. 149.

*Hab.* —? —

Chiefly distinguished from its congeners by a more contracted and pyramidal growth.

Species 106. (Mus. Cuning.)

**LITTORINA GRANOSA.** *Litt. testâ orato-ventricosâ, crassâ, granoso-tuberculâtâ, sordide griseâ; apertura parvâ, ovato-orbiculari arcuato-depressâ, subcallusâ.*

**THE GRAINED LITTORINA.** Shell ovately ventricose, thick, granuously tubercled, dull grey; aperture small, columella arcuately depressed, rather callous.

PHILIPPI, Abbild. und Besch. Conch. vol. iii. p. 65, pl. 7, f. 14.

*Hab.* Guinea, Liberia.

The growth of this species is quite the opposite to the preceding, being broad and obese though belonging to the same type.

Species 107. (Mus. Brit.)

**LITTORINA MODESTA.** *Litt. testâ orato-oblongâ, albidâ,*

*rarius obsolete rufo-punctatâ, trans crista profunde sulcatâ, anfractibus convexiusculis; aperturâ semiorbiculari, columellâ latissimâ excavato-depressâ, aurantiâ-fusâ, superâ purpureo-maculatâ.*

THE MODEST LITTORINA. Shell ovately oblong, whitish, rarely obsolete dotted with red, transversely deeply grooved; whorls rather convex; aperture semiorbicular, columella very broadly excavately depressed,

orange-brown, blotched with purple at the upper part.

PHILIPPI, Pro Zool. Soc. 1845, p. 141.

*Hal.* Sitka

A dull-white shell, sometimes speckled with red, chiefly distinguished by the regularity with which it is spirally grooved.



## LITTORINA.

Species	Plate	Figure	Species	Plate	Figure
abrebrans, <i>Philippi</i> . . . . .	XII	59	grano-costata, <i>Reeve</i> . . . . .	XV.	79
Adamsii, <i>Reeve</i> . . . . .	XVI	85	granosa, <i>Philippi</i> . . . . .	XVIII.	196
Africana, <i>Philippi</i> . . . . .	VIII.	37	granularis, <i>Gray</i> . . . . .	XIII.	68
ahenea, <i>Reeve</i> . . . . .	III.	15	Graculandica, <i>Reeve</i> . . . . .	X.	52
albicans, <i>Metcalf</i> . . . . .	IX	44	guttata, <i>Philippi</i> . . . . .	XIV.	76
albigula, <i>Natall</i> . . . . .	XII.	64	intermedia, <i>Gray</i> . . . . .	XVIII.	103
aranenna, <i>D'Orbigny</i> . . . . .	XVI	88	irrorata ( <i>Turbo</i> ), <i>Say</i> . . . . .	XI.	56
arborescens, <i>Reeve</i> . . . . .	VI	27	Kyussensis, <i>Krauss</i> . . . . .	XIV.	75
arctica, <i>Moller</i> . . . . .	XIII	69	lavis, <i>Philippi</i> . . . . .	XVII.	95
arsatica, <i>Natall</i> . . . . .	XIII	40	lemniscata, <i>Philippi</i> . . . . .	II.	6
balvata, <i>Reeve</i> . . . . .	XIV.	71	littoralis ( <i>Nerita</i> ), <i>Linn</i> . . . . .	VII.	24
<i>Basteroti</i> , <i>Payraudeau</i> . . . . .	XIV	72	littorea ( <i>Turbo</i> ), <i>Linn.</i> . . . . .	IV.	48
<i>Bostaii</i> , <i>Magillivray</i> . . . . .	XVI	90	Littorea, <i>Reeve</i> . . . . .	XIII.	65
brevisata ( <i>Turbo</i> ), <i>Philippi</i> . . . . .	X.	51	Malaccana, <i>Philippi</i> . . . . .	II.	7
<i>crabrae</i> , <i>Costa</i> . . . . .	XIV.	72	Mauritiana ( <i>Phasianella</i> ), <i>Linn.</i> . . . . .	XVII.	100
bullata ( <i>Trochus</i> ), <i>Martyn</i> . . . . .	I.	1	melanostrona, <i>Gray</i> . . . . .	IX.	45
<i>Camaricensis</i> , <i>D'Orbigny</i> . . . . .	VIII.	40	mesopilum ( <i>Helix</i> ), <i>Mohlfeldt</i> . . . . .	XV.	77
carinata, <i>D'Orbigny</i> . . . . .	X.	50	mitisgrana, <i>Philippi</i> . . . . .	XVII	99
carinata ( <i>Phasianella</i> ), <i>Menke</i> . . . . .	VI.	29	minima ( <i>Turbo</i> ), <i>Wood</i> . . . . .	XVI.	86
castanea, <i>Adams and Reeve</i> . . . . .	VI.	26	modesta, <i>Philippi</i> . . . . .	XVIII.	107
<i>castaneae</i> , <i>Deshayes</i> . . . . .	X.	52	muricata ( <i>Turbo</i> ), <i>Linn.</i> . . . . .	II.	11
cinerea, <i>Quoy</i> . . . . .	XI	53	Natalensis, <i>Krauss</i> . . . . .	XVIII	102
cingulata, <i>Philippi</i> . . . . .	XI	25	<i>Natroides</i> , <i>D'Orbigny</i> . . . . .	XV.	77
columnellaris, <i>D'Orbigny</i> . . . . .	XVII.	97	nubulosa ( <i>Phasianella</i> ), <i>Linn.</i> . . . . .	XI.	55
conica, <i>Philippi</i> . . . . .	VIII	36	<i>opileta</i> , <i>Geny</i> . . . . .	XVI.	94
coronaria ( <i>Adams and</i> ), <i>Linn</i> . . . . .	I.	2	<i>Oritoides</i> ( <i>Turbo</i> ), <i>Linn.</i> . . . . .	XIV.	72
Crucingii, <i>Philippi</i> . . . . .	II	8	Newsonii, <i>Reeve</i> . . . . .	VI.	28
debilis, <i>Philippi</i> . . . . .	XIV	70	<i>sigabulenta</i> , <i>Gray</i> . . . . .	VII	33
deroliata, <i>Krauss</i> . . . . .	XVII	92	nodosa, <i>Gray</i> . . . . .	II.	13
Diemenensis, <i>Quoy</i> . . . . .	XVII.	94	Novae-Zelandiae, <i>Reeve</i> . . . . .	XIV.	71
dilatata, <i>D'Orbigny</i> . . . . .	II.	9	obscura, <i>Sarsely</i> . . . . .	IX.	44
fabulis ( <i>Turbo</i> ) . . . . .	XVI	90	obliquata ( <i>Turbo</i> ), <i>Say</i> . . . . .	XVII.	98
fastata, <i>Gray</i> . . . . .	IV.	20	obtusata, <i>Menke</i> . . . . .	VII.	34
Fegeensis, <i>Reeve</i> . . . . .	XV	82	pagodus ( <i>Turbo</i> ), <i>Linn.</i> . . . . .	I.	1
filosa, <i>Sarsely</i> . . . . .	V.	24	pallescens, <i>Philippi</i> . . . . .	IX.	43
flammea, <i>Philippi</i> . . . . .	IX	46	pallicata ( <i>Turbo</i> ), <i>Say</i> . . . . .	VII.	31
Fortunei, <i>Reeve</i> . . . . .	IX.	42	Paludicella, <i>Reeve</i> . . . . .	XVI	84
Fraseri, <i>Reeve</i> . . . . .	X.	17	<i>papillosa</i> , <i>Deshayes</i> . . . . .	I.	1
<i>fusca</i> , <i>Pfeffer</i> . . . . .	XV.	77	<i>perlae</i> , <i>Kang</i> . . . . .	VI.	29
glabrata, <i>Philippi</i> . . . . .	XVIII	104	<i>petraea</i> , <i>Gray</i> . . . . .	XIV.	72
glauca, <i>Reeve</i> . . . . .	XII.	62	Philippiana, <i>Reeve</i> . . . . .	V.	22
gracilis, <i>Mohlenhoff</i> . . . . .	III.	16	pirca, <i>Reeve</i> . . . . .	XV.	83

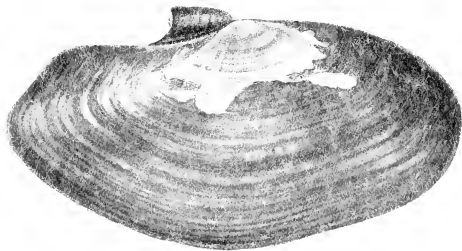


MONOGRAPH  
OF THE GENUS  
SOLETELLINA.

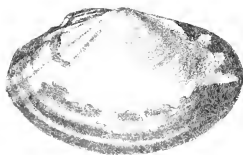
My soul is in, of lungs,  
For the secret, the sea,  
and the heart of the green ocean  
Sinks a thrilling pulse through to  
*Leptis*



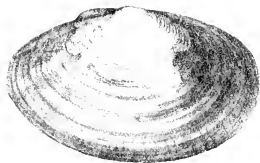




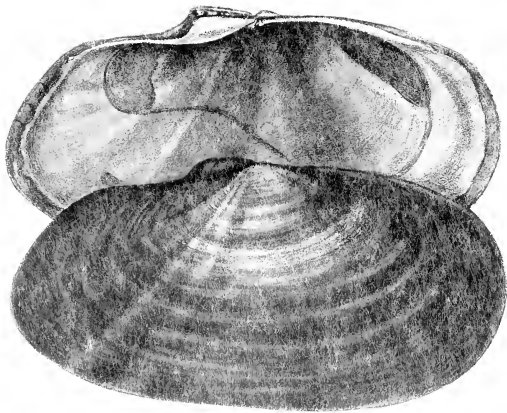
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Overly, 1870, etc.

Vincent Peroko Imp.

# SOLETELLINA.

PLATE I.

Genus *SOLETELLINA*. De Blainv. l. c.

*Testa oblongo-transversaria vel ovata, compressa, plerumque 1, 2, vel 3, subapiculata, scirriga vel concentricè striata; plerumque papillosa, posticè sæpe hinculata, epibothriæ eorum induta, laterè nativè rotundata, posticè raris, acutè, triseriæ, vix nec-sæpiè, musculosis parvis. Cæterò deuto nativè parva eredo in laterè sinistrè, tubos in laterè sinistrè intertubo bifurcatis. Vignamuribus subapicatis, scleratis, sub callositate oblongè conspicuè laterali posticæ. Impressio muscularis posticè angulifer sinuata.*

Shell oblong-transverse or ovate, compressed, generally equivalve, nearly equilateral, smooth or concentrically striated, generally papilæ and mostly two-rayed posteriorly, covered with a horny epidermis, anterior side rounded, posterior various, sometimes shortly truncated, sometimes acuminated, umbos small. Hinge with a single small erect tooth in the left valve, two teeth in the right valve, sometimes bifurcated. Ligament rather large, external, placed upon a conspicuous oblong internal callosity. Muscular impression of the mantle largely sinuous.

The genus *Solotellina* was founded by De Blainville in his 'Mém. de Malacologie' for the purpose of grouping together "four or five species of *Succa* of Lamarck." He does not particularize the species, but takes Lamarck's *Succa costata* (= *Succa diplos*, Lamour.) as the type. The genus, as lately arranged and named by M. Deshayes in Mr. Cuming's collect, includes but this one Lamourian species. It includes also the *Solca arborescens* of Wood, Index Test. Supplement, typical of another section, and, agreeing with these two very well-defined types, we introduce a series of twenty-one characteristic species.

The species of large size allied to *S. diplos* are from the Malacca or Philippine Islands. Of the other division of the genus the finest and most characteristic example is *S. Australis*, from Columbia, and an allied species, *S. Japonica*, which inhabits a nearly similar latitude in the opposite hemisphere. An intermediate, represented by *S. nitida*, appears in New Zealand.

Species 1. (Mus. Cuming.)

*SOLETELLINA CONSORSINA.* Sol. *Testa ovato-transversâ, glaucoscutata, subequilaterali, rugoso-striatâ, par-*

*perisarcato-ovata, epideride cute eorum hinculata, laterè nativè subangulose rotundata, posticè obliquè truncata, conspicuè costata.*

THE ALLIED *SOLETELLINA*. Shell ovately transverse, flexuously arched, nearly equilateral, roughly striated, purple-blue, covered with an olive horny epidermis, anterior side rather narrowly rounded, posterior obliquely truncated, compressly beaked.

DESHAYES, MS., Mus. Cuming.

Hab. Philippine Islands; Cuming.

Distinguished by a compressed beak-like flexure of the posterior side.

Species 2. (Mus. Cuming.)

*SOLETELLINA NYMPHEALIS.* Sol. *Testâ ovato-transversâ, superè trigonè, pluvioscruentâ, vix equilaterali, hinculâ, fulvoscutato-ovata, nitente, raris umbos concentricè, epideride laterale eorum prope marginem indutâ, laterè nativè late rotundata, posticè breviorè, subtruncato-costata.*

THE WATER *SOLETELLINA*. Shell ovately transverse, triangular at the upper part, flatly compressed, scarcely equilateral, smooth, fulvous-flesh, shining, stained with rose towards the umbos, covered near the margin with a yellowish horny epidermis, anterior side broadly rounded, posterior shorter, somewhat irregularly beaked.

DESHAYES, MS., Mus. Cuming.

Hab. Australia.

An Australian species, of a distinct typical character from the preceding, flat and smooth sloping triangularly on each side from the umbos.

Species 3. (Mus. Cuming.)

*SOLETELLINA EPIDERMIA.* Sol. *Testâ ovato-transversâ, concavè vix, vix equilaterali, cute plicatâ, indutâ, sublate, sclerato-ovata, raris umbos concentricè, epideride eorum late rotundè indutâ, laterè nativè late rotundata, posticè breviorè, subtruncato-costata.*

THE EPIDERMID *SOLETELLINA*. Shell ovately transverse, rather convex, scarcely equilateral, rudely plicately striated, dull chalk-white flecked towards the umbos, covered with a fulvous shining horny ep-

SOLETELLINA.—PLATE I.

dermis, anterior side broadly rounded, posterior side shorter, somewhat attenuately beaked.

DESHAYES, MS., Mus. Cuming  
*Hab.* Fort Adelaide, Australia.

More convex than the preceding species, and differing also in being roughly plicately striated, covered with a peculiarly glittering transparent deciduous horny epidermis.

Species 4 (Mus. Cuming)

SOLETELLINA CUMINGIANA. *Sal. testis oblongo-ovata, uterque compressiuscula, apiculata, rugoso-striata, porporositate-areolata, postice biculata, epidermide straciva*

*culata, lateribus superioribus subparallelis rectis, anterior latè rotundata, postice obliquè rotundata, subflexuosis-impresso*

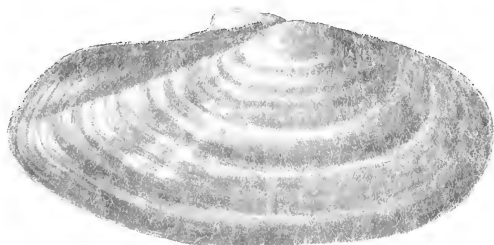
CUMING'S SOLETELLINA. Shell oblong-transverse, rather compressed, equilateral, roughly striated, purple-blue, posteriorly two-nyed, covered with an olive epidermis, sides almost equally straight at the upper part, anterior broadly rounded, posterior obliquely rounded, slightly flexuously impressed.

DESHAYES, MS., Mus. Cuming.  
*Hab.* Island of Negros, Philippines: Cuming

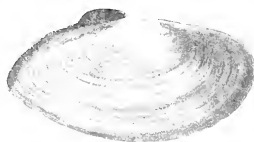
The form of this elegant species is simply oblong-ovate, the anterior side being the broader, whilst the posterior is but slightly flexuously impressed.



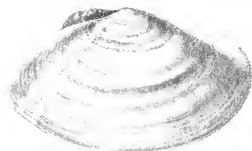




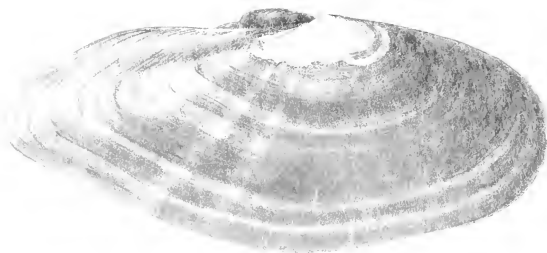
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# SOLETELLINA.

PLATE II

Species 5. (Mus. Cuming.)

**SOLETELLINA ADAMSHI.** *Sol. testâ elongato-transversa, concavisculâ, inequilaterali, carinâo-purpureâ, posticâ bibradiatâ, epidermide olivaceâ nitente indatâ, latere antico rotundato, postico paulo longiore, obtusè compresso-truncato.*

**ADAM'S SOLETELLINA.** Shell elongately transverse, rather convex, inequilateral, bluish-purple, posteriorly two-rayed, covered with a shining olive epidermis, anterior side round, posterior a little the longer, obliquely compressly truncated.

**DISHAYES, MS.** Mus. Cuming.

*Hab.* Island of Negros, Philippines.

Chiefly distinguished by the posterior end being slightly obliquely truncated, and rather compressed.

Species 6. (Mus. Cuming.)

**SOLETELLINA MITDA.** *Sol. testâ oblongo-oratâ, compressisculâ, subequilaterali, purpureo-ovato-âllâ, epidermide carinâ hâri transscidâ nitente indatâ, latere antico rotundato, postico breviori, declivissimo-ânto, et concentricè rugosâ.*

**THE SHINING SOLETELLINA.** Shell rather compressed, nearly equilateral, purplish-white, covered with a smooth, shining, transparent, horny epidermis, anterior side rounded, posterior shorter, slopingly acuminate, and concentrically wrinkled.

**GRAY, MS.** Mus. Brit.

*Hab.* New Zealand; Strougé.

Of an extremely delicate purple-white substance, covered with a peculiarly clear, glittering, horny epidermis.

Species 7. (Mus. Cuming.)

**SOLETELLINA BIRADIATA.** *Sol. testâ ovato-transversa, concavo-planâ, aequaliterali, bibradiatâ, purpureo et*

*griseo transversa strigata, posticâ bibradiatâ, lateribus superioribus arcuato-bibradiatis, deinde sublatravato-rotundatis.*

**THE BIRADIATE SOLETELLINA.** Shell ovately transverse, convexly flattened, equilateral, smooth, transversely streaked with purple and grey, posteriorly two-rayed, sides arcuately sloped at the upper part, then somewhat attenuately rounded.

*Solen bibradiatus*, Wood, Gen. Conch. pl. 33. f. 1, Index Testi, pl. 3. f. 26

*Hab.* Port Adelaide, Australia.

Characterized on the posterior side with two concentric narrow purple rays, on a fulvous halo-like ground, breaking through the transverse blue and purple streaks.

Species 8. (Mus. Cuming.)

**SOLETELLINA BIPHYOS.** *Sol. testâ elongato-transversa, subcompressâ, subequilaterali, purpureâ, posticâ bibradiatâ, epidermide coracâ olivaceâ indatâ, latere antico rotundato, postico flexuosè subacuminato-rostrato.*

**THE TWO-RAYED SOLETELLINA.** Shell elongately transverse, rather compressed, nearly equilateral, purple, posteriorly two-rayed, covered with an olive horny epidermis, anterior side rounded, posterior flexuosely sub-acuminately beaked.

*Solen diplos*, Lamareus, Mantissa, p. 554. Chemnitz, Conch. Cab. vol. vi. p. 68. pl. 7. f. 53, 54.

*Solen rostratus*, Lamarek.

*Escaudinia rostrata*, Deshayes.

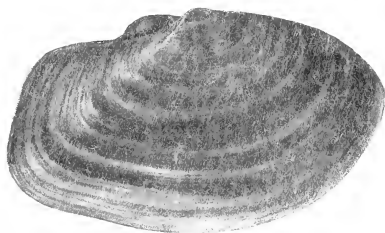
*Subtellina radiata*, De Blainville.

*Hab.* Malacca.

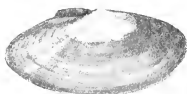
Distinguished from its allied species by the flexuosely-acuminately beaked form of the posterior extremity.







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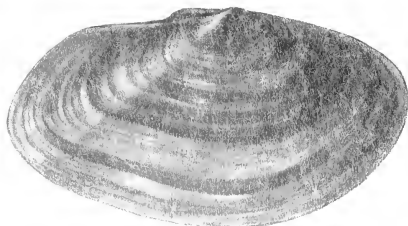
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Small Solecellina

Small Solecellina

# SOLETELLINA.

PLATE III.

Species 9. (Mus. Cuming.)

**SOLETELLINA TRUNCATA.** *Sol. testâ ovato-transversâ, postice obliquè contorta, subequilaterali, inequilaterali, valvi sinistra convexa, dextra plana, nigrescente-purpureâ, epidermide olivaceâ imbutâ, latere antico rotundato, postico brevi, latissimo truncato.*

**THE TRUNCATED SOLETELLINA.** Shell ovately transverse, peculiarly obliquely contorted, nearly equilateral, inequivalve, left valve convex, right flattened, blackish-purple, covered with an olive epidermis, anterior side rounded, posterior short, very broadly truncated.

*Hab.* Molucces.

An interesting species, distinguished from all others by the flattened growth of the right valve, and by its general oblique contortion.

Species 10. (Mus. Cuming.)

**SOLETELLINA SILLIQUA.** *Sol. testâ angust-transversâ, tenui, inequilaterali, lateri, caraco-cultri, epidermide croceâ olivaceâ transverseâ imbutâ, postice parvâ bivalvâ, latere antico rotundato, postico obliquè acuminato-rotundato.*

**THE POD SOLETELLINA.** Shell narrowly transverse, thin, equilateral, smooth, flesh-white, covered with a shining transparent olive horny epidermis, faintly two-rayed on the posterior side, anterior side rounded, posterior obliquely acuminately rounded.

*Hab.* New Zealand; Hart.

A delicate flesh-tinged shell, covered with a thin transparent shining horny epidermis exhibiting the two posterior rays so frequently characteristic of this genus.

Species 11. (Mus. Cuming.)

**SOLETELLINA DORACHOIDES.** *Sol. testâ oblongo-transversâ, tenui, inequilaterali, bivalvâ, latè custodiens-cultri, epidermide croceâ olivaceâ tenuissimâ imbutâ, tuberosis anguliferis rotundatis, postico multo breviorè.*

**THE DORAX-LIKE SOLETELLINA.** Shell oblong-transverse, thin, inequilateral, smooth, broadly chestnut-rayed, covered with a thick transparent, horny epidermis, sides equally rounded, posterior much the shorter.

*Hab.* Port Adelaide, Australia.

This little species does not present the usual inequality in the form of the lateral extremities, and it is enveloped in an unusually thick transparent horny epidermis, resembling that of *Silicogya*.

Species 12. (Mus. Cuming.)

**SOLETELLINA ACUMINATA.** *Sol. testâ elongato-transversâ, inequilaterali, caraculo-cultri-purpureâ, epidermide nigrescente-olivaceâ imbutâ, ad umbonam crassâ, latere antico rotundato, postico obliquè flexuoso-acuminato, angulina obtusata rugosam flexuante.*

**THE ACUMINATED SOLETELLINA.** Shell elongately transverse, inequilateral, bluish-purple, covered with a blackish-olive epidermis, crouled at the umbones, anterior side rounded, posterior obliquely flexuously acuminated, forming an obtuse wrinkled angle.

*Deshayes, MS., Mus. Cuming.*

*Hab.* Philippine Islands.

Of rather more rough and solid structure than its allies, with a darker epidermis, and conspicuous above all in having the posterior extremity obliquely acuminated.

Species 13. (Mus. Cuming.)

**SOLETELLINA INCERTA.** *Sol. testâ oblongo-transversâ, postice latiore, tenui, inequilaterali, lateri, epidermide tenui croceâ olivaceâ imbutâ, postice obscure bivalvâ, latere antico rotundato, postico obliquè truncato.*

**THE DOUBTFUL SOLETELLINA.** Shell oblong-transverse, broader posteriorly, thin, inequilateral, smooth, covered with a thin horny epidermis, obscurely two-rayed posteriorly, anterior side rounded, posterior obliquely truncated.

*Deshayes, MS., Mus. Cuming.*

*Hab.* New Zealand; Strange.

Of simple form, with the posterior side only very slightly compressly truncated.

Species 14. (Mus. Cuming.)

**SOLETELLINA ATRATA.** *Sol. testâ ovato-transversâ, postice latiore, tenui, concentricè striatâ, atro-purpureâ, epidermide croceâ olivaceâ imbutâ, postice bivalvâ, latere antico rotundato, postice tenuissimâ, rotundato-truncato.*

January, 1857

SOLETELLINA.—PLATE III

THE DARK SOLETELLINA. Shell ovality transverse, broader posteriorly, thin, concentrically striated, dark purple, covered with a horny olive epidermis, two-rayed posteriorly, anterior side rounded, posterior rather swollen, rotundately truncated.

DESHAYES, MS., Mus. Cuming.

*Hab.* Catanauan, Island of Luzon, Philippines. Cuming.

Closely allied to the preceding species, but of a more *Domas*-like form, and darker-coloured.

Species 15 (Mus. Cuming.)

SOLETELLINA FLAVILATA. *Sol. testâ oblongo-transversa*

*subconcaerâ striquis crabi, atro-purpurâ epider-  
mide olivaceo-fusca indurâ, latere antico rotundato,  
postico obliquè rotundato-truncato.*

THE FLAT SOLETELLINA. Shell oblong-transverse, flatly convex, nearly equilateral, dark purple, covered with an olive-brown epidermis, anterior side rounded, posterior obliquely rotundately truncated.

*Hab.* Moluccas.

Clearly distinguished from the larger typical species of the genus by its less elongately transverse growth and darker colour.







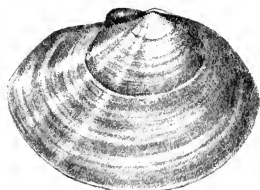
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# SOLETELLINA

PLATE IV

Species 16. (Mus. Cuming.)

**SOLETELLINA JAPONICA.** *Sol. testis orbiculato-transversâ, planis-coarctâ, inequilaterali, levigatâ, parparoso-ventrali, crenatâ subulâ, epidermide cœvâ fulvo-olivaceâ transverâ subulâ; latere antico latè et subulato, postico brevi, obliquè subacuminatè truncatè.*

**THE JAPAN SOLETELLINA.** Shell orbicularly transverse, flatly convex, inequilateral, smooth, purple-white, delicately rayed, covered with a transparent, fulvous-olive, horny epidermis anterior side broadly rounded, posterior short, obliquely subacuminately truncated.

DESHAYES, MS., Mus. Cuming.

*Hab.* Japan; Dr Siebold.

Delicately purple-rayed upon a white ground, beneath a characteristic, transparent, shining, fulvous-olive epidermis.

Species 17. (Mus. Cuming.)

**SOLETELLINA REVERSA.** *Sol. testis obliquè orbiculari, levâ, pellucidâ, valde inequilaterali, levigatâ, cœnolevitate-ullâ, epidermide levâ cœvâ transverâ subulâ fuscescente-cœvâ subulâ, latere antico brevissimo, postico obliquè latè expanso, subulato subulato.*

**THE REVERSED SOLETELLINA.** Shell obliquely orbicular, thin, transparent, very inequilateral, smooth, bluish-white, covered with a thin, transparent, yellowish-horny epidermis, anterior side very short, posterior obliquely broadly expanded, both rounded.

*Hab.* Malacca; Dr Trill.

In this and the following species, both very thin and horny, the sides are, as it were, reversed, the posterior being much more broadly and more largely developed than the anterior.

Species 18. (Mus. Cuming.)

**SOLETELLINA ORBIOLATA.** *Sol. testis valiquè orbiculari, levâ, sesquipellucidâ, valde inequilaterali, levigatâ, cœnolevitate, cœnolevitate, epidermide cœvâ transverâ subulâ fuscescente-cœvâ subulâ, latere antico brevissimo, postico lato subulato expanso, subulato subulato.*

**THE ORBIOLAR SOLETELLINA.** Shell obliquely orbicular, thin, semi-transparent, very inequilateral, smooth, shining, blueish-white, covered with a yellowish-olive, transparent, horny epidermis, anterior side very short, posterior side broad, rather obliquely expanded, both rounded.

*Suba orbiculata*, Wood, Index Testaceologicus, Supp. p. 3, pl. t. f. 4.

*Hab.* Sumatra; Captain Adolphe Martin.

This species scarcely differs from the preceding, yet it is scarcely so obliquely expanded, and the difference, though slight, is characteristic.

Species 19. (Mus. Cuming.)

**SOLETELLINA NUTTALLI.** *Sol. testis obliquè ovata, subaequilaterali, inequilateral, calva destra plusquam, levâ levâ, ad marginem posticum a densâ striatâ, albâ parparosâ crenatâ subulâ, postico levigatâ epidermide cœvâ fulvo-olivaceâ pellucidè-crenata subulâ, latere antico subulato, postico brevi, obliquè truncatè.*

**NUTTALL'S SOLETELLINA.** Shell obliquely ovate, nearly equilateral, inequilateral, right valve the flatter, smooth, densely striated at the posterior margin, white, delicately tinged with purple, two-rayed posteriorly, covered with a transparent, shining, fulvous-olive, horny epidermis, anterior side rounded, posterior short, obliquely truncated.

CONRAD, Journ. Acad. Nat. Sci. Phil.

*Hab.* San Diego, California; Nuttall.

This very beautiful species is highly distinguished by its remarkably transparent and richly coloured horny epidermis.

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

**SOLETELLINA TEMENS.** *Sol. testis ovato-transversâ, levâ levâ, inequilaterali, levâ, irregulariter expanso-striatâ, alba parparâ, postico brevissimo, epidermide albâ cœvâ levâ decussatâ subulâ, latere antico subulato postico brevi, obliquè subacuminatè truncatè.*

**THE SWOLLEN SOLETELLINA.** Shell ovately transverse-swollen, inequilateral, thin, irregularly roughly striated, dark purple, posteriorly two-rayed, covered with a thin, deciduous, olive epidermis, anterior side rounded, posterior short, obliquely sub-acuminately truncated.

DESHAYES, MS., Mus. Cuming.

*Hab.* Island of Negros, Philippines; Cuming.

Of light tumid growth, still characterized by the two light posterior rays.

Species 21. (Mus. Cuming.)

**SOLETELLINA OBSCURATA.** *Sol. testis trigono-subulato, subaliquâ, subaequilaterali, inequilateral, cœvâ sinistra plusquam, levâ levâ, postico levigatâ, parparoso-gressâ, hinc alve saturaâ, hinc levâ, latere antico subulato, postico brevissimo, obliquè truncatè.*

**THE DARKENED SOLETELLINA.** Shell triangularly orbicular, rather oblique, nearly equilateral, inequilateral, right valve the flatter, smooth, striated posteriorly, purple-grey, here and there darker-banded, anterior side rounded, posterior shorter, irregularly truncated.

DESHAYES, MS., Mus. Cuming.

*Hab.* ———?

A very characteristic species, belonging to the same orbicular type of the genus as *S. Japonica* and *Nuttalli*, but quite distinct specifically from either.



## SOLETELLINA.

	1845	1846		1847	1848
<i>venusta, Deshayes</i>	III	12	<i>antada, Gray</i>	II	10
<i>Adansii, Deshayes</i>	II	5	<i>Nuttallii, Conrad</i>	IV	14
<i>strata, Deshayes</i>	III	14	<i>synphalis, Deshayes</i>	I	3
<i>radiata (Solea), Wood</i>	II	7	<i>orbiculata (Solea), Wood</i>	IV	18
<i>consobrina, Deshayes</i>	I	1	<i>obscurata, Deshayes</i>	IV	21
<i>annigenta, Deshayes</i>	I	4	<i>planulata, Revere</i>	III	15
<i>laphis (Solea), Linnaeus</i>	II	8	<i>radiata, De Blainville</i>	I	8
<i>Donacoides, Revere</i>	III	11	<i>reversa, Revere</i>	IV	17
<i>quadrata, Deshayes</i>	I	3	<i>siliqua, Revere</i>	III	19
<i>maculata, Deshayes</i>	III	13	<i>truncata, Revere</i>	III	16
<i>fragosa, Deshayes</i>	IV	14	<i>humens, Deshayes</i>	IV	24



# MONOGRAPH

OF THE GENUS

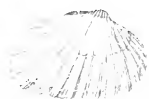
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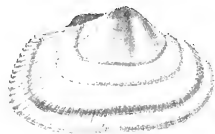








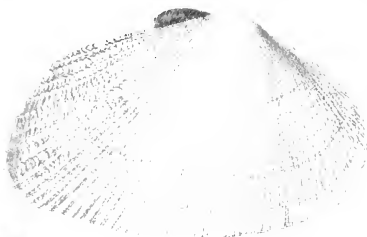
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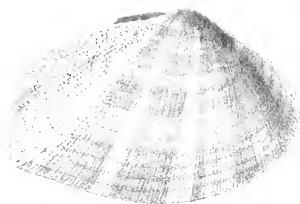
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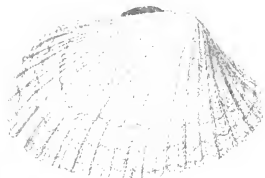
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# CAPSA.

PLATE I

Genus CAPSA, Brugues, &c.

*Testa oblongo-transversa, subquadrata, rotundata, ad latera paulatim hians, inequaliteris, latere postico unguis. Cardo, in utraque calva dentibus duobus brevibus rotundatis, quorum, in calva dextra, postico majore, subrecurvo, in calva sinistra, antice majore, tergono, solito, obtuso bifido. Ligamentum subamplum, ceteratum. Impressio palli sicut unguis, lato.*

Shell oblong-transverse, somewhat square, a little gaping at the sides, inequilateral, posterior side the longer. Hinge with two central teeth in each valve, of which, in the right valve, the posterior is the larger, a little recurved, in the left valve the anterior is the larger, triangular, solid, and obtusely bident. Ligament rather large, external. Impression of the mantle showing a large broad sinus.

On reference to the 'Encyclopédie Méthodique,' Pl. 231, it will be seen that the very characteristic Uravio shell represented in the accompanying Plate, the old *Fanus deflorato* of Linnaeus (*Sanguinolaria rugosa*, Lamarck, *Psammobius rugosus*, Sowerby) is there figured by Bruguière under the generic title of *Capsa*. Nearly twenty years afterwards the name was appropriated by Lamarck to distinguish two bivalves (*C. laevigata* and *Brasilienensis*) which belong more properly to the genus *Dioate*. This misappropriation of the term *Capsa* obtained a wide circulation; it is now restored to the typical *Fanus deflorato* of Linnaeus, inhabiting a wide range of latitude over the Eastern seas, and to a closely allied species from Tahiti.

Species 1. (Fig. a to f), Mus. Cuming

CAPSA DEFLORATA. *Capsa testâ oblongo-transversa, rotundata, calvalem densissimè rugoso-striatâ et levatâ, latere postico levissimè, et levatâ, subrecurvo, postico semper calvalem et plus aut minus subobtusis rotundis; albidâ, aut carnea rosoreâ, aut intus viridi-olivaceâ, ubi non squata et radiatâ, intus sepissime intescente, postico intus parvis aculeis: tenax.*

THE DEFLOWERED CAPSA. Shell oblong-transverse, acute-angled, radiately very densely roughly striated and ridged; ridges sometimes thin, sometimes stronger, posteriorly always strong, and more or less indusely eroded; whitish, or flesh-rose, or dark livid-violet, obscurely zoned and rayed, interior often yellowish-stained posteriorly with very deep purple-violet.

*Fanus deflorato*, Linnaeus, Syst. Nat. (12th edit.) p. 1133

*Capsa deflorata*, Bruguière, Deshayes.

*Fanus cerasioides*, Cuvier.

*Fanus papiræus*, Cuvier.

*Sanguinolaria rugosa*, Lamarck.

*Psammobius rugosus*, De Blainville.

*Psammobius rugosus*, Sowerby.

*Hab.* Eastern Seas.

The figures 1 a to 1 f in the accompanying Plate represent this well-known species in all its varieties of sculpture and colour, in different stages of growth.

Species 2. (Mus. Cuming.)

CAPSA TAHITIENSIS. *Capsa testâ orato-transversa, tenui, calvâ, subcentrali, confertissimè rugoso-levatâ, latere postico levissimè, elevatâ, subrecurvo, squamatis; albidâ, latere antice radiatâ, postico, subbifido quadrato, latiusculo, rivas aequivo compresso.*

THE TAHITI CAPSA. Shell oately transverse, rather thin, somewhat ventidose, very closely roughly ridged, posterior ridges thin, raised, rather prickly-scuted, white, anterior side rounded, posterior somewhat obliquely square, rather broad, compressed towards the margin.

BERNARDI, MS. in Mus. Cuming.

*Hab.* Tahiti.

Of lighter structure than the preceding species, more delicately prickly sculptured on the posterior side, which is broader and more squarely compressed.



MONOGRAPH  
OF THE GENUS  
C A P S E L L A.

Seeger 1861  
Habitat: on oak and various gums only.  
The uncolored bottom of the deep. — *M. L. C. 1861*.







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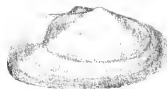
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# CAPSELLA.

PLATE I.

GENUS CAPSELLA, Desh. 1854.

*Testa subelongato-transversa, pleuraeque a posterolateris (triangulo vel quadrato) striata, epidermide saepe inaequaliter colorata vel alba, latere antico rotundato, postico paulo angulato-truncato, angulo obtusissimo, interdentibus nullis. Cardo dente unico in calce sinistra, denticulis in calce dextra, bifurcatis. Ligamentum externum, subapplanatum, sub calli subte oblongum interius positum. Impressio muscularis pallide saepe iter sinuosa.*

Shell rather elongately transverse, generally equilateral, smooth or concentrically striated, covered with an olive epidermis, which is mostly horny, anterior side rounded, posterior slightly angularly truncated, angle very obtuse, sometimes scarcely any. Hinge with one tooth in the left valve, two teeth in the right valve, bifurcated. Ligament external, rather large, placed upon an internal oblong callosity. Muscular impression of the mantle largely sinuous.

While lately arranging the Lamarckian family *Nugosiphacea* in the collection of Mr. Cuming, M. Deshayes set apart a characteristic series of thirteen species of shells collected in the Eastern Seas, the only one of which hitherto described was included by Lamarck in his genus *Psarosiphon* (*P. elongata*). The remaining twelve M. Deshayes described in the 'Proceedings of the Zoological Society' for 1854, under the title of *Capsella*, taken subgenerically as a section of the Lamarckian *Capsa*. To this genus, better known to conchologists as *Iphigonia* of Schumacher, the shells under consideration have less affinity than to *Sidulitina*. They partake materially of the characters of the latter genus. The hinge scarcely differs except in the teeth being more distinct and in the posterior oblong callosity being less prominently developed, but there is a very natural assimilation of external characters. They are all of a uniform oblong-transverse growth, with the posterior side uniformly simply truncated into a faintly obtuse angle.

Twelve of the species are from the Philippine Islands. The remainder are from China, Ceylon, and the Moluccas.

Species 1. (Mus. Cuming.)

CAPSELLA CHINESENSIS. *Caps. testâ elongato-transversa, cernis angustiora compressa, epidermide eivide latere costatoâ subulâ, inequilaterali, latere antico longiore, rotundato, postico declivi-compresso, parva truncato.*

THE CHINESE CAPSELLA. Shell elongately transverse, compressed towards the margin, covered with a bright yellowish-chestnut epidermis, inequilateral, anterior side the longer, rounded, posterior slantingly compressed, but little truncated.

DESHAYES, Proc. Zool. Soc. 1854, p. 348.

Hab. China Seas.

Of an oblong-triangular form, compressed towards the margin, and bright yellowish-chestnut colour.

Species 2. (Mus. Cuming.)

CAPSELLA DIFFICILIS. *Caps. testâ elongato-transversa, inaequali, tenui, equilaterali, tenuistriata, epidermide laterecosto-eivide inulâ, latere antico obtuso, superiore recto, postico obliquè truncato, angulata obtusissima formante.*

THE RUGGED CAPSELLA. Shell elongately transverse, rather swollen, thin, equilateral, finely striated, covered with a yellowish-green epidermis, anterior side obtuse, straight at the upper part, posterior obliquely truncated, forming a very obtuse angle.

DESHAYES, Proc. Zool. Soc. 1854, p. 347.

Hab. Philippine Islands; Cuming.

Of rugged growth, covered with a little dull yellowish-green epidermis, partially crooked about the umbos.

Species 3. (Mus. Cuming.)

CAPSELLA RUFA. *Caps. testâ elongato-transversa, tenui, compressissima, subequilateralâ, arcuata, rugosostriata, epidermide castaneo-purpâ inulâ, versus umbones crenâ, intus convexo-papillato, latere antico subulato-rotundato, postico obliquè flexuoso-truncato.*

THE RED CAPSELLA. Shell elongately transverse, thin, rather compressed, nearly equilateral, arched, roughly striated, covered with a chestnut-red epidermis, crooked towards the umbos, anterior rose-purple, anterior side rather attenuately rounded, posterior obliquely flexuously truncated.

DESHAYES, Proc. Zool. Soc. 1854, p. 347.

Hab. Bay of Manila; Cuming.

Distinguished by a somewhat arched growth, clothed

with a light chestnut-red epidermis, not shining, as in *C. chinensis*.

Species 4. (Mus. Cuming.)

**CAPSILLA ELONGATA.** *Caps. testâ oblongo-transversâ, compresso-convexâ, subequilaterali, irregulariter rugoso-striatâ, fulvescente-albâ, coraco tinctâ, violacea radiatâ, latere antico declivi-rotundato, postico latè truncato, angulâ obtusissimâ formatâ.*

**THE ELONGATED CAPSELLA.** Shell oblong-transverse, compressly convex, nearly equilateral, irregularly roughly striated, fulvous-white, flesh-tinged, rayed with violet, anterior side slantingly rounded, posterior broadly truncated, forming a somewhat obtuse angle.

*Psammobia elongata*, Lamarck, Anit. sans vert. vol. vi. p. 176.

*Hab.* Philippine Islands; Cuming.

This Lamarckian species of *Psammobia* may be regarded as the type of the genus under consideration, all the species of which, if it will be seen, are well distinguished from the true *Psammobia*.

Species 5. (Mus. Cuming.)

**CAPSILLA SOLIDA.** *Caps. testâ elongato-transversâ, convexâ marginibus compressâ, crassiusculâ, irregulariter rugoso-striatâ, subequilaterali, soriditè albâ, ad umbones fulvo-purpureoscente, epidermide fibrôsâ prope marginem indatâ, latere antico rotundato, postico latè truncato, angulâ obtusissimâ formatâ.*

**THE SOLID CAPSELLA.** Shell elongately transverse, compressed towards the margin, rather thick, irregularly roughly striated, nearly equilateral, dull white, fulvous-purple at the umbones, covered near the margin with a fibrous epidermis, anterior side rounded, posterior broadly truncated, forming an obtuse angle.

*Hab.* Malacca.

Of solid roughly striated growth and compressly oblong-square form, tinged with fulvous-purple.

Species 6. (Mus. Cuming.)

**CAPSILLA VIOLACEA.** *Caps. testâ elongato-transversâ, gibbosiusculâ, inequilaterali, tenuistriatâ, intense purpureo-violaceâ, epidermide fibrôsâ prope marginem indatâ, latere antico levissime, subattenuato-rotundato, postico latè obliquè truncato, angulâ obtusissimâ formatâ.*

**THE VIOLET CAPSELLA.** Shell elongately transverse, rather gibbous, inequilateral, finely striated, deep purple-violet, covered with a fibrous epidermis near the margin, anterior side the shorter, rather attenuately rounded, posterior broadly obliquely truncated, forming a very obtuse angle.

*Hab.* Bay of Manila; Cuming.

A rather solid gibbous shell, of a characteristic deep purple-violet colour, covered near the margin with a very decided fibrous epidermis.

Species 7. (Mus. Cuming.)

**CAPSILLA RADIIATA.** *Caps. testâ elongato-transversâ, subangustâ, postico gibbosâ, subequilaterali, tenui, subtilissimè striatâ, florescente-roseâ, translucidâ, umbonibus rivide roseis, latere antico attenuato-rotundato, postico subampliter obliquè truncato.*

**THE RAYED CAPSELLA.** Shell elongately transverse, rather narrow, gibbous posteriorly, nearly equilateral, thin, very finely striated, yellowish-rose, translucent, umbones deep rose, anterior side attenuately rounded, posterior side rather largely obliquely truncated.

DESMAYES, *Proc. Zool. Soc.* 1854, p. 348.

*Hab.* Oriou, Bay of Manila; Cuming.

An extremely delicate semi-transparent rose-tinted shell, much more largely angularly developed on the posterior than on the anterior side.





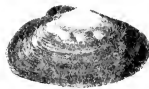
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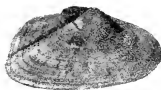
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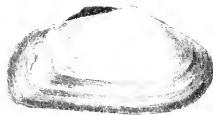
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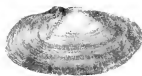
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# CAPSELLA.

## PLATE II.

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

**CAPSELLA CRASSULA.** *Caps. testâ ovato-transversa, sub-teropodâ, aequilaterâ, transversâ inaequaliter striatâ subulatâ, epidermide olivaceo-fusâ indurâ, ut umbones eorum, latere antico obtuso, semicirclipico, postico latè truncato, flexurâ obliquâ bipartitâ.*

**THE THICK CAPSELLA.** Shell ovately transverse, subtriangular, equilateral, transversely inequally striately grooved, covered with an olive-brown epidermis, eroded at the umbones, anterior side obtuse, semi-elliptic, posterior broadly truncated, divided by an oblique flexure.

DESHAYES, *Pro. Zool. Soc.* 1854, p. 349.

*Hab.* Philippine Islands

Of an oblong subtriangular form, covered with a dark olive-brown epidermis, which is much eroded at the umbones.

Species 9. (Mus. Cuming.)

**CAPSELLA MINOR.** *Caps. testâ ovato-transversa, compressâ, tenui, subaequilatèrâ, irregulariter striatâ subulatâ, epidermide florescente testâ, rionatâ, obscure rotundâ, latere antico obtuso, parvo attenuato, superâe convexiusculâ, declivi, postico angustiore, attenuato, subtruncato, flexurâ via natiuitatâ bipartitâ.*

**THE LESSER CAPSELLA.** Shell ovately transverse, compressed, thin, nearly equilateral, irregularly striately grooved, clothed with a yellowish epidermis, violet, obscurely rayed, anterior side obtuse, but little attenuated, rather convex and slanting at the upper part, posterior side narrower, attenuated, slightly truncated, divided by a scarcely perceptible flexure.

DESHAYES, *Pro. Zool. Soc.* 1854, p. 347.

*Hab.* Bay of Manila; Cuming.

A compressed violet-tinged species, somewhat flexuously attenuated on the posterior side.

Species 10. (Mus. Cuming.)

**CAPSELLA VIRESCENS.** *Caps. testâ elongato-transversa, tenui, subaequilatèrâ, laevigatâ, albâ, versus umbones convexâ, nigra cartilaginea striatâ et tripinnimaculatâ, epidermide aut oleo olivaceo-citrinâ indurâ, latere antico obtuso, postico subtruncato-truncato.*

**THE GREEN CAPSELLA.** Shell elongately transverse, thin,

nearly equilateral, smooth, whitish, rose-tinted towards the umbones, radiately streaked and triangularly marked with black, covered with a shining olive-green epidermis, sides rounded, posterior slightly flexuously truncated.

DESHAYES, *Pro. Zool. Soc.* 1854, p. 349.

*Hab.* — ?

A rather thin shell, of a light watery olive-green colour, tinged with rose towards the umbones, and obscurely marked with triangular black marks and rays.

Species 11. (Mus. Cuming.)

**CAPSELLA SOLEXILLA.** *Caps. testâ elongato-transversa, ellipticâ, laevigatâ, subaequilatèrâ, tenuistriatâ, epidermide olivaceâ indurâ, versus umbones purpurâ, latere antico attenuato-rotundato, postico quadrato-truncato, gibboso, angulo obtuso foranate.*

**THE LITTLE SOLEX CAPSELLA.** Shell elongately transverse, elliptic, rather swollen, nearly equilateral, finely striated, covered with an olive epidermis, purple towards the umbones, anterior side attenuately rounded, posterior side quadrately truncated, gibbous, forming an obtuse angle.

DESHAYES, *Pro. Zool. Soc.* 1854, p. 350.

*Hab.* Bay of Manila; Cuming.

Chiefly distinguished by the more gibbous proportions of the posterior end, which forms an obtuse angle.

Species 12. (Mus. Cuming.)

**CAPSELLA LUNULATA.** *Caps. testâ elongato-transversa, subteropodâ, aequilaterâ, tenui, transveridâ, laevi, epidermide nitidâ olivaceo-roseâ indurâ, grosse-anguliculate obs. are rotundâ, marginè si perire utroque latere aequaliter declivi, latere antico rotundato, superâe angustè laevigatâ, postico obliquè obtusè truncato, angustato.*

**THE LUNULED CAPSELLA.** Shell elongately transverse, somewhat triangular, equilateral, thin, translucent, smooth, covered with a shining olive horny epidermis, obscurely rayed with greyish-black, upper margin on each side equally slanting, anterior side rounded, narrowly humped above, posterior obliquely and obtusely truncated and narrowed.

DESHAYES, *Pro. Zool. Soc.* 1854, p. 349.

January, 1857.

## II Philippine Islands; Cuming.

Of a delicate transparent horny aspect, though solid, faintly rayed, distinguished by a narrow handle, which in other species of the genus is either wanting or but slightly indicated.

## Species 13. (Mus. Cuming.)

**CAPSELLA CANDIDA.** *Caps. testâ elongato-transversâ, solidâ, gibbosâ, subequilaterâ, albidâ, tenuistriatâ, alba, epidermide sâniâ, plicisâ, nervis, angustis, rotundâ, latere anteriori rotundatâ, plicisâ postâ, angustâ, subquadrate-truncatâ, angulâ in obtusâ angulâ.*

**THE WHITE CAPSELLA.** Shell elongately transverse, rather solid, gibbous, nearly equilateral, densely finely striated, white, covered towards the margins with a slight fibrous epidermis, anterior side rounded, posterior rather the longer, subquadrately truncated, forming an obtuse angle.

*Hab.* Philippine Islands; Cuming.

A white squarely elongated species, of solid gibbous growth, covered towards the margin with a slight deceduous fibrous epidermis.

## Species 14. (Mus. Cuming.)

**CAPSELLA TENUIS.** *Caps. testâ dimidietate usque testâ compressâ, subequilaterâ, tenui, striatâ, convexâ, epidermide sâniâ, plicisâ, nervis, angustis, rotundâ, latere anteriori rotundatâ, plicisâ postâ, angustâ, compressâ.*

**THE THIN CAPSELLA.** Shell elongately transverse, rather convex, nearly equilateral, thin, striately grooved, covered with a shining horny epidermis, slightly eroded at the umbos, sides rounded, the posterior rather compressed.

*DESHAYES, Pro. Zool. Soc. 1854, p. 319.*

*Hab.* Philippine Islands; Cuming.

Of a rather simple elongated form, with the sides almost equally rounded.

## Species 15. (Mus. Cuming.)

**CAPSELLA ROSACEA.** *Caps. testâ elongato-transversâ, depressiusculâ, tenui, subequilaterâ, tenuistriatâ, epidermide rosaceo-strawcoloreâ, plicisâ, nervis, angustis, rotundâ, latere anteriori rotundatâ, plicisâ, sublongiore, oblique compresso-truncatâ.*

**THE ROSE-TINGED CAPSELLA.** Shell elongately transverse, rather depressed, thin, nearly equilateral, finely striated, covered with a rose-tinged straw-coloured epidermis, with a few violet rays, anterior side rounded, posterior rather the longer, obliquely compressedly truncated.

*DESHAYES, Pro. Zool. Soc. 1854, p. 318.*

*Hab.* Philippine Islands.

Chiefly distinguished by its light rose-tinged straw-colour, sparingly rayed with violet.

## Species 16. (Mus. Cuming.)

**CAPSELLA LAYARDI.** *Caps. testâ orato-transversâ, tenui, fragili, convexâ, subequilaterâ, irregulariter striatâ, epidermide sâniâ, plicisâ, nervis, angustis, rotundâ, latere anteriori rotundatâ, plicisâ, sublongiore, oblique compressâ.*

**LAYARD'S CAPSELLA.** Shell acutely transverse, thin, fragile, rather convex, nearly equilateral, irregularly striately grooved, covered with a shining olive-horny epidermis, faintly purple-rayed, sides obtusely rounded, sloping from the umbos.

*DESHAYES, Pro. Zool. Soc. 1854, p. 118.*

*Hab.* Ceylon; E. F. Layard.

A shell of very light structure, covered with a shining horny epidermis, rayed with purple, which is best seen in the interior.

MONOGRAPH  
OF THE GENUS  
*SANGUINOLARIA.*

In the form of a freshwater fish.  
Felt as low water glistening in the sun.  
Of blood pearls, and eyes in miniature.  
With their small fry of fishes, crusted shells,  
Rich masses of coral seaweed, sparkling pebbles  
Fell out the eyes, and tempt the eager hand,  
To catch the lory pearls, etc. *W. C. Cresson.*









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SANGUINOLARIA.—PLATE I.

Species 4. (Mus. Cuming.)

SANGUINOLARIA SANGUIOLENTA. *Sang. testâ ovato-transversâ, solidiusculâ, inequilaterali, convexiusculâ, decussatâ striatâ, albâ, circa umbones rosâci, latere antico rotundato, occuminato-producto, ab umbonibus flexuoso-impresso.*

THE BLOOD-STAINED SANGUINOLARIA. Shell ovately transverse, rather solid, inequilateral, rather convex, decussately striated, white, tinged with rose around the umbones, anterior side rounded, posterior side acuminately produced, flexuously impressed from the umbones.

GÜMELIN, Syst. Nat. 13th edit. p. 3227

*Solea sanguinolenta*, Dillwyn

*Sanguinolaria sanguinolenta*, Deshayes

*Tellina rosea*, Gmelin

*Sanguinolaria rosea*, Sowbath

*Potamobidâ rosea*, Deshayes

Hab. Ceylon.

This fine species, the original type of the genus, well figured by Lister and Chemnitz, is of a rather solid clear

opaque-white texture, merely tinged with rose around the umbones.

Species 5. (Mus. Cuming.)

SANGUINOLARIA PURPURA. *Sang. testâ ovato-transversâ, tenui, fragili, pellucidâ, plano-convexâ, inequilaterali, transversim decussâ striatâ, intus intense nitide sanguineo-purpureâ, latere antico rotundato, postico regulariter attenuato-rotundato.*

THE PURPLE SANGUINOLARIA. Shell ovately transverse, thin, fragile, transparent, flatly convex, inequilateral, transversely closely striated, interior deep shining blood-purple, anterior side rounded, posterior regularly attenuately rounded.

DESHAYES, Proc. Zool. Soc. 1854, p. 346

Hab. ———?

The form of this species is very similar to that of the preceding, but it is of semitransparent texture, mostly deeply coloured from the interior throughout with shining blood-purple.

MONOGRAPH

OF THE GENUS

P S A M M O B I A .

By  
D. C. COOPER, Esq.  
Of the County of Bucks in the County  
of Bucks, in England.  
Printed by the Author, at B. B. 1793.







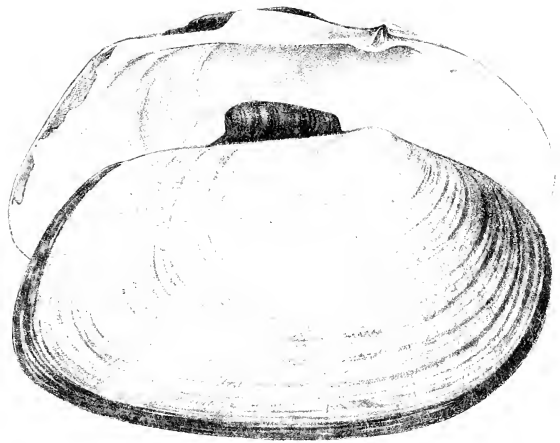
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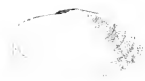
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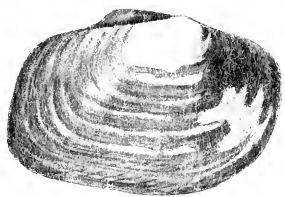
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PLATE I.

PLATE I.



# PSAMMOBIA.

PLATE I.

Genus: PSAMMOBIA, *Leach*.

*Tista transversa*, oblonga et elongato-ovata, ad altera paulo hinc latiora, sed cavitate strata, superficie irregulariter, utre utroque rotundata, plicis plus minus flexuosis angulata et transversis, interstria pulcherrime scripta; colore cæreo, interstria cum epidermide olivaceâ. Cauda in ceterâ alterâ dentibus duobus, plerumque hinc, in alterâ minus, ligamento exteriori. Impressioni musculari palli sicut auricula.

Shell transverse, oblong or elongately ovate, a little gaping at the sides, smooth or concentrically striated, mostly inequilateral, the anterior side rounded, the posterior more or less flexuously angled and truncated, sometimes very beautifully sculptured; colour various, sometimes with an olive epidermis. Hinge in one valve with two teeth, generally bifid, in the other with one tooth, the ligament being external. Muscular impression of the mantle with a very large sinus.

In a recent investigation of the genera ranging in the system between *Solen* and *Tellina*, M. Deshayes referred to the Lamarckian genus *Psammobia*, a beautiful series of undescribed species in the collection of Mr. Cuming that had not hitherto found a resting-place, and displaced one or two, as, for example, the *Cypæa rugosa*, that had been referred to this genus in error. By far the most characteristic forms of the group are those which were so described, and are here for the first time figured. They present a strong generic peculiarity in the flexuous angular development of the posterior angle, which in most species is elaborately sculptured with wrinkled ridges, and are remarkable for their display of delicate colours, generally of a rosy hue.

The *Psammobia* are, with one or two abnormal exceptions, confined to the Eastern Hemisphere, the genus being well represented on our own shores by the common *P. Porreensis*, and ranging as far south as Tasmania.

Species 1. (Mus. Cuming.)

PSAMMOBIA OBIENS. *Psam. testâ ovato-transverso, subquadratâ, solidâ, inequilateralî, transverso substriatâ, in latere postico inequilaterali subatâ; curvata, radius et limbus angulato raris, perpendicularibus subatâ, interstria breviorè, atq. obtusa, postico obliquè truncato.*

THE PISING-SUN PSAMMOBIA. Shell ovately transverse, somewhat square, rather solid, inequilateral, transversely finely striated, unequally grooved on the posterior side; flesh-rose, marked with rose-purple rays and angular lines, anterior side shorter, broadly obtuse, posterior obliquely truncated.

DESHAYES, Pro. Zool. Soc. 1854, p. 318.  
*Hab.* Japan.

Of the same typical character as *P. nozima*, more equi-  
valve and square-built, delicately rayed, and elegantly  
mottled with violet triangular marks.

Species 2. (Mus. Cuming.)

PSAMMOBIA PUELLA. *Psam. testâ elongato-transverso, tenui, depressâ, inequilateralî, transversa striatâ, stria in latere postico rugiformibus; nitent-âliâ, auriculo-refu pallidè radiatâ, umbonibus nitent-violaceis; latere antico longiore, rotundato, postico brevi, obtusè angulato.*

THE TENDER PSAMMOBIA. Shell elongately transverse, thin, depressed, inequilateral, transversely striated, striae on the posterior side wrinkle-like; shining white, faintly rayed with orange-red, umbones shining violet; anterior side the longer, rounded, posterior short, obtusely angled.

DESHAYES, Pro. Zool. Soc. 1854, p. 520.  
*Hab.* Australia.

Bilish-white, shining, faintly rayed with orange-red,  
neatly sculptured on each side with raised striae.

Species 3. (Mus. Cuming.)

PSAMMOBIA MODESTA. *Psam. testâ elongato-transverso, convexiusculâ, subequilateralî, medio substriatâ; auriculâ, pallidè rufescente sparsim radiatâ; latere antico rotundato, postico subangulato.*

THE MODEST PSAMMOBIA. Shell elongately transverse, rather convex, nearly equilateral, faintly striated in the middle; whitish, sparsely rayed with faint red, anterior side rounded, posterior slightly angulated.

DESHAYES, Pro. Zool. Soc. 1854, p. 319.  
*Hab.* Australia.

More convex and less angularly formed than the preceding species.

## Species 4. (Mus. Cuning.)

PSAMMOBIA MAXIMA. *Psam. testâ orato-transversâ, compressiâ solidâ, valde inequilaterali, rudè concentricè striatâ et striatâ, liris posticè subannulatis; intercentro-alâ, radiis carneo-roseis lineisque angularibus notatâ; lateribus rotundatis, postice subobliquè truncata.*

THE VERY LARGE PSAMMOBIA. Shell ovately transverse, rather compressed, solid, very inequilateral, rudely concentrically ridged and striated, ridges slightly waved on the posterior side; yellowish-white, marked with faint flesh-rose rays and angular lines, sides rounded, the posterior somewhat obliquely truncated.

DESHAYES, Pro. Zool. Soc. 1854, p. 317.

*Hab.* Panama.

A very solid roughly-formed shell, of brownish chalk substance, mottled throughout with faint-red triangular marks.

## Species 5. (Mus. Cuning.)

PSAMMOBIA ANOMALA. *Psam. testâ elongato-transversâ, tenui, fragili, tenuidulâ, subequilaterali, transversim obliquè minutè striatâ, stris ad latera erantibus; tuberculo-erantè, prope umbonem aurantio fuscâ; laterantico paulo attenuato, postice subobliquè angulatâ.*

THE ANOMALOUS PSAMMOBIA. Shell elongately transverse, thin, fragile, rather small, nearly equilateral, transversely obliquely minutely striated, striae disappearing at the sides; yellowish flesh-colour, tinged with orange near the umbo; anterior side a little attenuated, posterior rather broadly angled.

DESHAYES, Pro. Zool. Soc. 1854, p. 320.

*Hab.* Brisbane Water, east coast of New Holland; Strauge.

A delicate orange-tinted shell, having the posterior angle rather concavely impressed.

## Species 6. (Mus. Cuning.)

PSAMMOBIA TELLINELLA. *Psam. testâ elongato-transversâ, subequilateralî, lævigatâ; sorbitè carneo-âllâ, emittentè et interruptè radiatâ, umbonibus circitè rotâ radiatâ.*

THE LITTLE TELLEN PSAMMOBIA. Shell elongately transverse, nearly equilateral, smooth; dull flesh-white, tinged and interruptedly rayed with red, umbones two-rayed with deep scarlet.

LAMARCK, Anim. sans vert. vol. vi. p. 177.

*Psammobis fluvialis*, Turton.

*Hab.* Britain.

A pretty orange-tinted simply convex shell, with two small bright pink rays darting from the umbos.

## Species 7. (Mus. Cuning.)

PSAMMOBIA LATA. *Psam. testâ orato-transversâ, latâ, depressâ, solidâ, inequilateralî, inequialitè transversim striatâ, purpurascente, epidermide tuberculo-aurantèâ notatâ; lateribus subtruncato-angulatâ.*

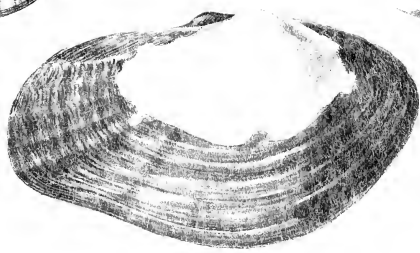
THE BROAD PSAMMOBIA. Shell ovately transverse, broad depressed, solid, inequilateral, unequally transversely striated, purplish, covered with a yellowish-olive epidermis; sides somewhat truncately rounded.

DESHAYES, Pro. Zool. Soc. 1854, p. 318.

*Hab.* St. Elena, West Columbia; Cuning.

A broad square shell, almost entirely covered in a skin-like yellowish-olive epidermis.





Wm. H. Dall

Vincent Froeb, Imp.



solid, nearly equilateral, whitish, many-rayed with pale violet, sides gently slanting at the upper part, then rounded, posterior side the shorter, scarcely truncated.

GRAY. Dieffenbach's Travels in New Zealand; Fauna, p. 253.

Hab. New Zealand; Strange.

A rather solid shell, with the sides gently sloping from the umbos, and nearly equally rounded. The painting appears in faint violet rays throughout upon a dull stone-white ground.

Species 13. (Mus. Cuning.)

PSAMMOBIA TRISTIS. *Pana. testâ ovato-triangulari, depressiusculâ, solidâ, subequilaterali, transverse inaequaliter subtriatâ, albogriseâ, obscure violacea radiatâ, intus pallidâ violaceâ, laterâ antica paulo longiore, lateribus superiorâ declivibus, antica latè obtusa, postica latè obtusè truncatâ, subangulata.*

THE SAME PSAMMOBIA. Shell ovately transverse, rather depressed, rather solid, nearly equilateral, transversely unequally finely striated, whitish-grey, obscurely violet-rayed, pale violet within, anterior side a little the longer, sides slanting at the upper part, anterior broadly obtuse, posterior broadly obtusely truncated, slightly angled.

DISHAYES, Pr. Zool. Soc. 1854, p. 318.

Hab. Anjovyna

Painted with very obscure violet rays, with a thin deceduous epidermis more or less remaining along the margin of the shell.

Species 14. (Mus. Cuning.)

PSAMMOBIA TIGATA. *Pana. testâ ovato-triangulari, triangulari, inaequaliter, reticulatibus sericeo attenuatâ, antemâ antica rotundatâ et hexagonâ, posticâ obliquè truncatâ, epidermide fusco-virescente, marginibus supero-rectis, ad umbones deciduâ vel rosâ, intus intus castaneâ albâ.*

THE CLOTHED PSAMMOBIA. Shell ovately transverse, rather swollen, inequilateral, gradually attenuated at the extremities, but rounded and shorter anteriorly, and obliquely truncated posteriorly, clothed with a brownish-green epidermis passing over the margin, deciduous or croded at the umbos, white within and without white.

DISHAYES, Pr. Zool. Soc. 1854, p. 318.

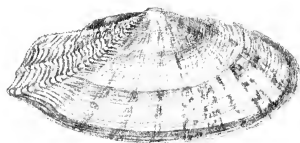
Hab. Port Essington, Australia, Jukes. Bay of Manila, Philippines; Cuning.

Of quite a different typical character from any of the preceding species, the shell being of a rough opaque texture, attenuated towards the extremities, covered with a thick fibrous epidermis.

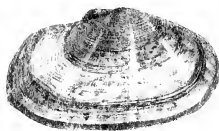




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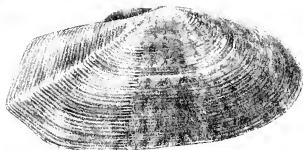
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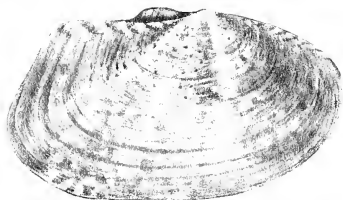
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*stris ad totum posticram subobliquis, elevatis: lobi-  
pauca, ovata, purpureo-rosea pallide radiata, lobis  
antra rotundato, postico oblique angulato et truncato.*

THE AMETHYST PSAMMOBIA. Shell elongately transverse,  
compressed, nearly equilateral, densely finely striated,  
strong on the posterior side rather oblique and raised;  
livid-purple, faintly rayed with purple-rose, inferior  
side rounded, posterior obliquely angled and truncat-  
ed.

*Hab.* Ceylon; E. L. Layard.

Of a delicate livid-purple colour, rayed at rather distant  
intervals with faint purple-rose.

Species 26. (Mus. Cuming.)

PSAMMOBIA TRIPARTITA. *Psam. testis oblonga transversa,  
ellipsoida, compressa, equilaterali, unicolor, minutis  
albis confluentibus irregulariter sparsis unita seu ob-  
scure alba costata, transversim striata, stris acti-  
vibus et planis, in medio bipartitis et supra numerosis,  
orbis, in latere subito levissimis, bifurcatis, acris,  
latere antea semi-elliptico, obtuso, latere postico par-  
te latiore, oblique truncato, costula acutiuscula infra  
truncato, angul. obtusa absente ab umbone deorsu-  
rente.*

THE TRIPARTITE PSAMMOBIA. Shell elongately trans-  
verse, ellipsoid, compressed, equilateral, violet, marked  
with irregularly sprinkled confluent minute white  
spots or obscurely white-rayed, transversely striated,  
strong anteriorly broad and flat, bipartite and twice  
as numerous in the middle, on the posterior side

suddenly lamellose, imbricated, with sharp anterior  
side semi-elliptic, obtuse, posterior side rather broader,  
obliquely truncated, terminated at the lower part by  
a rather sharp angle, an ob-soleto obtuse angle ter-  
minating from the umbro.

DESHAYES, *Proc. Zool. Soc.* 1853, p. 291.

*Hab.* San Nicolas, Island of Zebu, Philippines. Cuming

This interesting species may be readily recognized, by  
its surface being curiously separated into three distinct  
patterns of sculpture.

Species 27. (Mus. Cuming.)

PSAMMOBIA NIVOSA. *Psam. testis ovato-teste, ovato-  
oblonga, compressiuscula, utroque latere biparte, angulo-  
lateralis, transversim substriata compressiuscula,  
nerviis sparsis nigris irregulari, latere antea latiore,  
latere suboblongo, postico latiore, septem cost. unicolori,  
horizontali, latere obtuse truncato.*

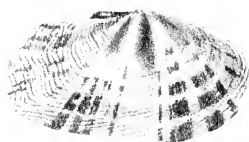
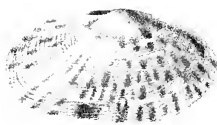
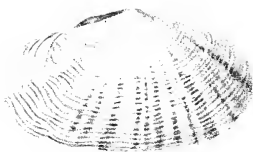
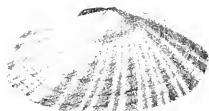
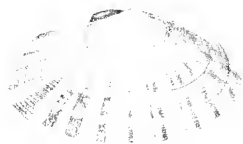
THE SNOWY PSAMMOBIA. Shell ovately transverse, rather  
solid, somewhat compressed, gaping on both sides—  
im-pullateral, transversely finely striated, rose-pur-  
ple, bedewed with scattered snowy spots, anterior  
side shorter, broadly rounded, posterior side broader  
straight at the upper part, not sloping, horizontal  
broadly obtusely truncated.

DESHAYES, *Proc. Zool. Soc.* 1853, p. 317

*Hab.* Dinagucte, Island of Negros, Philippines. Cuming

Closely allied to *P. acobius*, but uniformly distinguished  
by the various characters detailed in the foregoing de-  
scription.





# PSAMMOBIA.

PLATE IV.

## Species 22. (Mus. Cuming.)

**PSAMMOBIA AFFINIS.** *Psam. testis ovato-transversal, angustius transversa, rubre striata, stris in medio submarginatis, anticis distinctis, postice subplicatis; lateribus subcylindricis, crassis, cernis angustis, profundius rotundatis, lateribus rotundatis, postice nervis truncatis.*

**THE ALIEN PSAMMOBIA.** Shell ovately transverse, equilateral, transversely finely striated, striae almost obsolete in the middle, distinct anteriorly, slightly plicated posteriorly; yellowish-white, promiscuously rayed towards the margins with flesh-rose, sides round, the posterior but little truncated.

*Hab.* New Zealand and the Philippine Islands.

A species intermediate in its character between *A. grata* and *resplenda*.

## Species 23. (Mus. Cuming.)

**PSAMMOBIA PLEURELLA.** *Psam. testis subanguste transversa, crassa, inequilaterali, oblique antice elevatissima, stris ad marginem nec postice abrupte truncatis, costulis perpendiculari, serratis finit, albocinctis, lateribus antice rotundatis, postice decliviter rotundatis, costis subplicatis, ab umbone angustissime marginatis.*

**THE MOUNTAIN PSAMMOBIA.** Shell rather narrowly transverse, compressed, inequilateral, obliquely neatly elevated, striated, striae abruptly terminated at the edge, margin posteriorly; blue-purple, tinged with rust, margin of wide white, anterior side rounded, posteriorly slopingly truncated, impressed superficially with a nearly smooth area from the umbil.

*Hab.* New Zealand, sans vert. vol. vi. p. 177.

*Hab.* Bataan Island, Philippines. Cuming.

The sculpture of this species consists of numerous oblique raised striae, which terminate suddenly along the edge of a superficially impressed area sloping posteriorly from the umbil.

## Species 24. (Mus. Cuming.)

**PSAMMOBIA COMPLEXA.** *Psam. testis elongato-transversal, angustior, crassa, transversa, angulata et profundius rotundata, stris postice plicatis; lateribus ovato, profundius rotundatis, lateribus antice*

*rotundatis, costis decliviter truncatis, nervis angustis, ab umbone finitatis.*

**THE SLANT PSAMMOBIA.** Shell elongately transverse, equilateral, compressed, rather than smooth, promiscuously groove-striated, striae posteriorly plicated, livid-blue, rayed with purple violet, anterior side rounded, posteriorly slopingly truncated, form a concave area from the umbil.

*DISHAYES, Pro. Zool. Soc. 1854, p. 321.*

*Hab.* Catabanga, Island of Samar, Philippines. Cuming.

The striae are almost obsolete in the centre of the valves, the surface of that part being smooth, crossed by interrupted linear grooves.

## Species 25. (Mus. Cuming.)

**PSAMMOBIA INTERMEDIA.** *Psam. testis ovato-transversal, concavissima, subita, inequilaterali, albida, crassa, rotundata, inequilaterali, lateribus rotundatis, lateribus angustis, nervis rubris, submarginatis, profundius rotundatis, postice crassioribus, rubre irregularibus, lateribus rotundatis, postice sub truncatis, impressis, ab umbone rotundata.*

**THE INTERMEDIATE PSAMMOBIA.** Shell ovately transverse, rather convex, solid, equilateral, whitish, finely rayed with rose, partially covered with a yellow ochreous, transversely wrinkled, wrinkles made into a solid, promiscuously waved, posteriorly thicker, very irregular, anterior side rounded, posterior side attenuated and compressed, slopingly truncated.

*DISHAYES, Pro. Zool. Soc. 1854, p. 319.*

*Hab.* Faro, coast of Porting. Dr. Andrew.

A fine species, chiefly distinguished by the regular and irregular wavy development of its wrinkled surface.

## Species 26. (Fig. a, b. Mus. Cuming.)

**PSAMMOBIA ORNATA.** *Psam. testis subanguste transversa, crassioribus, subangulata, lateribus rotundatis, angustioribus, costulis angustis, perpendicularibus, serratis finit, albocinctis, lateribus antice rotundatis, postice decliviter rotundatis, costis subplicatis, ab umbone angustissime marginatis.*

**THE ORNATE PSAMMOBIA.** Shell ovately transverse, subventrosus, nearly equilateral, yellow striated,

promiscuously blotched and obscurely rayed with purple-chestnut and reddish-violet, obliquely striately wrinkled, wrinkles posteriorly irregularly wave-plicated, anterior side rounded, posterior truncately rounded, convexly impressed from the umbo.

DESHAYES, *Pro. Zool. Soc.* 1854, p. 323.

*Hab.* Island of Ticao, Philippines; Cuming

The most obvious characteristic of this species is its peculiarity of painting, the surface being more or less ornamented with promiscuous blotches of purple-chestnut and reddish-violet inclining towards the margins in rays

Species 27. (Mus. Cuming.)

USAMMOBIA MAKUOREA. *Psam. testâ ovato-triangulari, compressiusculâ, solidâ, subquadrilaterâ, obliquè striato-rugosâ, rugis posticè flexuoso-plicatis, lutescenti-âlbâ, ad umbones lutescenti-âlbâ, purpureo-ca-*

*lineâ intèruptè radiatâ, latere antico rotundato, postico, compressè truncato, ab umbone obtusè superficialitèr angulato.*

103 MARBLED USAMMOBIA. Shell ovately transverse, rather compressed, rather solid, nearly equilateral, transversely obliquely striately wrinkled, wrinkle-flexuously plicated, yellowish-white, yellowish-violet at the umbones, interruptedly rayed with purple-chestnut, anterior side rounded, posterior compressly truncated, obtusely superficially angled from the umbo.

DESHAYES, *Pro. Zool. Soc.* 1854, p. 324

*Hab.* Moluccas and New Holland.

The painting of this species resembles that of the last in colour, but it is differently disposed, whilst the sculptured wrinkles are more obliquely pronounced, though nearly obsolete in the middle





23



29



31



35



37



33



34



32



36



38



# PSAMMOBIA.

PLATE V.

Species 28. (Fig. 25 and 29, Mus. Cuming.)

**PSAMMOBIA BICARINATA.** *Pisana, testâ elongato-transversâ, rugosâ, depressâ, solidâ, angulatâ, angulatâ, alba, carinata, obsolete subultra carinata, transversâ subultra, sulcus coarctatus obliquè plicatus, lobes anterior rotundus, postico obliquè truncato et rostrato, et subone obtruncato.*

**THE TWO-KEELED PSAMMOBIA.** Shell elongately transverse, narrow, depressed, rather solid, equilateral, dark-violet, absolutely darker rippled, transversely grooved, grooves obliquely plicated towards the margin, anterior side rounded, posterior obliquely truncated and beaked, two-keeled from the umbil.

DESHAYES, *Proc. Zool. Soc.* 1854, p. 322.

*Hab.* Zanzibar; T. Horne.

A dark purple shell, sometimes white, stained with rose, as in Fig. 30, sculptured with obliquely sloping folds near the margin, the posterior extremity being beaked, with two-keeled angles running down from the umbil.

Species 29. (Mus. Cuming.)

**PSAMMOBIA ZONATA.** *Pisana, testâ angustè transversâ, compressâ, subultra carinata, tenuissimè striatâ, nitente, albâ, zonis transversis herid-roseis, lobes antica rotundata, postico ab umbone subangulo truncata.*

**THE ZONED PSAMMOBIA.** Shell narrowly transverse, compressed, nearly equilateral, very finely striated, shining, whitish, with transverse livid-rose zones, anterior side rounded, posterior slightly angled from the umbil, and truncate.

*Conchologia zanzib.* Lamarck, *Anim. sans vert.* vol. vi. p. 182.

*Hab.* Tasmania; R. C. Gunn.

A smooth compressed species, very finely striated towards the margin and extremities, painted with delicate livid-rose zones.

Species 31. (Mus. Cuming.)

**PSAMMOBIA TELLINIFORMIS.** *Pisana, testâ angustè transversâ, compressâ, subultra carinata, densè tenuistratâ, nitente, striis ad latera postiora plicato-levatis; albâ, herid-roseis pulchè radiatâ, lobes antica rotundata, postico rotundato-truncato, ab umbone subultra carinata angulata.*

**THE TELLINA-SHAPED PSAMMOBIA.** Shell narrowly transverse, compressed, nearly equilateral, closely finely striated, shining, striae plicately raised on the posterior side; whitish, faintly rayed with livid-lesh anterior side rounded, posterior rotundately truncated, superficially angled from the umbil.

DESHAYES, *MS.*, Mus. Cuming.

*Hab.* ———?

Unusually compressed, with the posterior angular convexity only superficially developed, the surface being faintly rayed with a thin livid-lesh tint.

Species 32. (Mus. Cuming.)

**PSAMMOBIA CANTUENSIS.** *Pisana, testâ orato-transversâ, tenui, pellucidâ, subultra carinata, nitente, vir striatâ, purpurascens-albâ, maculis hieroglyphicis purpurascens-fulcis pictâ, epidermide tenui cornea prope marginem intus, tub-ribus rotundatis, postico truncato.*

**THE CAMP-MAKED PSAMMOBIA.** Shell ovately transverse, thin, pellucid, nearly equilateral, shining, scarcely striated, purplish-white, painted with obscure hieroglyphic purplish spots, covered with a thin horny epidermis near the margins, sides rounded, posterior slightly swollen.

*RARELY*, Species of Shells, p. 59.

*Solen cantuensis*, Chemnitz.

*Hab.* Sorsogon, Island of Luzon, Philippines; Cuming.

A semipellucid smooth shell, covered towards the margin with a thin horny epidermis, not unlike a *Solen* in general aspect.

Species 33. (Mus. Cuming.)

**PSAMMOBIA FERROENSIS.** *Pisana, testâ angustè transversâ, subcompressâ, subultra carinata, striatâ, striis ad latera postiora simplicibus, ad angulum striis radiatâ, decussatis, albâ, zona radiatâ, ad marginem epidermide vestitâ, lobes antica rotundata, postico attenuato-truncato ab umbone angulata.*

**THE FERROE PSAMMOBIA.** Shell narrowly transverse, rather compressed, nearly equilateral, striated, striae subplacated on the posterior side decussated on the angle with radiating striae; whitish, rayed with pink, clothed with an epidermis at the margins, anterior

side rounded, posterior attenuately truncated, angled from the umbo.

*Tellina Ferronensis*, Chemnitz, Conch. Cat. vol. vi. p. 99. pl. 10. f. 91.

*Tellina inaequalis*, Pennant.

*Tellina radiata*, Da Costa.

*Tellina trifasciata*, Donovan.

*Tellina truncata*, Spengler.

*Psammobia Ferronensis*, Lamarek.

*Hab.* Ferroe and other Northern Isles, British Isles, and throughout the European Seas.

There is not much variation in this widely distributed species, the rose rays more or less predominating on a stone-white ground.

Fig. 34. (Mus. De Barch.)

*PSAMMOBIA RUBICUNDA.* *Psam. testis acuto-transversata, gibbosa, utroque latere paululum hians, subquadrilatera, oblique striata, stria posteriori plicatis et abrupte interruptis, deinde superne continuis, rivuli supponebantur, alba, floccata, lateribus rotundatis superficialiter ut valvula impressa.*

THE BRIGHT RED PSAMMOBIA. Shell ovately transverse, gibbous, a little gaping at both ends, nearly equilateral, obliquely striated, striae posteriorly plicated and abruptly interrupted, then continuous towards the upper part, bright scarlet-rose flaked with white, sides rounded, posterior superficially impressed from the umbo.

DESHAYES, *Pro. Zool. Soc.* 1851, p. 324.

*Hab.* Island of Ticao, Philippines. Cuming.

This beautifully painted species is remarkable for the brightness and delicacy of its colour, the entire surface being a deep transparent blood-rose, flaked here and there with white. The specimen here figured is from the choice collection of Mrs. De Barch. Mr. Cuming also possesses a fine and equally brilliantly painted specimen.

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

*PSAMMOBIA ELEGANS.* *Psam. testis elongato-transversa, angusta, compressa, angulolatera, transversa rugosoplicata, plicis subnullatis, latera utroque rotundata, postice attenuato-truncata, et ab anteriori hians, utroque latere alba, fuscopurpurea promiscue radiata.*

THE ELEGANT PSAMMOBIA. Shell elongately transverse, narrow, compressed, equilateral, transversely rugosely plicated, slightly waaved, anterior side rounded, posterior attenuately beaked, and two-keeled from the umbo, brownish-white, promiscuously rayed with brown-purple.

DESHAYES, *Pro. Zool. Soc.* 1851, p. 322.

*Hab.* Philippine Islands.

The posterior side of this species is developed in a manner very similar to that of the *P. boerhaavei*.

Species 36. (Mus. Cuming.)

*PSAMMOBIA ANGUSTA.* *Psam. testis elongato-transversa, depressa, tenui, semiplicata, equilatera, dense transversa striata, striae anticae 1-2-angulis, in antica foveola, striae posterioris in valva dextra subobsoletis, in valva sinistra continuis, alba, capite roseo et pallidissime maculata et radiata, utroque latere antice rotundata postice oblique truncata, ab utroque latere antice angulato-impressa.*

THE DELICATE PSAMMOBIA. Shell elongately transverse, depressed, thin, semiplicated, equilateral, densely transversely striated, striae broad and anteriorly forked in the middle, posterior striae nearly obsolete in the right valve, in the left valve continuous, white, faintly rayed and spotted with reddish-violet, shining, anterior side rounded, posterior obliquely truncated faintly angularly impressed from the umbo.

DESHAYES, *Pro. Zool. Soc.* 1851, p. 323.

*Hab.* ———

An extremely delicate shining species, with a characteristic difference, as above noted, in the sculpture of the two valves.





37a



37b



37c



38



39



39a



40



41



41a



42

# PSAMMOBIA.

PLATE VI.

Species 37. (Fig. *a, b*, Mus. Cuming.)

**PSAMMOBIA TENNIS.** *Psara, testâ elongato-transversa, con-  
vexiusculâ, tenui, hyalina, inequilaterali, albâ, in-  
terlineâ roseâ radiatâ, obliquè tenuissimè striatâ, striis  
ad latus posteriorem abruptè breviter. Intere autem sub-  
alternatâ, postice breviorè, latè truncatâ.*

**THE THIN PSAMMOBIA.** Shell elongately transverse,  
rather convex, thin, hyaline, inequilateral, whitish,  
sometimes rayed with rose, obliquely very finely striated,  
striae abruptly terminated on the posterior side,  
anterior side slightly attenuated, posterior shorter,  
broadly truncated.

DESHAYES, Pro. Zool. Soc. 1854, p. 320.

*Hab.* Philippine Islands; Cuming.

The posterior side of this more angularly sloped in some specimens than in others.

Species 38. (Mus. Cuming.)

**PSAMMOBIA COSTULATA.** *Psara, testâ elongato-transversa,  
tenuissimâ, inequilateralâ, convexâ, sulcato-striatâ,  
albâ, colore roseo pauciradiatâ, Intere autem alter-  
nato-costulata, postice breviorè, rotundatâ, radiatâ  
tenui-costulata.*

**THE FINELY RIBBED PSAMMOBIA.** Shell elongately transverse,  
rather thin, inequilateral, concentrically groove-  
striated, whitish, marked with a few deep rose rays,  
anterior side attenuately rounded, posterior shorter,  
rounded radiately finely ribbed.

TURTON, *Dhrya Brit.* p. 87, pl. 6 f. 8.

*Psarasinus divaric.* Philippi.

*Hab.* Porto Santo, Madaira, Sicily, British Isles.

A small elongately transverse species, sculptured in a characteristic manner on the posterior side with fine radiating ribs.

Species 39. (Mus. Cuming.)

**PSAMMOBIA ABRUPTA.** *Psara, testâ elongato-transversa,  
tenui, pellucidâ, aequilateralâ, compressâ, albâ,  
transversim costulatâ, costis altissimâ, subaliquâ, posticè  
abruptè interruptis, Intere postice compresso, costis  
latis radiatibus sculpto, supericè recta, ad extremitate-  
m rotundato-truncata.*

**THE ABRUPT PSAMMOBIA.** Shell elongately transverse,  
thin, pellucid, equilateral, compressed, whitish,  
transversely ribbed, ribs dense, rather oblique, posteri-  
orly abruptly interrupted, posterior side compressed,  
sculptured with broad radiating ribs, straight at the  
upper part, to undately truncated at the extremity.

DESHAYES, Pro. Zool. Soc. 1854, p. 321.

*Hab.* Philippine Islands; Cuming.

The ribbed sculpture of this delicate little transparent shell is very conspicuous.

Species 40. (Mus. Cuming.)

**PSAMMOBIA EBURNEA.** *Psara, testâ oblongo-transversa  
râble compressâ, lorigatâ, nitente, albâ, inequilateral-  
i, Intere autem latè rotundatâ, postice breviusculâ,  
ad marginem superiorem angustè angulato-compresso, ad  
extremitatem rotundatâ.*

**THE IVORY PSAMMOBIA.** Shell oblong-transverse, very  
compressed, smooth, shining, white, inequilateral,  
anterior side broadly rounded, posterior rather short,  
narrowly angularly impressed along the upper margin,  
rounded at the extremity.

*Hab.* Malacca.

A thin compressed smooth ivory-like shell, with a simple narrowly impressed slope along the upper posterior edge.

Species 41. (Mus. Cuming.)

**PSAMMOBIA CANDIDULA.** *Psara, testâ oblongo-transversa  
rotundâ, crassiusculâ, subquadrilaterâ, breviquâ, con-  
gularitè incrassatâ laterè interruptâ, parvè costâ, albâ, later-  
ibus rotundatâ, ob-obtusâ declivissimâ, Intere postice  
paulatim breviorè, obtusè angulatâ.*

**THE WHITE PSAMMOBIA.** Shell oblong-transverse, rather  
swollen, somewhat thick, nearly equilateral, smooth,  
irregularly interrupted with lines of growth, yellow-  
ish-white, sides rounded, slanting from theumbo  
posterior side rather the shorter obtusely angled.

DESHAYES, Pro. Zool. Soc. 1854, p. 319.

*Hab.* Philippine Islands; Cuming.

Of a solid dead-white aspect, smooth throughout, with only the faintest indication of an angle on the posterior side.

## Species 42. (Mus. Cuming.)

PSAMMOBIA MALACANA. *Psam. testâ ovato-transversa, antice, postè, lateri, equilaterali, alba-sabâ, nitidè oblique sulcato-striatâ striis posticè abruptè interruptis. latere antica rotundata, postico latiore, subangulato-transverso et concentricè striata.*

THE MALACAN PSAMMOBIA. Shell ovately transverse, somewhat compressed, thin, equilateral, shining white, neatly obliquely groove-striated, striae abruptly interrupted on the posterior side, anterior side rounded, posterior broader, slightly angularly truncated and concentrically striated.

*Hab.* Malacca.

A delicate shining white shell, neatly sculptured with oblique grooved striae, which suddenly terminate on the posterior side.

## Species 43. (Mus. Cuming.)

PSAMMOBIA MENKEANA. *Psam. testâ elongato-transversa, rugosa, inequaliterâ, lateri plicatis subirregulâribus concentricè sculptâ, floccoso-albâ, pallidissime cinnamomeâ, latere antica late rotundata, postice oblique truncata nitidè angulata.*

MENKE'S PSAMMOBIA. Shell elongately transverse, narrow, equilateral, concentrically sculptured with irregular plicated ridges, yellowish-white, very faintly violet-tinged, interior side broadly rounded, posterior obtusely truncated, very obtusely angled.

*Hab.* East coast of Australia.

A narrow species, sculptured concentrically with somewhat irregular plicated ridges.

## Species 44. Mus. Cuming.)

PSAMMOBIA ANGUSTA. *Psam. testâ elongato-transversa*

*subequilaterâ, tenui, fuscâ, transverse inaequaliter plicato-striatâ, striis posticè angustè elevatis, floccoso-albâ, lateribus rotundatis, postico obscure striâ angulâto.*

THE NARROW PSAMMOBIA. Shell elongately transverse, nearly equilateral, thin, fragile, transversely somewhat plicately striated, striae posteriorly narrowly ridged, yellowish-white, sides rounded, posterior obtusely obtusely angled.

*DESHAYES, Pro. Zool. Soc. 1854, p. 320.*

*Hab.* Senegal.

The striae in this as in the preceding species incline to be obliquely plicated, but are developed on the posterior side in narrow ridges.

## Species 45. (Mus. Cuming.)

PSAMMOBIA LAYARDI. *Psam. testâ elongato-transversa depressâ, equi laterâ, oblique nitidè sulcato-striatâ striis ad latera postice abruptè terminatis, latere postico striis concentricis et rotundatis furcatis densato, subochroleâ angulâto, rotundato-truncata; floccositate, alba et rubro-fusca auroraatâ.*

LAYARD'S PSAMMOBIA. Shell elongately transverse, depressed, equilateral, obliquely minutely groove-striated, striae abruptly terminated on the posterior side, posterior side strongly decussated with concentric and radiating striae, rather broadly obtusely angled, rotundately truncated; yellowish, mottled with white and violet-brown.

*DESHAYES, Pro. Zool. Soc. 1854, p. 323.*

*Hab.* Philippine Islands; Cuming.

Elegantly sculptured and mottled throughout with violet-brown and white.





42



47



48



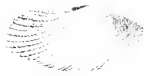
49



50a



50b



51



52



53



54



# PSAMMOBIA.

PLATE VII.

Species 46. (Mus. Cuming.)

**PSAMMOBIA PITCHERIANA.** *Psam. testâ elongato-transversâ, compressâ, levî, subâ-equilaterâ, cuticulâ arenâ, areolâ et areolâ, cutis compressâ, areolata, obliquè transversè ribbâ, costis simplicibus. Antennæ, summae aëreâ et subâ-posteriori, scabâ et rugulâ, later. post. et post. media, costâ et radiâ, subâ-posteriori, ad marginem denticulatâ.*

**FIG. VEG. BEAUTIFUL PSAMMOBIA.** Shell elongately or obverse, compress'd, thin, nearly equilateral, white-rose, absolutely white-rayed, interior rose-purple, obliquely transversely ribbed, ribs simple, depressed, rather sharp at the upper part, suddenly interrupted at the posterior side, posterior side a little gaping, with small scabrous radiating ribs, denticulated at the edge.

DESHAYES, *Proc. Zool. Soc.* 1854, p. 325.

*Hab.* ———?

This beautiful little species is remarkable for its strongly marked and strongly contrasted sculpture, the posterior radiating ribs being obtusely prickly-sided.

Species 47. (Mus. Cuming.)

**PSAMMOBIA PALMATA.** *Psam. testâ oblongo-transversâ, levî, tenui, fragili, inequilaterâ, obliquè costatâ, costâ et radiâ, subâ-posteriori, et subâ-posteriori, scabâ et rugulâ, later. post. et post. media, costâ et radiâ, subâ-posteriori, ad marginem denticulatâ.*

**FIG. LEFT-L. OR PSAMMOBIA.** Shell oblong-transverse, arched, thin, fragile, inequilateral, obliquely finely ribbed, ribs anteriorly fine, slightly waved, posteriorly continuous and radiating, yellowish-white, sprinkled with a few faint red spots, anterior side attenuately rounded, posterior obliquely emarginated and a little gaping.

DESHAYES, *Proc. Zool. Soc.* 1854, p. 325.

*Hab.* Spida y. New Holland.

The obliquely sloping ribs in this species are not interrupted on the posterior side, but become gradually open and rayed.

Species 48. (Mus. Cuming.)

**PSAMMOBIA DESPAXI.** *Psam. testâ arcto-transversâ, levî, inequilaterâ, compressâ, arenâ, roseo-nigraâ, obliquè transversè ribbâ, costis et radiâ, subâ-posteriori, scabâ et rugulâ, later. post. et post. media, costâ et radiâ, subâ-posteriori, ad marginem denticulatâ.*

**FIG. UPRIG. PSAMMOBIA.** Shell ovately transverse, thin, inequilateral, yellowish-white, rose-mottled, obliquely ridge-striated, striae interrupted at the posterior side, anterior side rather broad, attenuately rounded, posterior short, somewhat beaked, a little gaping, conspicuously radiately ribbed.

DESHAYES, *Proc. Zool. Soc.* 1854, p. 325.

*Hab.* Philippine Islands; Cuming.

Chiefly distinguished by the posterior side being somewhat beaked and conspicuously cross-ribbed, in contrast with the obliquely sloping striae.

Species 49. (Mus. Cuming.)

**PSAMMOBIA BENTLEYATA.** *Psam. testâ elongato-transversâ, arenâ, tenui, subâ-equilaterâ, albâ, ad marginem roseâ fuscâ, obliquè transversè ribbâ, costis et radiâ, subâ-posteriori, scabâ et rugulâ, later. post. et post. media, costâ et radiâ, subâ-posteriori, ad marginem denticulatâ.*

**FIG. TOOTHED PSAMMOBIA.** Shell elongately transverse, arch'd, thin, nearly equilateral, whitish, tinged with rose at the umbones, obliquely wave-ridged, posteriorly radiately ribbed, ribs scabrous, posterior side obliquely truncate, gaping, denticulated at the edge.

ADAMS and REEVE, *Moll. Voy. Sumatra*, p. 89, pl. 24, f. 2.

*Hab.* China Sea.

The ribs on the posterior side are prickly-sided, radiating openly, so as to show the interstices deeply grooved.

Species 50. (Fig. a, l, Mus. Cuming.)

**PSAMMOBIA SQUAMOSA.** *Psam. testâ oblongo-transversâ, arenâ, tenui, inequilaterâ, obliquè costatâ, costis et radiâ, subâ-posteriori, scabâ et rugulâ, later. post. et post. media, costâ et radiâ, subâ-posteriori, ad marginem denticulatâ.*

**THE SCALED PSAMMOBIA.** Shell oblong-transverse, arched, thin, nearly equilateral, obliquely wave-ridged, posteriorly radiately ribbed, ribs prominent, sealed, rather distant, blue-violet, sometimes whitish, mottled with rose, anterior side rounded, posterior obliquely truncated and gaping.

LAMARCK, *Anim. sans vert.* vol. vi, p. 176.

*Hab.* Island of Masbate, Philippines: Cuming.

A delicate and beautifully sculptured species, chiefly distinguished by the prominent openly spread development of the posterior ribs and gaping extremity.

Species 51. (Mus. Cuming.)

**PSAMMOBIA BUGGLOSA.** *Psam. testa elongato-transversa, subarcuata, tenui, inequilaterali, obliquè rugulose-licata, posticè radiatè costata, costis scabrosis, latero-convexa, latere antero attenuato-rotundato, postico attenuato-rotundato et obliquè truncato.*

**THE WRINKLED PSAMMOBIA.** Shell elongately transverse, slightly arched, thin, inequilateral, obliquely wrinkle-ridged, posteriorly radiately ribbed, ribs scabrous, yellowish-white, anterior side attenuately rounded, posterior attenuately beaked and obliquely truncated.

ADAMS and REEVE, *Moll. Voy. Samarang*, p. 51, pl. 24, f. 4.

*Hab.* China Sea.

The posterior side of this species is more attenuately beaked than in other examples of the genus.

(Species 52. Mus. Cuming.)

**PSAMMOBIA PENNATA.** *Psam. testâ ovato-transversa, inequilaterali, striisque hinc, albo-griseâ, alba et rubescente irregulariter minute punctatâ, obliquè tenuissimè striatâ, stria ad latera posticâ subitè interruptis, latere postico depressissimo, eis tenuissimè bipartito, divaricatis convergendo-convexato.*

**THE WINGED PSAMMOBIA.** Shell ovately transverse, inequilateral, gaping at each side, whitish-grey, irregularly minutely spotted with white and pale red, obliquely very finely striated, stria abruptly inter-

rupted at the posterior side, posterior side rather depressed, scarcely truncated, bipartite, divaricately wrinkle-ribbed.

DESHAYES, *Pro. Zool. Soc.* 1854, p. 325.

*Hab.* Philippine Islands: Cuming.

The posterior side of this species is less distinguished in form from the anterior than usual, and both sides gap at the extremity.

Species 53. (Mus. Cuming.)

**PSAMMOBIA PETALINA.** *Psam. testâ oblongo-transversa, tenuissimâ, pellucidâ, valdè inequilateralè pallidè rosaceate, violaceo spinigerâtiâ, vitæate, latere antero elongato, postico brevè, ambobus rotundatis.*

**THE LITTLE FLAT PSAMMOBIA.** Shell oblong-transverse, very thin, transparent, very inequilateral, pale-violet, five-rayed with darker violet, shining, anterior side elongated, posterior side short, both rounded.

DESHAYES, *Pro. Zool. Soc.* 1854, p. 326.

*Hab.* China Sea.

An extremely delicate, transparent, violet-rayed shell, without any indication of the peculiar sloping sculpture which is chiefly characteristic of this genus.

Species 54. (Mus. Cuming.)

**PSAMMOBIA SUPERBA.** *Psam. testâ oblongo-transversa, tenui, subcompressâ, subequilateralè obliquè licata-striatâ, stria ad latera posticâ subitè interruptis, purpureo-convexato, albo tenuissimè striatâ, latere antero rotundato, postico latere levigato, subangulato-truncato.*

**THE BUSHING PSAMMOBIA.** Shell oblong-transverse, thin, rather compressed, nearly equilateral, obliquely ridge-striated, stria suddenly interrupted on the posterior side, purple-violet, finely rayed with white, anterior side rounded, posterior broader, smooth, somewhat angularly truncated.

*Hab.* Malacca

A thin, purple-violet shell, delicately rayed with white conspicuously sculptured with obliquely sloping ridges.





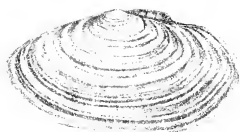
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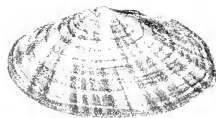
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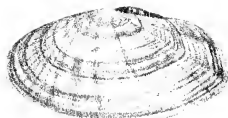
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58



59



59 b



60

# PSAMMOBIA.

PLATE VIII.

Species 55. (Mus. Hanley.)

**PSAMMOBIA CASTA.** *Psam. testâ oblongo-ovata, planoconvexâ, ped. ciliatâ, pallide roseâ, posticâ flexuoso-angulatâ, sulcis linearibus tenuissimis obliquis sculptâ, ad angulum posteriorem interruptis.*

**THE CASTE PSAMMOBIA.** Shell oblong-ovate, flatly convex, transparent white, faintly rose-tinted, posteriorly flexuously angled, obliquely sculptured with very fine minute linear grooves which are interrupted at the posterior angle.

*Hab.* Guatemala.

A very delicate semitransparent shell, sculptured obliquely with very fine linear grooves, which terminate some little distance before reaching the posterior flexuosity.

Species 56. (Mus. Cuming.)

**PSAMMOBIA PARVULA.** *Psam. testâ oblongâ, planiusculâ, posticâ impresso-flexuâ, tenuissimè deussatâ striatâ, nitidâ, alidâ, cæcis umbonæ cernuâ tinctâ.*

**THE SMALL PSAMMOBIA.** Shell oblong, rather flat, posteriorly impresso-flexuous, finely deussately striated, shining-white, flesh-tinted towards the umbo.

*Hab.* ——— ?

Of very simple form, but distinct from any hitherto described species.

Species 57. (Mus. Cuming.)

**PSAMMOBIA VAGINIFORMIS.** *Psam. testâ oblongo-ovata, convexoconvexâ, equilaterali, lateribus rotundatis, tenuissimè deussatè striatâ, viridè alidâ, cæcis umbonæ roseâ, epidermidè struicâ ad marginem alidâ.*

**THE SHEATH-LIKE PSAMMOBIA.** Shell oblong-ovate, rather convex, equilateral, sides rounded, very finely deussately striated; dull white, pink towards the umbo, covered at the margin with a straw-coloured epidermis.

*Hab.* ——— ?

Equilateral, with the sides uniformly rounded, pink-tinted about the umbo, with a pale straw-coloured epidermis at the margin.

Species 58. (Mus. Cuming.)

**PSAMMOBIA LINEOLATA.** *Psam. testâ oblongâ, ad lateres subconvexâ, planâ, posticâ subangulatâ, flexuosâ; carne roseâ, sulcis apico-albis concentricis, fasciatâ.*

**THE LINEOLATED PSAMMOBIA.** Shell oblong, somewhat acuminate at the sides, flat, posteriorly, slightly angularly flexuous; flesh-pink, banded with irregular, concentric, opake white lines.

*GRAY, MS.* Mus. Brit.

*Hab.* New Zealand.

A rather flatly-compressed shell, of a deep flesh-pink colour, peculiarly marked with whitish concentric band-and lines.

Species 59. (Fig. a, b. Mus. Cuming.)

**PSAMMOBIA CONVEXA.** *Psam. oblongo-ovata, planoconvexâ, crassiusculâ, lateribus subequilatis, larigatâ, nitidâ; carne alidâ, rosæo carne radiatâ et umbonæ var. auratâ.*

**THE CONVEX PSAMMOBIA.** Shell oblong-ovate, flatly convex, rather thick, sides nearly equal, smooth, shining, flesh-white, variously rayed with pink, and very minutely mottled.

*Hab.* ——— ?

Distinguished chiefly by its convex though flattened form.

Fig. 60. (Mus. Cuming.)

**PSAMMOBIA CERULESCENS.** *Psam. testâ subelongato-oblongâ, depressâ, posticè latè superficialiter striatâ subangulatâ, striâ elevatâ obliquis sculptâ, striâ ad angulum posteriorem interruptis; pallidè violaceo-cæruleoconvexâ, umbonibus purpureo lineatis.*

**THE BLUE PSAMMOBIA.** Shell somewhat elongately oblong, depressed, posteriorly broadly superficially flexuous, slightly angled, sculptured with obliquely raised striae, striae interrupted at the posterior angle; pale violet-blue umbones, two-rayed with purple.

*EAMARCK, ANN. SANS VERT. vol. vi. p. 170*

*Psammobium bipartitâ, Philippi*

*Hab.* Ceylon.

Of a delicate violet-blue, with the sculpture suddenly interrupted at the edge of the posterior angle.



## PSAMMOBIA.

	Pl.	Nobis.		Pl.	Nobis.
<i>abrupta</i> , Deshayes . . . . .	VI.	39	<i>maxima</i> , Deshayes . . . . .	I.	4
<i>albus</i> , Reece . . . . .	IV.	22	<i>marioria</i> , Deshayes . . . . .	IV.	27
<i>anethystus</i> , <i>H'and'</i> . . . . .	III.	15	<i>Meukema</i> , Reece . . . . .	VI.	43
<i>angusta</i> , Deshayes . . . . .	VI.	44	<i>modesta</i> , Deshayes . . . . .	I.	3
<i>aperta</i> , Deshayes . . . . .	V.	36	<i>nivosa</i> , Deshayes . . . . .	III.	21
<i>aromata</i> , Deshayes . . . . .	I.	5	<i>occidens</i> ( <i>Solen</i> ), Chennitz . . . . .	II.	11
<i>bicarinata</i> , Deshayes . . . . .	V.	28	<i>oriens</i> , Deshayes . . . . .	I.	1
<i>ceruleus</i> , <i>Lamarck</i> . . . . .	VIII.	60	<i>ornata</i> , Deshayes . . . . .	IV.	26
<i>cyathata</i> , Philippi . . . . .	VIII.	60	<i>palmata</i> , Deshayes . . . . .	VII.	47
<i>emulidula</i> , Deshayes . . . . .	VI.	41	<i>parvula</i> , Reece . . . . .	VIII.	56
<i>emula</i> , <i>Reece</i> . . . . .	VIII.	55	<i>peninata</i> , Deshayes . . . . .	VII.	52
<i>emtracsis</i> ( <i>Solen</i> ), Chennitz . . . . .	V.	32	<i>petalina</i> , Deshayes . . . . .	VII.	53
<i>enripa</i> , Deshayes . . . . .	IV.	24	<i>prestans</i> , Deshayes . . . . .	III.	16
<i>enivosa</i> , <i>Reece</i> . . . . .	VIII.	59	<i>puella</i> , Deshayes . . . . .	I.	2
<i>erugata</i> , Deshayes . . . . .	II.	9	<i>pulexella</i> , <i>Lamarck</i> . . . . .	IV.	23
<i>evulata</i> , <i>Turton</i> . . . . .	VI.	38	<i>pulexerrima</i> , Deshayes . . . . .	VII.	46
<i>foveiculata</i> , <i>Adams and Reece</i> . . . . .	VII.	49	<i>rubicunda</i> , Deshayes . . . . .	V.	34
<i>foveus</i> , Philippi . . . . .	VI.	38	<i>rugulosa</i> , <i>Adams and Reece</i> . . . . .	VII.	51
<i>fulvata</i> , Deshayes . . . . .	VII.	48	<i>solida</i> , Philippi . . . . .	III.	18
<i>fulvica</i> , <i>Reece</i> . . . . .	VI.	40	<i>squamosa</i> , <i>Lamarck</i> . . . . .	VII.	50
<i>gurgus</i> , Deshayes . . . . .	V.	37	<i>Stangeri</i> , <i>Geay</i> . . . . .	II.	12
<i>ferrousis</i> ( <i>Tollu</i> ), Chennitz . . . . .	V.	33	<i>suffusa</i> , <i>Reece</i> . . . . .	VII.	54
<i>flavida</i> , <i>Lamarck</i> . . . . .	III.	17	<i>Telliniformis</i> , Deshayes . . . . .	V.	31
<i>fulvula</i> , <i>Turton</i> . . . . .	I.	6	<i>Tellinella</i> , <i>Lamarck</i> . . . . .	I.	6
<i>grata</i> , Deshayes . . . . .	II.	10	<i>tenuis</i> , Deshayes . . . . .	VI.	37
<i>insignis</i> , Deshayes . . . . .	III.	13	<i>tozata</i> , Deshayes . . . . .	II.	14
<i>intermedia</i> , Deshayes . . . . .	IV.	25	<i>tripartita</i> , Deshayes . . . . .	III.	20
<i>lata</i> , Deshayes . . . . .	I.	7	<i>tristis</i> , Deshayes . . . . .	II.	13
<i>Layardi</i> , Deshayes . . . . .	VI.	45	<i>vaguoides</i> , <i>Reece</i> . . . . .	VIII.	57
<i>Lessoni</i> , <i>De Lamarck</i> . . . . .	II.	8	<i>vespertina</i> ( <i>Solen</i> ), Gemelli . . . . .	III.	17
<i>lineata</i> , <i>Geay</i> . . . . .	VIII.	58	<i>zonitis</i> ( <i>Psammobian</i> ), <i>Lamarck</i> . . . . .	V.	29
<i>Malaccana</i> , <i>Reece</i> . . . . .	VI.	42			

### ERRATA.

Sp. 18. *P. solida*, for *Geay* read *Philippi* in Abhandlungen.



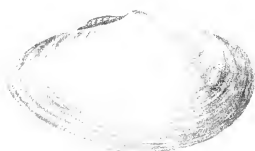


MONOGRAPH  
OF THE GENUS  
PSAMMOTELLA.

Yet Nature's charms the hills and woods  
The sweeping vales and bounding floods  
Are free alike to all. *Bosc.*







1.



2.



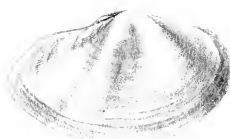
3.



4.



5.



6.



7.

# PSAMMOTELLA.

PLATE I.

Genus PSAMMOTELLA, Deshayes.

*Testa ovato-transversa, convexiuscula, subequilateralis, utrinque convexa, antice rotundata, postice longior, truncata vel subtruncata, concentricè striata, aut laeva aut rufescentes, epibaculo tenui deciduo cincta. Coste dentibus parvis constrictis erectis in latera sinistram, in latera dextra nuda, subulicis oblonga et ovalibus. Incrementum elevatum. Lappesina sarsentaria pallii sua oblonga perspicua.*

Shell ovately transverse, rather convex, nearly equilateral, gaping at both ends, anteriorly rounded, posteriorly longer, truncated or slightly beaked, concentrically striated, yellowish or violet, with a thin horny deciduous epidermis. Hinge with two small erect central teeth in the left valve, and one in the right, and an oblong callosity in both valves. Ligament external. Muscular impression of the mantle distinguished by a very large oblong sinus.

This genus, of which we have here represented seven species, was recently founded by M. Deshayes during an examination of the family to which they belong, lately made by that distinguished conchologist in the collection of Mr. Cuming. While engaged in arranging the *Psammotellæ* and their allies, M. Deshayes recognized a distinct generic type to which these were severally referable, none of which had hitherto been described. They are distinguished by a peculiarity of form, and they agree especially in substance and tone of coloring. With a convexly oblong nearly equilateral form, the posterior side being rather the longer, they are all densely concentrically striated, and either yellowish or deep violet, chiefly of the latter colour, with a thin deciduous epidermis.

So far as the localities are known, two are from the Philippine Islands, one from Malacca, one from Ceylon, and one from the Red Sea.

Species 1. (Mus. Cuming.)

PSAMMOTELLA PHILIPPINENSIS. *Testa ovato-transversa, convexiuscula, subequilateralis, concentricè irregulariter plicat-striata, alabastrina, subulicis, lineis nigricantibus nudatis, costisque duabus, natis, epidermide decidua cincta, utrinque nitente ovalata, lateribus subulicibus, postice levitate, viz. truncato.*

THE PHILIPPINE PSAMMOTELLA. Shell ovately transverse, rather convex, nearly equilateral, concentrically

irregularly plicately striated, whitish, covered toward the margin with a fulvous epidermis, sides sloping at the upper part, anterior rather narrowly rounded, posterior obliquely attenuately truncated, lower margin semicircular.

DESHAYES, MS., Mus. Cuming.

Hab. San Nicolas, Island of Zebu, Philippines: Cuming.

Of light swollen structure, nearly equilateral, and ovately attenuated at each end.

Species 2. (Mus. Cuming.)

PSAMMOTELLA MALACCENSIS. *Testa testâ ovato-transversa, tenui, equilateralis, convexiusculâ, concentricè et subtilissimè striatâ, pellucidâ-albâ, utrinque nitente subulicis rotundata, postice subcompressa, truncato-rotundata.*

THE MALACCA PSAMMOTELLA. Shell ovately transverse, thin, equilateral, slightly convex, smooth or faintly striated, transparent white, anterior side rather narrowly rounded, posterior somewhat compressed, truncate rounded.

DESHAYES, MS., Mus. Cuming.

Hab. Malacca.

A small species, of simple form and semitransparent substance, the posterior side being rather compressed.

Species 3. (Mus. Cuming.)

PSAMMOTELLA SKINNERI. *Testa testâ oblongo-transversa, minute impresso-striatâ, tenuissimâ, subulicis, lineis nigricantibus nudatis, costisque duabus, natis, epidermide decidua cincta, utrinque nitente ovalata, lateribus subulicibus, postice levitate, viz. truncato.*

SKINNER'S PSAMMOTELLA. Shell oblong transverse, minutely impressly striated, very thin, somewhat glassy, marked with black zigzag lines and two rays, covered with a shining olive horny epidermis, sides rather attenuated, posterior rather shorter, scarcely truncated.

Hab. Ceylon, Major Skinner.

Of very distinct character from the rest of the genus, the shell being exceedingly thin and transparent, marked with blackish zigzag lines, covered with a shining horny epidermis.

March, 1851.

## Species 4. (Mus. Cuming.)

**PSAMMOTELLA RUPPELLIANA.** *Psma. testis angulato-transversalis, solidiuscula, subdiligenter costatella, irregulariter striata, deorsu irregulariter striata, albidis, viridibus-lividis fuscata, postice pallide bicolorata, epidermide decidua prope marginem indurata, latere valvæ costatella, p. stico oblongo-truncato.*

**RUPPELL'S PSAMMOTELLA.** Shell elongately transverse rather solid, rather obliquely twisted, inequilateral, densely irregularly striated, whitish, banded with livid violet, posteriorly faintly two-rayed, covered near the margin with a deciduous epidermis, anterior side rounded, posterior oblong-truncated.

*Hab.* Red Sea; Ruppell.

A rather solid species, of oblong transverse growth, rather contorted in the posterior direction.

## Species 5. (Mus. Cuming.)

**PSAMMOTELLA AMBIGUA.** *Psma. testis acuto-transversalis, angulato-cili, irregulariter rugoso-striata, subdiligenter costata, lateribus superius declivibus, valvæ subimpunctata, postice subcompressa, postice, subdiligenter costatella.*

**THE DOTTLE PSAMMOTELLA.** Shell ovately transverse, inequilateral irregularly roughly striated, dull violet, sides sloping at the upper part, anterior rather narrowly rounded, posterior somewhat compressed, thin, truncate rounded.

*DESHAYES, MS., Mus. Cuming.*

*Hab.* ———?

Chiefly distinguished by the posterior side being conspicuously compressly produced.

## Species 6. (Mus. Cuming.)

**PSAMMOTELLA SUBRADIATA.** *Psma. testis ovato-transversalis, tenuis, subdiligenter costatella, irregulariter striata, deorsu irregulariter striata, albidis, viridibus-lividis fuscata, postice pallide bicolorata, epidermide decidua prope marginem indurata, latere valvæ costatella, p. stico oblongo-truncato.*

**THE FAINTLY RAYED PSAMMOTELLA.** Shell ovately transverse, thin, rather convex, irregularly roughly striated, pale violet, faintly white-rayed, covered with a thin epidermis, sides sloping at the upper part, anterior rather narrowly rounded, posterior a little compressed, truncate rounded.

*DESHAYES, MS., Mus. Cuming.*

*Hab.* San Nicolas, Island of Zebu, Philippines, Cuming.

Of lighter substance than the preceding species, with the posterior side shorter.

## Species 7. (Mus. Cuming.)

**PSAMMOTELLA ORBIGNA.** *Psma. testis angulato-transversalis, tenuis, subdiligenter costatella, irregulariter striata, deorsu irregulariter striata, albidis, viridibus-lividis fuscata, postice pallide bicolorata, epidermide decidua prope marginem indurata, latere valvæ costatella, p. stico oblongo-truncato.*

**THE ORBIGN PSAMMOTELLA.** Shell elongately transverse thin, nearly equilateral, irregularly finely striated, purplish-violet, covered towards the margin with a thin deciduous epidermis, sides nearly equally rounded.

*DESHAYES, MS., Mus. Cuming.*

*Hab.* ———?

A light purple-violet shell distinguished by its elongately oblong form, with the sides nearly equally rounded.

MONOGRAPH

OF THE GENUS

M Y T I L U S.

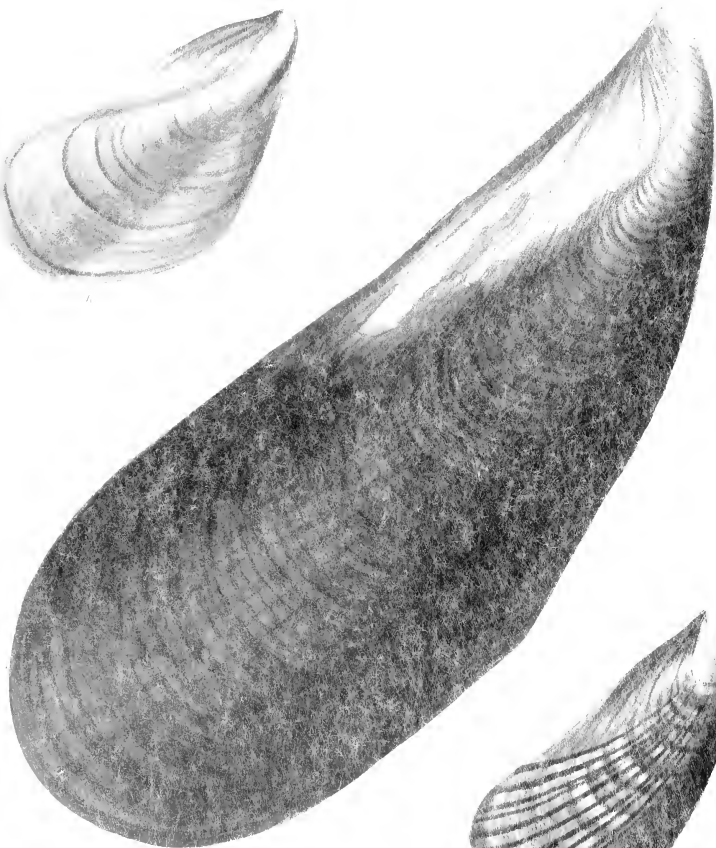
With a beard like "hon'gah!"

*Stalpacis.*









# MYTILUS.

PLATE I.

GENERAL MYTILUS *M. californicus*.

*Testa* oviformis, ovulorum globulorum circumscriptura, rugo-  
sitate nigrescente, vel in juvenibus immatura, in  
adultis subhisseris rugis in crenulis parvis  
conspicuis, apiculi cardis prescopulo rugoso distincto  
fere. — *Cardis* bilobatus, subbilobatus, seu tri-  
lobatus a septo, lobus, — *Ligam.* submarginatum, im-  
marginatum, subtriangul.

Shell (equivalve, above) egg-shaped, more or less trian-  
gular, affixed by a byssus, umbos sharp, nearly  
straight terminal; anterior side (above) compress-  
ly expanded, posterior somewhat contracted; epideimia  
generally leavy, sometimes hoary. Hinge toothless,  
sometimes slightly enailed, with the ligament  
marginal and partially internal. Muscular impres-  
sion compound, sublateral.

The *Mytili* are chiefly characterized by an elongately  
triangular growth, more or less hooked towards the um-  
bos, having the inferior side for the most part compress-  
ly expanded and the posterior arcuately contracte. Some  
species distinguished by the presence of a thin shell across  
the interior of the umbos, are arranged by authors as a  
separate genus, under the name of *Sepelites*, and others,  
characterized by a not unimportant difference in the  
animal, have been separated under the name of *Dreissena*.  
Neither of these forms have been however allowed to take  
the rank of genera by Deshayes.

So much do the *Mytili* vary in appearance and in dif-  
ferent circumstanes of habitation, as exemplified by the two  
figures of *M. Californianus* in the accompanying Plate,  
that it has been impossible to identify many of the species  
described by Continental conchologists. SIXTY-nine are

all that have been satisfactorily named on by procurable  
specimens; their range of habitation extends over the seas  
of both hemispheres.

Fig. 1. (*Mus. Cuning.*)

This delicately-formed and exquisitely-coloured shell is  
the *Mytilus glaucus* of Poli, now universally regarded as a  
variety of *M. edulis*, for description of which see Pl. VIII,  
Sp. 33.

Species 2. (Fig. 2 a & 3, *Mus. Cuning.*)

*MYTILUS CALIFORNIANUS.* *Myl. testis purpuraceo-lucida*,  
*subarenati, subulvi, pulchelli costulati, subhis intercardiis*  
*conspicuis excavatis, concentricis et rugulatis, nec*  
*postul. foveatis*. *Artemisiensis, in arte nigricante*  
*excavata.*

THE CALIFORNIAN MYTILUS. Shell pariformly elon-  
gated, slightly arched, solid, radiately ribbed, inter-  
mediate grooves conspicuously excavated, concentric-  
ly rudely wrinkled, posterior area smooth; yellowish-olive,  
blackish-blue with age.

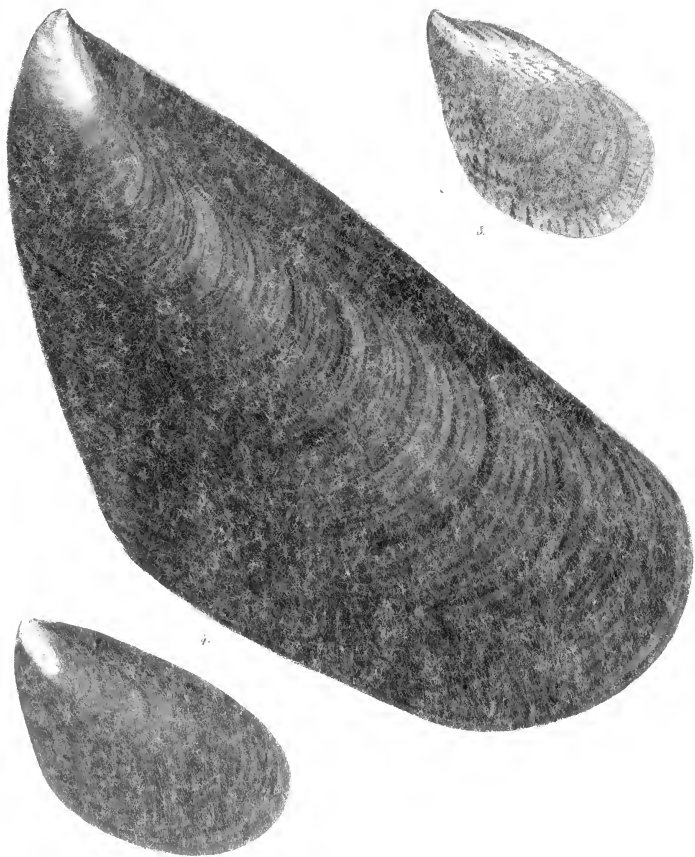
COE-RAD, Journ. Acad. Nat. Sci. Philadelphia, vol. vi,  
p. 242.

*H.*: California

The examples here figured of this fine species represent  
its extreme states. Young specimens, as Fig. 2 b, are  
rayed with strongly excavated grooves and the shell is of  
a rich yellowish-olive colour. In a more advanced state,  
the grooves become more and more obsolete, and the shell  
assumes a tough blackish-blue tinge.







## MYTILUS.

### PLATE II

#### Species 3 (Mus. Cuming.)

**MYTILUS ATER.** *Myt. testa triangulari ovata, postice compressa, ore angulata, concentricè et postice striatè, aurantio-fulvè, lineis saturatioribus inter a denticulatis leucis, cartilagineo postico erudi.*

**THE AFRICAN MYTILUS.** Shell triangularly oblong, posteriorly compressed, scarcely angled, concentrically irregularly striated, orange-brown, freckled with darker zigzag lines, green at the posterior extremity.

GILLIN, *Syst. Nat.*, p. 3458.

*Mytilus Ater*, S. Ctenantz.

*Hab.* Algiers.

Really distinguished by its orange-brown tone of colour, freckled with zigzag markings.

#### Species 4 (Mus. Cuming.)

**MYTILUS ENGLAYENS.** *Myt. testa elongato-oblonga, ovato-sacculi, concentricè striata, laterè postico subangulata, compressa, aurantio-fulvè, aurantio-erubescens-nigri.*

**THE HOOKED MYTILUS.** Shell elongately oblong, rather thick, concentrically striated, posterior side rather

angularly compressed, anteriorly rather broad, dark violet-black.

LINNEUS, *Syst. Nat.* (Gmel. edit. No. 12)

*Mytilus latus*, *par.*, Lomarek.

*Hab.* Cuesopton, Chih. Cuming.

Of very large size, rather flat, straight on the posterior side, obtusely angled in front, covered with a rich glazed violet-black epidermis.

#### Species 5 (Mus. Cuming.)

**MYTILUS COMPRESSUS.** *Myt. testa oblongo-ovata, compressa, concentricè irregulariter striata, laterè postico obtusè compressè angulata, laterè a denticulato-costata.*

**THE COMPRESSED MYTILUS.** Shell oblong-ovate, compressed, concentrically irregularly striated, posterior side obtusely compressly angled, dark olive-chestnut.

PHILIPPI, *MS.*, Mus. Cuming.

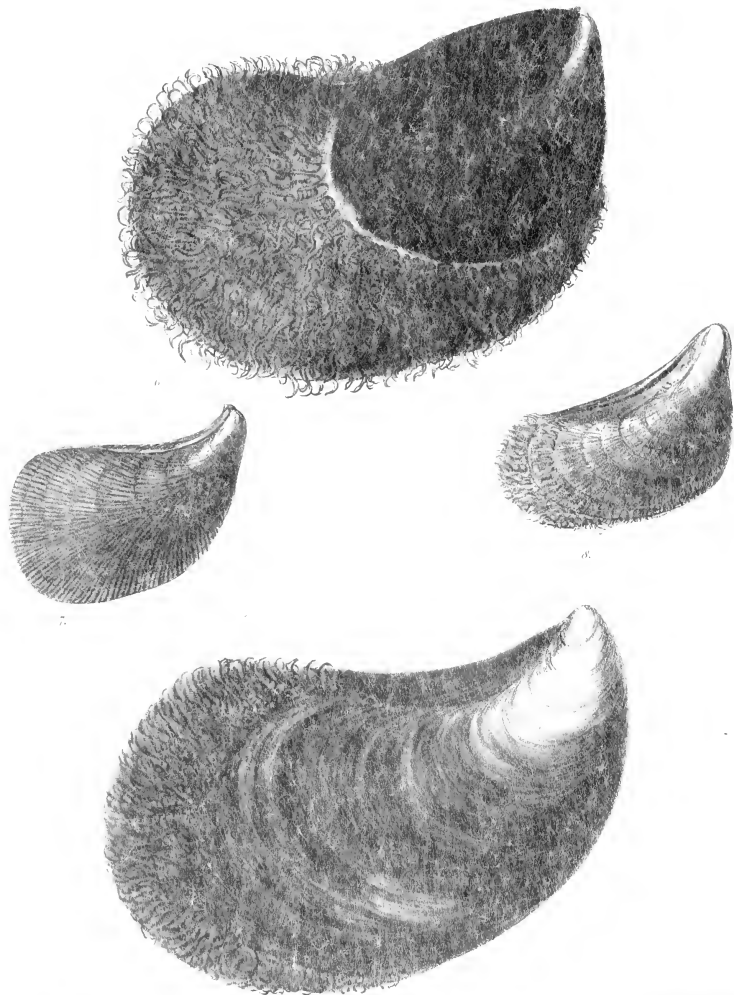
*Hab.* ——— ?

A simple compressed species, of a bright olive-chestnut, inclining at the margin to greenish-black.









# MYTILUS.

## PLATE III.

### Species 6. (Mus. Cuming.)

**MYTILUS DOLGUS.** *Myt. testis pyriformis ovato, concavato, striata, stris punctatis, obliquis deussatis, laevre postice lata, posticaeque sublimi, nitida-cinctura, cinctis. I. I. c. s. barbata.*

**THE DOLGIE MYTILUS.** Shell pyriformly ovate, concavately striated, stris obliquely deussated, posterior side broad, peculiarly distended, shining-cinctured, bearded with a fibrous epidermis.

DUSCKER, Pro. Zool. Soc., 1856.

*Hab.* Island of Mindanao, Philippines, Cuming.

This fine species, with its handsome bearded epidermis, is peculiarly distinguished by its strangely twisted growth

*bearded with a fibrous epidermis, shining-cinctured, cinctis. I. I. c. s. barbata.*

**THE MARY MYTILUS.** Shell arcuately oblong, posteriorly smoothly obtusely angled, anteriorly very broad and gibbous, apical, in the middle, longitudinally densely elevately striated; shining-cinctured, bearded with a fibrous epidermis.

LAMARCK, Ann. Mus. vert. vol. vi., p. 38.

*Hab.* New Zealand.

Triangular, curved, and very gibbous on the posterior side, with the valves gaping rather largely for the passage of the byssus.

### Species 7. (Mus. Cuming.)

**MYTILUS HAWKINS.** *Myt. testis arcuato-pyriformis, concavato, antice late impresso, stris cinctis divergentibus ad h. solum, et recurvante.*

**THE HAWKIE MYTILUS.** Shell arcuately pyriform, somewhat square, anteriorly broadly impressed, strongly sculptured with divergently raised strae, convergently

SAY, Journ. Acad. Nat. Sci., vol. ii., p. 265. American Conchology, pl. 50.

*Mytilus striatus*, Baines.

*Hab.* Gulf of Mexico.

A shell of stout substance, sculptured throughout with very strongly developed thick-set divergently ridges.

### Species 8. (Mus. Cuming.)

**MYTILUS BULSTES.** *Myt. testis arcuato-oblonga postice*

### Species 9. (Mus. Cuming.)

**MYTILUS HOKKIDO.** *Myt. testis pyriformi-ovoidi, antice postice impresso-concavo, concavato striati stris obliquis deussatis, cinctis-cinctura, epidermib. fibrosi barbati.*

**THE HOKKIE MYTILUS.** Shell pyriformly ovate, posterior side impressely curved, concentrically striated strae obliquely deussated; bright-cinctured, bearded with a fibrous epidermis.

DUSCKER, Pro. Zool. Soc., 1856.

*Hab.* Cape Capricorn, North Australia, Margillivry.

Very closely allied to *M. tortus* figured above it, but of a more truly pyriform curve, and destitute of any indication of the curious posterior distortion which is constant in that species.







a.



b.



c.



d.



e.

# MYTILUS.

## PLATE IV

### Species 10. (Mus. Cuming.)

**MYTILUS LANCEOLATUS.** *Myt. testis oblongo-fusiformis, antea breviter compressa, longitudinaliter sulcata. A bifurcata striata, latere posteriore angulato. J. testis, subrecessu angulo rotato.*

**THE SWORDED MYTILUS.** Shell oblong fan-shaped, anteriorly compressed, longitudinally grooved and bifurcately striated, posterior side obtusely angled, brown, often rayed with ochre.

LAMARCK, *Ann. sans vert.* vol. vii. p. 39.  
*Her.* West Indies.

A rather compressed, oblong fan-shaped species, strongly and radially striated, the striae being here and there bifurcated and inclined to pass off in the anterior direction. The colour of the shell is mostly of a swarthy-brown tinged red and often rayed with ochre.

### Species 11. (Mus. Cuming.)

**MYTILUS APROPERFECTUS.** *Myt. testis oblongo-fusiformis, postea dilatatus et angulatus longitudinaliter leviter striatus, striae confertis, subundulatis. J. testis prope rotatus.*

**THE DARK-PURPLE MYTILUS.** Shell oblong, rather thin, posteriorly swollen scarcely angled, longitudinally finely striated, striae close-set, slightly wavy; black-purple.

DUNN, MS. in Mus. Cuming.  
*Her.* Guinea, Dr. Tams.

Delicate in substance, very closely finely striated throughout, and of a rich dark-purple colour, collected by Dr. Tams at Guinea.

### Species 12. (Mus. Cuming.)

**MYTILUS LAMUS.** *Myt. testis elongato-ovatus, concentricis irregulariter striatus, alveolato, sub apice rade leviter emissa cinctis cinctis densis et rotatis. Latere posteriore, antea, sub, et, antea angulato, et angulato.*

**THE BEGON MYTILUS.** Shell elongately oval, concentrically irregularly striated, olive, incised with rays of bright-green beneath a thin horny epidermis; posterior side straight, obtusely slanting, anterior arched, scarcely angled.

LAMARCK, *Ann. sans vert.* vol. vi. f. 44.  
*Her.* New Zealand.

Of a peculiar slight oblong form swollen and bluntly sloping on the posterior side, which is straight at the margin, whilst the margin on the anterior side is only slightly angularly curved.

### Species 13. (Mus. Cuming.)

**MYTILUS INCUSUS.** *Myt. testis elongato-ovalis, subfusiformis, curvato, ante gibbosa, longitudinaliter sulcata et striata, linea confertis, crenulatis, hic illic bifurcata. J. angulatus, latere posteriore obtuso contracto, antea et rotato; sub, parva recessu angulato tincta.*

**THE ENGRAVED MYTILUS.** Shell oblong-ovate, rather solid, curved, very gibbous, longitudinally grooved and ridged, ridges close-set, crenulated, here and there bifurcately diverging, posterior side obtusely contracted, anterior rounded; whitish, tinged with purple-fawn.

*Technicum esse videtur.* Wiegman, Archives, 1837.  
*Myt. incusus.* Reduz.  
*Her.* Madagascar.

Of very gibbous solid growth, with the diverging striae enlarged into conspicuously crenulated ridges.

### Species 14. (Mus. Cuming.)

**MYTILUS OVALIS.** *Myt. testis oblongo-ovatus, plus minus gibbosa, longe distulter leviter striata, hic parva crenulata, indistincta, substantibus, et rotatis, hic et marginem hic alveo interstices; sub, antea, latere posteriore, concentricis; nigro-purpureo, rade tincta.*

**THE OVAL MYTILUS.** Shell oblong-oval, more or less gibbous, longitudinally ridged, ridges but little crenulated, wavy, rather distant, interstices towards the margin with another ridge intervening; umbos rather swollen incumbent; blackish-purple, stained with chestnut.

In this species, as Lamarck describes, the umbos are compressly incumbent, presenting a link with the typical growth of the umbos in *Hebulla*. The sculpture consists of slightly wavy radiating ridges, with an alternate ridge appearing in the interstices as they widen out towards the margin. The colour is blackish-purple passing beneath the umbos into chestnut.





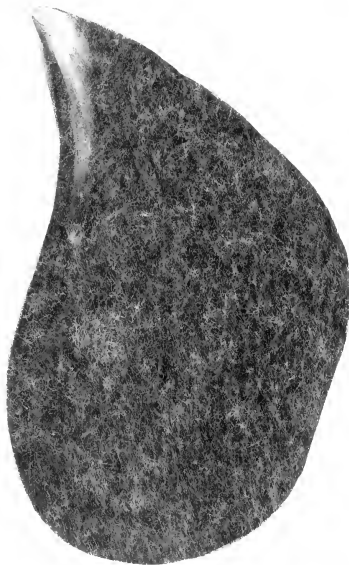




13.



16.



15.



18.



19.

# MYTILUS.

## PLATE V.

Species 17. (Mr. Cuvier.)

**MYTILUS ROSSTRATUS.** *Myt. testis, submarginatellus, crenatus, at. testis, rostratus, marginatellus, testis, submarginatellus, crenatus, at. testis, rostratus.*

**FIG. 1.**—A lateral view of the shell, showing the anterior and posterior sides, the dorsal and ventral valves, and the spondylium, the latter being on the dorsal side, and the former on the ventral side. The spondylium is on the dorsal side, and the former on the ventral side.

**FIG. 2.**—A dorsal view of the shell.

**FIG. 3.**—A ventral view.

Shell oval, rather thin, slightly flattened. The anterior side is slightly concave, and the posterior side is slightly convex. The spondylium is on the dorsal side, and the former on the ventral side. The spondylium is on the dorsal side, and the former on the ventral side.

Species 18. (Mr. Cuvier.)

**MYTILUS ROSSTRATUS.** *Myt. testis, submarginatellus, crenatus, at. testis, rostratus, marginatellus, testis, submarginatellus, crenatus, at. testis, rostratus.*

**FIG. 1.**—A lateral view of the shell, showing the anterior and posterior sides, the dorsal and ventral valves, and the spondylium, the latter being on the dorsal side, and the former on the ventral side. The spondylium is on the dorsal side, and the former on the ventral side.

**FIG. 2.**—A dorsal view of the shell.

**FIG. 3.**—A ventral view of the shell.

**FIG. 4.**—A dorsal view of the shell.

**FIG. 5.**—A ventral view.

Shell oval, rather thin, slightly flattened. The anterior side is slightly concave, and the posterior side is slightly convex. The spondylium is on the dorsal side, and the former on the ventral side. The spondylium is on the dorsal side, and the former on the ventral side.

Species 19. (Mr. Cuvier.)

**MYTILUS DUNKRAI.** *Myt. testis, submarginatellus, crenatus, at. testis, rostratus, marginatellus, testis, submarginatellus, crenatus, at. testis, rostratus.*

**FIG. 1.**—A lateral view of the shell, showing the anterior and posterior sides, the dorsal and ventral valves, and the spondylium, the latter being on the dorsal side, and the former on the ventral side. The spondylium is on the dorsal side, and the former on the ventral side.

*Myt. Phalangis, Cuvier.*

I have the pleasure of naming this fine species after the eminent conchologist, Mr. Cuvier, who has worked with me on the subject of the anatomy of *Myt. testis*. Mr. Cuvier's object in this work is, I believe, to give a more complete and accurate description of the structure of the spondylium, and of the spondylium itself, than has been given in the system of nomenclature proposed by Mr. Cuvier.

Species 20. (Mr. Cuvier.)

**MYTILUS ROSSTRATUS.** *Myt. testis, submarginatellus, crenatus, at. testis, rostratus, marginatellus, testis, submarginatellus, crenatus, at. testis, rostratus.*

**FIG. 1.**—A lateral view of the shell, showing the anterior and posterior sides, the dorsal and ventral valves, and the spondylium, the latter being on the dorsal side, and the former on the ventral side. The spondylium is on the dorsal side, and the former on the ventral side.

*Myt. Phalangis, Cuvier.*

Shell oval, rather thin, slightly flattened. The anterior side is slightly concave, and the posterior side is slightly convex. The spondylium is on the dorsal side, and the former on the ventral side. The spondylium is on the dorsal side, and the former on the ventral side.

Species 21. (Mr. Cuvier.)

**MYTILUS ROSSTRATUS.** *Myt. testis, submarginatellus, crenatus, at. testis, rostratus, marginatellus, testis, submarginatellus, crenatus, at. testis, rostratus.*

**FIG. 1.**—A lateral view of the shell, showing the anterior and posterior sides, the dorsal and ventral valves, and the spondylium, the latter being on the dorsal side, and the former on the ventral side. The spondylium is on the dorsal side, and the former on the ventral side.

**DUNKRAI, MS. in Mr. Cuvier's**

*Myt. Phalangis, Cuvier.*

This species is always so much cruded it is not possible to describe the sculpture. It appears however to be developed originally in the radiating striae. Mr. Cuvier describes it, in his Catalogue of the Reigen Collection in the British Museum as being abundant at Vizantine and always slenderer than the other.







20



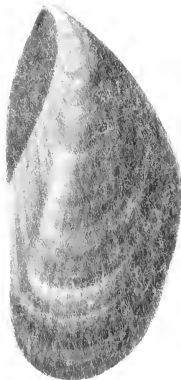
21



22



23



24

# MYTILUS.

PLATE VI.

Species 20 (Mus. Cuming.)

**MYTILUS BOREALIS.** *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829. *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829. *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829.

**THE NEWFUNDLAND MYTILUS.** Shell oblong, very somewhat arched, thin, rather swollen, smooth (or apparently striated), finely plicately wrinkled on the anterior side, umbos a little divergent; shining olive-black, violet at the umbos.

*Check.* Ann. Mus. Vert. vol. viii. p. 46.  
*Loc.* Newfoundland.

A light, cold, swollen shell of a dark shining olive-black colour, tinged with violet at the umbos, a violet line white on each from end to other.

Species 21 (Mus. Cuming.)

**MYTILUS COLUMBIENSIS.** *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829. *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829. *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829.

**THE LITTLE MYTILUS.** Shell oblong, somewhat flattened, smooth, or minutely densely striated, posterior side straight, anterior slightly depressed, obtusely angled at the margin, yellowish-olive, towards the margin shining olive, and obscurely minutely plicated.

*Phillips*, Quaker, MS. in Mus. Cuming.  
*Loc.* Island of Oahu.

Of tall or light substance, of a rich shining olive-colour, veined with fine pencil lines.

Species 22 (Mus. Cuming.)

**MYTILUS MAGELLANICUS.** *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829.

*Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829. *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829. *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829.

**THE MAGELLAN MYTILUS.** Shell elongately pear-shaped, rather conipressed, arched, and arcuated towards the umbos, longitudinally minutely ribbed, ribs wave-wrinkled and rounded, sometimes obsolete near the margin; deep violet-black.

*Cuvier*, *Mat. Zool.* vol. xiii. pl. 83. f. 12.  
*Loc.* Straits of Magellan.

A very characteristic flattened pear-shaped shell, of a violet-black colour covered with waved, wrinkle-like, or striated ribs.

Species 23 (Mus. Cuming.)

**MYTILUS PERNA.** *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829. *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829. *Myt. borealis* Cuming, *Proc. Zool. Acclimat. Soc. London*, vol. 1, p. 27, 1829.

**THE PERNA MYTILUS.** Shell narrowly elongated, rather thick, gibbous and posteriorly obtusely angled towards the umbos, smooth or decussately striated, violet, stained with dark green towards the margin.

*Myt. Perna*, Linnaeus, Syst. Nat. p. 1113.  
*Mytilus elongatus*, Chemnitz.

*Loc.* Newfoundland.

Of a narrow elongated form, and solid structure, gibbously obtusely angled towards the umbos on the posterior side.

Fig. 21 (Mus. Cuming.)

A fine example in an early stage of growth of *Mytilus borealis* represented at Pl. IV. Fig. 12. It is only in this state that a characteristic dark horny band descending posteriorly from the umbos is seen.









25.



27.



26.



28.



29.

# MYTILUS.

PLATE VII.

Species 23. (Mus. Cuming.)

**MYTILUS CRASSUS.** *Myt. testâ elongato-flabelliformi, postice auriculâ latè gibbosa, antèque radiatim undulato-striatâ, sive crenulato, intus rubro-purpureâ.*

**THICK MYTILUS.** Shell elongately fan-shaped, posteriorly arched, broadly gibbous, radiately wave-striated throughout, striae crenulated, deep reddish-purple.

*Sepiifer* CRASSUS. Dunker.

*Hab.* ———.

A dark reddish-purple shell, wave-striated throughout, with a characteristic scription across the interior of the umbonal extremity of each valve, and which is regarded by authors as the type of a distinct genus, *Sepiifer*.

Species 24. (Mus. Cuming.)

**MYTILUS MENCKENS.** *Myt. testâ subtriangulo-ovigulâ, solidâ, radiè yllivâ radiatè, radiè, crenulato-estriatâ, costâ auriculâ tripartitâ, antè posticâ latè obrepens, sive auriculâ crenulato-striatâ; intus fulvobrunneâ.*

**MENCKE'S MYTILUS.** Shell somewhat triangularly elongated, solid, very gibbous, radiately strongly wrinkle-ribbed, ribs diverging anteriorly, posterior area broad, depressed, very closely crenulately ridged; shining yellowish-chestnut, deep purple in the interior.

*POLYPT.* Dunker, MS in Mus. Cuming.

*Hab.* New Holland.

The sculpture is curiously developed on the same plan, but in three different degrees. The posterior, anterior, and middle areas present a striking contrast

Fig. 27. (Mus. Cuming.)

This shell here figured and which Mr. Cuming possesses

as representing *Mytilus patens*, Born, is identical with *M. Afer*, Gmelin, described in Plate II.

Species 28. (Mus. Cuming.)

**MYTILUS SMARAGDINEUS.** *Myt. testâ elongato-oblongâ, convexâ, marginè antero-obliquè-angulâ, laevigatâ antè dorsalem striatâ, latèe posticæ subrectâ, auriculâ leviter arcuatâ; nigro-olivaceâ, cæcis marginibus emarginatâ.*

**THE BRIGHT-GREEN MYTILUS.** Shell elongately oblong, convex, slopingly angled at the anterior margin, smooth or deussately striated, posterior side nearly straight, slightly arched in the middle, very dark olive, bright-green towards the margin.

*CHEMNITZ.* Conch. Cob. vol. viii. pl. 83, t. 745.

*Mytilus apulicus.* Lamarek.

*Hab.* Borneo.

This well-known species, in an advanced stage of growth with the epidermis more or less worn off or eroded, shows a peculiar structure, and is in this state the *M. apulicus* of LAMAREK.

Species 29. (Mus. Cuming.)

**MYTILUS GRUNERIANUS.** *Myt. testâ elongato-flabelliformi, posticè latè yllivâ, subrectâ, antècè antè marginem delectè-auriculâ, laevigatâ, intus, concentricè crenulato-striatâ; intusento-olivaceâ, aut nigrescens, periparènter, intus plumbico-auriculâ.*

**GRUNER'S MYTILUS.** Shell elongately fan-shaped, posteriorly broadly gibbous, nearly straight, anteriorly slopingly arched at the margin, smooth, shining, concentrically wrinkle-striated; yellowish-fawn, purple-black at the margin, lead-blue in the interior.

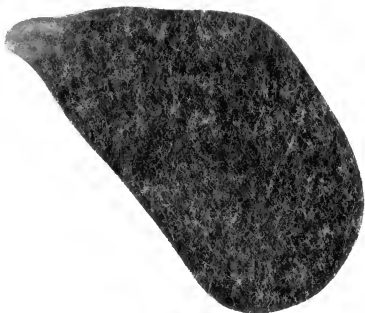
*DUNKER.* MS in Mus. Cuming.

*Hab.* Iceland.

A fine new species, of a peculiar yellowish-fawn-colour, richly coloured towards the margin with purple-black, while the interior is of a dull leaden-blue.







# MYTILUS.

## PLATE VIII.

### Species 30. (Mus. Cuming.)

**MYTILUS OBSCURUS.** *Myt. testâ subquadrato-oblongâ, convexâ posticè à nodâ impressâ, nervosis striatâ; albâ; sordide olivacea ant. rufescente tinctâ.*

**THE OBSCURE MYTILUS.** Shell somewhat squarely oblong, convex, not impressed on the posterior side, concentrically striated; whitish, tinged with dull-olive or green.

DENKER, *Proc. Zool. Soc.* 1856, p. 360.

*Hab.* Sydney.

Distinguished by an even convex growth, not impressed, as is commonly the case in this genus, on the posterior side.

### Species 31. (Mus. Cuming.)

**MYTILUS OBESUS.** *Myt. testâ elongato-ovata, solidâ, convexâ, ant. nodâ subquadrato-oblongâ, costata, levigatâ; plus minus rufâ, costâ obscurè straciatâ pilatâ; internâ purpuraceantâ.*

**THE STOUT MYTILUS.** Shell elongately ovate, rather solid, somewhat angularly attenuated towards the umbos, beaked, smooth, more or less roughly costed, obscurely divaricately plicated; deep purple-black.

DENKER, *MS.* Mus. Cuming.

*Hab.* Van Diemen's Land; R. C. Gunn.

A shell of solid structure and rough purple-black surface obscurely divaricately waved with rude folds.

### Species 32. (Mus. Cuming.)

**MYTILUS GRACILIS.** *Myt. testâ angustè elongatâ, levigatâ, nervosis alternatè productâ, posticè rufâ impressâ, convexâ levigatè densè striatâ; albâ, epidermidè cumâ olivacea et rufâ circumscriptè tinctâ.*

**THE SLIMDER MYTILUS.** Shell narrowly elongated, thin, attenuately produced towards the umbos, posteriorly but little impressed, concentrically densely striated; whitish, covered with an olive and dull blue-green epidermis.

*Hab.* Mexico.

Distinguished in a conspicuous degree by its narrowly elongated form.

### Species 33. (Fig. a, b. Mus. Cuming.)

**MYTILUS EDULIS.** *Myt. testâ obliquè triangulâ, concentricè striatâ, carulosâ, levigatâ, vel olivacea à nigro-violatâ posticè subconvexâ, anticè arcuata impressâ.*

**THE EDIBLE MYTILUS.** Shell obliquely triangular, concentrically striated, blue-black or olive, rayed with black, rather compressed posteriorly, anteriorly acutely impressed.

LINNEUS, *Syst. Nat.* (12th edit.) p. 1157.

*Mytilus p. lundulæ*, Pennant.

*Mytilus incervatus*, Pennant.

*Mytilus vulgaris*, Da Costa.

*Mytilus flavus*, Poli.

*Mytilus sagittatus*, Poli.

*Mytilus abbreviatus*, Lamarek.

*Mytilus retusus*, Lamarek.

*Mytilus hispanicus*, Lamarek.

*Mytilus l'abatis*, Gray.

*Mytilus subsarcelitis*, Williamson.

*Hab.* North Atlantic shores.

The numerous synonyms annexed to this well-known species, evidence in a striking degree the many variations it assumes under different circumstances of habitation.

### Fig. 31. (Mus. Cuming.)

This fine shell proves to be a dark full-grown variety of *M. testâ*, represented at Plate IV.

### Species 35. (Mus. Cuming.)

**MYTILUS PILOSES.** *Myt. testâ latè triangulâ, convexâ, nervosis costâ gibbosâ, posticè concentricè impressâ, nudicè posticè serratâ, anticè granulato-serratâ; rufâ, rufâ sparsè pilosâ.*

**THE HAIRY MYTILUS.** Shell broadly triangular, very gibbous towards the umbos, posteriorly concavely impressed, everywhere strongly ridged; ridges granularly serrated, yellowish-olive, sparingly hairy.

REICH, *MS.* in Mus. Cuming.

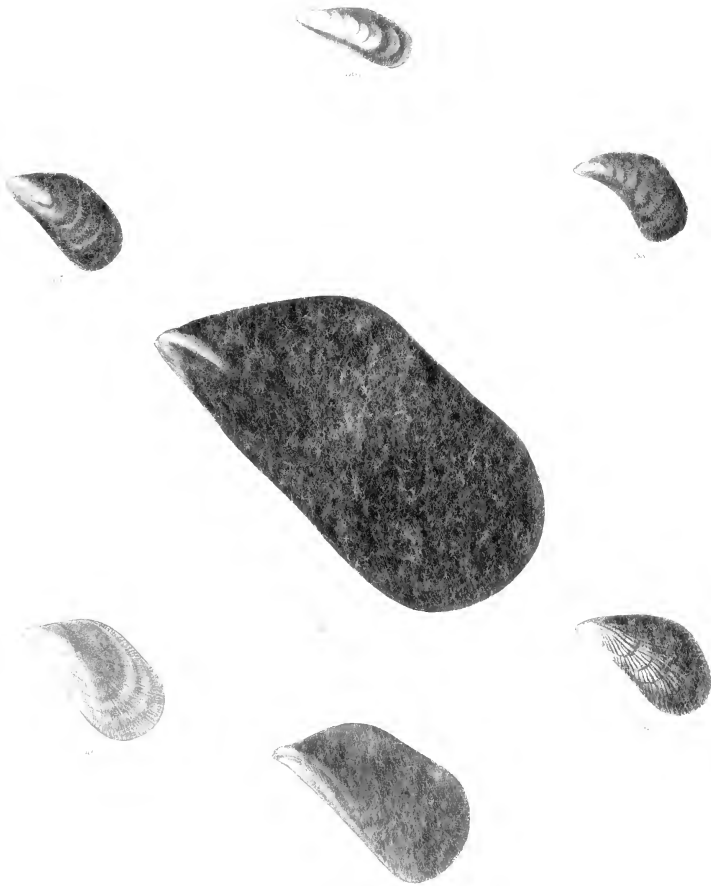
*Hab.* —?

A broadly triangular shell, very gibbous and contracted towards the umbos, the surface being densely serrately ridged throughout, covered with a yellowish-olive hoary epidermis, bearded with rather distant bristly hairs.









# MYTILUS.

PLATE IX.

Species 35. (Mus. Cuning.)

**MYTILUS AUGUSTEUS.** *Myt. testa nigresc. oblonga, plic. fasciata, umbonibus sinibus foveolis, lamellis, margeribus, tribus, extrinsecis concentricis striatis, fuliginosis, reticulatis.*

**THE NARROW MYTILUS.** Shell narrowly oblong, rather gibbous, umbos somewhat contracted, swollenly, smooth, exteriorly concentric striated, silvously-brown, rounded.

LAMARCK, Anim. sans vert. vol. vii. p. 16.  
He? Valparaiso.

Distinguished by its narrow pedicelous growth, partaking somewhat of *Halimæ* in form.

Species 37. (Mus. Cuning.)

**MYTILUS TRIPUSCULATUS.** *Myt. testa trigono-oblonga, sinuata, subest gibbosa, sinu. compressa, radiata, radiis densis striatis, striis concentricis umbonibus, 9, extrinsecis striatis, plicis concentricis tenetis.*

**THE FINELY-STRIATED MYTILUS.** Shell triangularly oblong rather curved posteriorly gibbous, anteriorly compressly angled, radiately densely striated, striae more or less obsolete in the middle, olive-brown, white, tinged with purple around the umbos.

DUNKER, MS. Mus. Cuning.  
*Hab.* ———

A shell of light substance, purple-brown in colour, closely ridged with striae, which commence on the umbos, and then become obsolete, reappearing more strongly developed at the margin.

Species 38. (Mus. Cuning.)

**MYTILUS MORESI.** *Myt. testa nigresc. curvata, verrucosa, sinibus gibbosis, plicis plicis, tribus, radiis, radiis radiatis, sinibus, tribus, striatis, sinibus, tribus, striatis, sinibus, tribus, striatis.*

**MORSE'S MYTILUS.** Shell narrowly curved gibbous, towards the umbos, posteriorly peculiarly convexly, where radiately grooved, ridges narrow, horizontal, there bifurcated, blue black.

DUNKER, Pro. Zool. Soc. 1856, p. 569.  
*H.* ——— Guinea.

A narrow, peculiarly curved, horizontally grooved and edged into the manner of *M. mytilus*.

Species 39. (Mus. Cuning.)

**MYTILUS GIBBOSUS PROVINCIALIS.** *Myt. testa nigresc. sinibus, tribus, striatis, sinibus, tribus, striatis, sinibus, tribus, striatis, sinibus, tribus, striatis.*

**THE PROVENCE MYTILUS.** Shell oblong, posteriorly rather depressed, gibbous, anteriorly compressly dilated, everywhere smooth, shining, blue-black.

LAMARCK, Anim. sans vert. vol. vii. p. 46.  
*Hab.* Shores of Provence, M. d'Hiveretean.

This species may be nothing more than a local modification of *M. edulis*; it is, however, peculiarly conspicuously dilated on the anterior side.

Fig. 10. Mus. Cuning.)

The shell here represented *Mytilus Kewissii*, Kuster, is a characteristic orange-red variety of *M. Niveoboricensis*, of which species the dark bronze-green state, described and figured at fig. 42, is the type.

Species 41. (Mus. Cuning.)

**MYTILUS BIFURCATUS.** *Myt. testa trigono-oblonga, subest gibbosa, sinibus, tribus, striatis, sinibus, tribus, striatis, sinibus, tribus, striatis, sinibus, tribus, striatis.*

**THE BIFURCATED MYTILUS.** Shell triangularly ovate, posteriorly depressed, very gibbous, everywhere conspicuously grooved, grooves here and there bifurcated, ridges obviously grooved; lustrous blue-black.

CONRAD, Journ. Acad. Nat. Sci. Philadelphia, vol. vii. p. 341.

A very strongly grooved species, of a dark indigo blue-black colour.

Species 42. (Mus. Cuning.)

**MYTILUS NIVEOBORICUS.** *Myt. testa subquadrato-oblonga, sinibus, tribus, striatis, sinibus, tribus, striatis, sinibus, tribus, striatis, sinibus, tribus, striatis.*

**THE NIVEOR MYTILUS.** Shell somewhat squarely oblong, rather thick, posteriorly broadly & heavily depressed, very gibbous, beaked at the umbos, anteriorly flexuously compressed, everywhere densely grooved, the ridges being granularly serrated, and here and there bifurcated; deep blue-grey.

CHENUZZI, Conch. Calc. vol. xvi. p. 155-157, pl. 89, f. 736, 737, 738, and 737 nos. 2 and 3.

*Mytilus Niveoboricus*, Lamarck.  
*Fucosus*, Schrebler, Waggon.  
*Species Niveoboricus*, Dunker.

*Hab.* Eastern Archipelago.

A characteristic densely-grooved species of dark bronze-green colour, chambered within the umbos.





*Mytilus. Pl. I.*



## MYTILUS

## PLATE V

## Species 13 (Mus. Canning)

**MYTILUS AFRICANUS**.—Shell elongated, posteriorly very gibbous, very broad, flatly impressed, sharp at the angle; bluish-white, some intricately streaked with blue.

**Color.**—Dorsum pale. Sides bluish white, and the line above considerably raised. The depression white above.

*Dorsum* *Ch. Canning*.—Recher. MS. in Mus. Canning.

*Shell* *Ch. Canning*.

A shell to which I have given the name of *Mytilus africanus*.

## Species 14 (Mus. Canning)

**MYTILUS SALLI**.—*Mytilus salli* *Ch. Canning*.

*Color* *Ch. Canning*.—*Recher. MS. in Mus. Canning*.  
*Color* *Ch. Canning*.—*Recher. MS. in Mus. Canning*.  
*Shell* *Ch. Canning*.

**SALLI'S MYTILUS**.—Shell elongated, posteriorly gibbous, posteriorly impressed, narrow shell, narrow, posteriorly abruptly somewhat pointed, with a faint blackish streak.

*Recher. MS. in Mus. Canning*.—*Recher. MS. in Mus. Canning*.  
*Journal de Conch.* vol. 1, p. 174, pl. 19, f. 9.

*Color* *Ch. Canning*.

The anteriorly curved lamella, apparently impressed, is to be the middle of a depression, rounded behind, and bent.

## Species 15 (Mus. Canning)

**MYTILUS ROUSSSELIERI**.—*Mytilus rousselieri* *Ch. Canning*.  
*Color* *Ch. Canning*.—*Recher. MS. in Mus. Canning*.  
*Color* *Ch. Canning*.—*Recher. MS. in Mus. Canning*.  
*Shell* *Ch. Canning*.

**ROUSSELIER'S MYTILUS**.—Shell elongated, somewhat swollen, rather shell, posteriorly broadly impressed, gibbous. White, some intricately streaked with a thin light-brown epidermis.

*Dorsum* *Ch. Canning*.—*Recher. MS. in Mus. Canning*.

*Shell* *Ch. Canning*.

A finely distinguished lamella, apparently impressed, is to be on the posterior side, and consists of a thin convexity.

## Species 16 (Mus. Canning)

**MYTILUS AFRICANUS**.—Shell elongated, posteriorly very gibbous, very broad, flatly impressed, sharp at the angle; bluish-white, some intricately streaked with blue.

**THE BLACK MYTILUS**.—Shell elongated, posteriorly very gibbous, very broad, flatly impressed, sharp at the angle; bluish-white, some intricately streaked with blue. Covered with an olive-black fine epidermis.  
*Dorsum* *Ch. Canning*.—*Recher. MS. in Mus. Canning*.  
*Shell* *Ch. Canning*.

Of elongated form, remarkably gibbous, and somewhat flatly impressed on the posterior side.

## Species 17 (Mus. Canning)

**MYTILUS AFRICANUS**.—*Mytilus africanus* *Ch. Canning*.  
*Color* *Ch. Canning*.—*Recher. MS. in Mus. Canning*.  
*Color* *Ch. Canning*.—*Recher. MS. in Mus. Canning*.  
*Shell* *Ch. Canning*.

**THE AFRICAN MYTILUS**.—Shell rather elongated, posteriorly somewhat impressed, but somewhat concentrically, invested with a bluish epidermis.

*Recher. MS. in Mus. Canning*.—*Recher. MS. in Mus. Canning*.  
*Journal de Conch.* vol. 1, p. 174, pl. 19, f. 9.

The peculiarity of this species consists in its shape, which is elongated, but the posteriorly, showing scarcely any of the depression commonly stated in the *Recher. MS.*

## Species 18 (Mus. Canning)

**MYTILUS DOMINGUESI**.—*Mytilus dominguesi* *Ch. Canning*.  
*Color* *Ch. Canning*.—*Recher. MS. in Mus. Canning*.  
*Color* *Ch. Canning*.—*Recher. MS. in Mus. Canning*.  
*Shell* *Ch. Canning*.

**THE DOMINGUES MYTILUS**.—Shell elongated, slightly curved, somewhat and beaded toward the angles, rather impressed, posteriorly, particularly toward the angles, and rounded, concentrically.

*Dorsum* *Ch. Canning*.—*Recher. MS. in Mus. Canning*.  
*Shell* *Ch. Canning*.

A fine, rounded, slightly raised lamella, apparently impressed, is to be on the posterior side, and consists of a thin convexity.

## Species 49. (Mus. Cuming.)

MYTILUS POLYMORPHUS. *Myt. testis trigonostriatus, ovata, postice valde gibbosa, latissime carere-ni impressa, et angulum acuta, concentricè striata; lutea, strigose undulata olivaceis concentricè variegata.*

THE MANY-SHADED MYTILUS. Shell triangularly trapezoid, posteriorly very gibbous, very broadly & heavily impressed, sharp at the angle, concentrically striated, yellow, concentrically variegated with zigzag olive streaks.

PALLAS, It. Russ., vol. 1, p. 478; Chemn. Conch. Cab. vol. XI, p. 256, pl. 265, pl. 2028.

*Mytilus Ungroii*, De Baer.

*Mytilus arca*, Kieka.

*Dreissena polyzona*, Vanbeneden.

*Hab.* Rivers of Northern Europe.

This well-known species is distinguished from all others of the *Dreissena* group by its extreme trapezoidal form and variegated painting.

## Species 50. (Mus. Cuming.)

MYTILUS COCHLEATUS. *Myt. testis ovato-oblongo ac-*

*tive subangulata, postice impressa, concentricè striata, sedula, fuscocerulea, purpureo carere-ni strigata.*

THE SPOON-SHAPED MYTILUS. Shell elongately oblong, anteriorly slightly angled, posteriorly impressed, concentrically striated; dirty light-brown, concentrically streaked with purple.

*Dreissena cochlearia*, Kieka, Dunker, MS. in Mus. Cuming.

*Hab.* ———.

Of a rather oblong-produced form, streaked with a characteristic pattern of concentric purple bands.

## Species 51. (Mus. Cuming.)

MYTILUS MORCHIANUS. *Myt. testis trigonata, subovata, postice subimpressa, undulatis costatis; crassa-alba, sp. 7 ovale lutescente fibrosa partim induta.*

MORCH'S MYTILUS. Shell triangular, slightly curved posteriorly faintly impressed, umbones beaked; eroded white, partially covered with a yellowish fibrous epidermis.

*Dreissena Morchiana*, Dunker.

*Hab.* Island of St. Thomas, West Indies.

Of paler substance than usual in the *Dreissena* group more or less invested with a yellowish fibrous epidermis.





*Mytilus Pl. M.*



# MYTILUS.

## PLATE XI

Species 52. (Mus. Cuning.)

**MYTILUS CUMINGIANUS.** *Myl. testis triangularifallicati, valve gibbosa, postice late subovata-impressa, umbone rotunda deorsu graevius radiis, bris versus arcuatae pons minus dichotomis; pulchritudinescente, rigo et viridi virescente variegata.*

**CUMING'S MYTILUS.** Shell triangularly fan-shaped, very gibbous, posteriorly broadly somewhat convexly impressed, radiately densely granulely edged throughout, ridges more or less dichotomous towards the margin; transparent-yellow, variegated with red and bright-green.

Recher. Mus. de Mus. Cuning.

*Hab.* Panama.

A convex gibbously-impressed shell, prettily variegated with red or bright-green upon a light semitransparent ground.

Species 53. (Mus. Cuning.)

**MYTILUS CURVATUS.** *Myl. testis subtriangul. suborbitali, valve arcuata, postice postartere impressa, umbone rotunda arcuata, pons versus radiis dichotomis radiata.*

**THE CURVED MYTILUS.** Shell somewhat triangular, rather solid, very much arched, posteriorly peculiarly impressed, umbone rather beaked, brownish-horny, rived with fine dichotomous ribs.

Dunker, Pro. Zool. Soc. 1856.

*Hab.* Island of Luzon, Philippines, Cuning.

A stout curved shell, curiously compressed, or pinched, in its center, beneath the umbones in the vicinity of the byssal ridges.

Species 54. (Mus. Cuning.)

**MYTILUS LAVALLIANUS.** *Myl. testis orbiculat. Medull. pons, valve gibbosa et unarcti, latera plicata subultra, pons radiatus visibile sinuata, carinae pons.*

**LAVALLI'S MYTILUS.** Shell oblong, Med. fan-shaped, very gibbous and swollen, posterior side impressed beneath, radiately obliquely grooved, chestnut-brown.

DORRIGNY, Moll. de Cuba.

*Hab.* Cuba.

A short swollen gibbous species, possessing very much of the character of *Medulla*.

Species 55. (Mus. Cuning.)

**MYTILUS ADAMSTANUS.** *Myl. testis ovalifallicati, valve gibbosa, postice planiuscula impressa, ad umbones att. valve rostrata, valve fimbriata, radiis utriusque flammosissimis tellurata, carinae granulato-arcuatae, carinae marginis dichotomis, et rivo, nigro fuscis.*

**ADAMS'S MYTILUS.** Shell ovately triangular, very gibbous, posteriorly dully compressed, attenuately beaked at the umbones, fan-shaped anteriorly, everywhere mostly flexuously ribbed, ribs granularly serrated dichotomous towards the margin; olive, tinged with black.

Dunker, Pro. Zool. Soc. 1856, p. 360.

*Hab.* Panama; Cuning.

A very pretty species, rayed throughout with finely serrated flexuous dichotomous riblets.

Species 56. (Mus. Cuning.)

**MYTILUS MINATUS.** *Myl. testis triangu. subtriangul. post. gibbosa et convexiuscula impressa, striatibus sinuatis, rivo, latera carinatae striatae, valve fimbriata, pons fuscis.*

**THE VERY SMALL MYTILUS.** Shell triangular, oblong posteriorly gibbous and convexly impressed, rather sharply angled on each side, densely concentricly striated, whitish, stained with brown-purple.

POLL, Test. utr. Sicil. vol. ii, pl. 74, f. 1.

*Hab.* Mediterranean.

An unusually sharply-angled species, densely concentricly striated, and darkly stained with brown-purple.

Species 57. (Mus. Cuning.)

**MYTILUS CURTUS.** *Myl. testis triangu. subtriangul. post. gibbosa, postice obtuse arcuata, carinae pons, rivo, latera granulato-arcuatae, carinae fimbriatae.*

**THE CURT MYTILUS.** Shell triangularly oblong, somewhat curved, posteriorly dully gibbous impressed, radiately granularly edged, olive-yellow.

SAY, Journ. Acad. Nat. Sci. Philadelphia, v. 1, p. 270.

*Fig. 100* —

On simple, rather gibbous form, granularly ridged throughout.

Species 58. (Mus. Cuming.)

**MYTILUS CHARPENTIERI** *Myt. testis oblongis, postice gibbosissimum, postice concave striatissimum, radiis concentricis, nullisque densis fuscousis; alba; et semita*

**CHARPENTIER'S MYTILUS** — Shell oblong, posteriorly very gibbous, posteriorly concavely impressed and obscurely angled, densely fuscous-yellow ridged throughout; fuscous-yellow.

**PUSSER, MS.** in Mus. Cuming. p. 47

*Hab.* —

A densely-ridged fuscous-yellow species, remarkable for its extremely gibbous growth.

Species 59. (Mus. Cuming.)

**MYTILUS USTULATUS**. *Myt. testis angustis oblongis, gibbosis, postice truncata, cressis radiis s. latioribus, radiata lineata, testis substriatissimis, fuscousis; alba; nigricante-fusca lineata.*

**THE SCORCHED MYTILUS**. — Shell narrowly oblong, gibbous, posteriorly impressed, rather attenuated towards the umbos, radiately ridged, ridges rather distant, fuscous, whitish, stained with blackish-brown.

**LAMARCK** *Anat. sans vert.* vol. XI. p. 49.

*Hab.* —

On rather narrow, somewhat growth, rounded with fuscous ridges, which are rather more than commonly distant.

Species 60. (Mus. Cuming.)

**MYTILUS GLOMERATUS** *Myt. testis oblongo-ovata, subulata, postice concavely striatissimum; radiis concentricis.*

**THE GLOBELED MYTILUS** — Shell oblongo-ovate, rather oblique, concentrically finely wrinkled; deep blue-black.

**GOULD, MS.** in Mus. Cuming. p. 47

*Hab.* —

Named *p. glomeratus* from its habit of attaching itself in small dense clusters.

Species 61. (Mus. Cuming.)

**MYTILUS GRANULATUS** *Myt. testis oblongo, truncato, postice concavely striatissimum, radiata lineata, testis concavely striatissimis, alba; et semita.*

**THE GRANULED MYTILUS** — Shell oblong, very gibbous, posteriorly concavely impressed, radiately ridged, ridges conspicuously granulated; olive-yellow.

**HALL**, *Recent Bivalve Shells*, p. 216

*Hab.* — South America.

This shell partakes so much of the form and colour of *M. Charpentieri*, that it would seem to be a variety of that species. It is however remarkable for its very defined granulated sculpture.

## MYTILUS.

Species	Plate	Species	Plate		
<i>amurensis</i> , Lamarek	VIII	33	hirtus, <i>Lamarck</i>	III	8
<i>atlanticus</i> , <i>Dunker</i>	XI	55	horridus, <i>Dunker</i>	III	9
<i>afro</i> , <i>Quoy</i>	II	3	<i>impressus</i> , <i>Permanet</i>	VIII	33
<i>algericus</i> , <i>Chemnitz</i>	II	4	<i>ketosis</i> , <i>Kuster</i>	IX	10
Americanus ( <i>Dreissena</i> ), <i>Amblyden</i>	X	17	latus, <i>Lamarck</i>	IV	12
Americanus ( <i>Dreissena</i> ), <i>Recluz</i>	X	15	lavallonus, <i>D'Orbigny</i>	XI	74
atropurpureus, <i>Dunker</i>	IV	11	Magellanicus, <i>Chemnitz</i>	VI	22
angustus, <i>Philippi</i>	IX	35	Menkenius, <i>Philippi</i>	VII	26
aurivatus, <i>Quoy</i>	IX	41	nidivus, <i>Pala</i>	XI	56
<i>californicus</i> , <i>Lamarck</i>	IX	42	Nobilianus ( <i>Dreissena</i> ), <i>Recluz</i>	X	51
<i>canalis</i> , <i>Lamarck</i>	VI	20	Novius, <i>Dunker</i>	IX	38
Californicus, <i>Chemnitz</i>	I	2	Nodularius, <i>Chemnitz</i>	IX	42
Chargantieri, <i>Dunker</i>	XI	58	obesus, <i>Dunker</i>	VIII	31
Chilensis, <i>Philippi</i>	VI	21	obscurus, <i>Dunker</i>	VIII	30
cochlearis ( <i>Dreissena</i> ), <i>Koster</i>	X	50	<i>opimus</i> , <i>Lamarck</i>	VII	28
compressus, <i>Philippi</i>	II	5	ovalis, <i>Lamarck</i>	IV	14
crassus ( <i>Syllips</i> ), <i>Dunker</i>	VII	25	pellio-punctatus, <i>Dunker</i>	V	19
curvatus, <i>Syllips</i>	XI	57	<i>pellucidus</i> , <i>Permanet</i>	VIII	35
Cumingianus, <i>Recluz</i>	XI	52	Perna ( <i>Mya</i> ), <i>Lamachus</i>	VI	23
curviflorus, <i>Recluz</i>	V	18	pilosus, <i>Recluz</i>	VIII	35
curvatus, <i>Dunker</i>	XI	53	polymorphus, <i>Pallas</i>	X	19
<i>deltoideus</i> , <i>Gray</i>	VIII	33	<i>retusus</i> , <i>Lamarck</i>	VIII	33
Danungensis ( <i>Dreissena</i> ), <i>Recluz</i>	X	18	Rossmasleri ( <i>Dreissena</i> ), <i>Recluz</i>	X	15
<i>Dunker</i> , <i>Recluz</i>	V	17	rostratus, <i>Dunker</i>	V	15
edulis, <i>Lamarck</i>	VIII	33	sagittatus, <i>Pala</i>	VIII	33
elongatus, <i>Chemnitz</i>	VI	23	Sallei ( <i>Dreissena</i> ), <i>Recluz</i>	X	11
exilis ( <i>Fohlgren</i> ), <i>Wiegman</i>	IV	13	sinuatus, <i>Dunker</i>	V	16
exilis, <i>Lamarck</i>	IV	10	sinuatus, <i>Chemnitz</i>	VII	28
flavus, <i>Pala</i>	VIII	33	<i>stictus</i> , <i>Bonap</i>	III	7
Gallo-penninus, <i>Recluz</i>	IX	39	<i>subapertus</i> , <i>Willamson</i>	VIII	33
glaucatus, <i>Quoy</i>	XI	60	tenchicus, <i>Recluz</i>	X	16
gracilis, <i>Recluz</i>	VIII	32	tenostriatus, <i>Dunker</i>	IX	37
granulatus, <i>Hutchley</i>	XI	61	totius, <i>Dunker</i>	III	6
Guineyanus, <i>Dunker</i>	VII	29	undulatus, <i>Lamarck</i>	II	1
<i>Hapoid</i> , <i>De Baur</i>	X	49	ustulatus, <i>Lamarck</i>	XI	59
humboldtii, <i>Syllips</i>	III	7	<i>variosus</i> , <i>De Costa</i>	VIII	33
insperatus, <i>Lamarck</i>	VIII	33			



MONOGRAPH

OF THE GENUS

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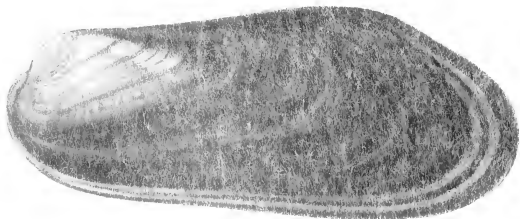
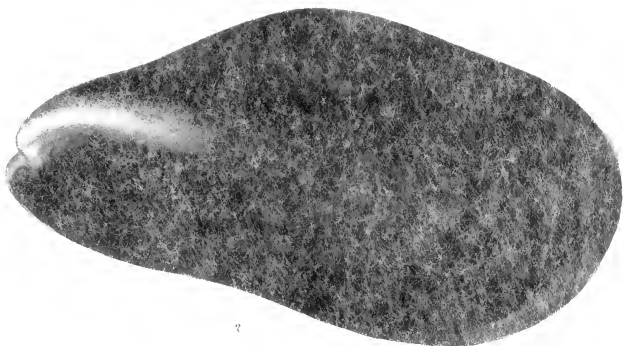
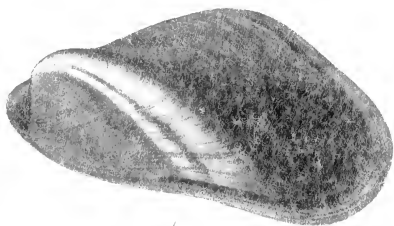
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# MODIOLA.

PLATE I.

Genus MODIOLA, F. Sarsk.

*Testis oblonga, truncata, pinnaculis ventricosa, submarginata, umbones leviter convexi, radiatim striati, latere anteriori saepe expanso, postice contracto. Corbis linearis, saepe tenuiter marginata, submarginata. Ventricea umbonibus in postice, sublat. pinn.*

Shell oblong, pinnate, more or less ventricose, with the umbones small, rather swollen, not terminal, anterior side often expanded, posterior arched, contracted.

Hinge linear, with the ligament marginal and partially internal. Muscular impression compound, subterminal.

The typical distinction between *Mytilus* and *Modiola* consists in the latter having a lighter and more cylindrically oblong shell, with the umbones rounder and not terminal, in consequence of the posterior extremity of the shell protruding beyond them. This generic form is, however, subject to more decided variation than *Mytilus*, and excellent subdivisions have been established under the name *Modiolina*, *Cruciatia* or *Littorina*.

*Modiola* is somewhat more numerous in species than *Mytilus*, omitting even the *Littorinaria*, which form an extremely characteristic group, and they are often beautifully painted while less sculptured. Their range of habitation is equally widely spread.

Species 1. (Mus. Cuming.)

MODIOLA PHILIPPINARUM. *Test. testis elongato-trapeziformis, truncata, pinnaculis leviter convexis, radiatim striata, latere anteriori saepe expanso, postice contracto. Corbis linearis, saepe tenuiter marginata, submarginata. Ventricea umbonibus in postice, sublat. pinn.*

THE PHILIPPINE MODIOLA. Shell oblong-trapeziform, ventricose, anteriorly somewhat expanded concentrically densely thread-striated, light-chestnut, yellow-tawny.

HANLEY. *Journal of the British Museum*, p. 235.  
*Hab.* Philippine Islands.

This interesting species, from the Philippine Islands, is very much the typical form of the European *M. modiolina*.

*Modiolina*. It is more ornamented throughout with raised thread-like striae, but they exist apparently only in the epidermis.

Species 2. (Mus. Cuming.)

MODIOLA MODIOLINA. *Test. testis oblongo, subtrapeziformis, truncata, pinnaculis ventricosis, latere anteriori obsolete emarginato-striata; latere posteriore contracto.*

THE BUSHY MODIOLA. Shell oblong, somewhat trapeziform, ventricose towards the umbones, smooth or obsoletely wrinkled-striated, dark-chestnut.

*Mytilus aculeatus*, Linnaeus, Syst. Nat. p. 1158.

*Mytilus subulicatus*, Pennant.

*Mytilus curvicaudatus*, Pennant.

*Mytilus curvicaudatus*, Da Costa.

*Modiola Philippina*, Lamour.

*Modiola subulicatus*, Turon.

*Modiola vulgaris*, Fleming.

*Hab.* North Atlantic shores of Europe and America.

This, the largest species of the genus, well known on our own shores, is common throughout the whole of Northern Europe and America.

Species 3. (Mus. Cuming.)

MODIOLA VAGINA. *Test. testis cylindrico-oblongo, recta, truncata, subulicosa, concentricis lineis subulicatis striata, radiatim truncata et obsolete subulicosa-striata, latere anteriori contracto.*

THE SLIATH MODIOLA. Shell cylindrically oblong, straight, thin, rather depressed, concentrically densely very finely striated, radiately linearly striated and obsoletely wave-wrinkled, shining-chestnut.

LAMOUR. *Voyage sans vert* vol. ii. p. 22.

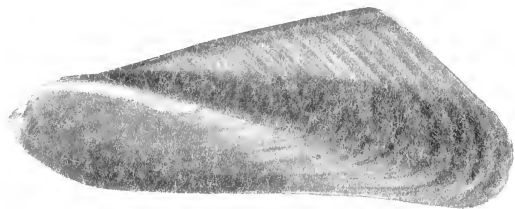
*Mytilus vaginatus*, Rumphius.

*Hab.* Philippine Islands; Cuming.

A peculiarly straight, cylindrically oblong species, of slight substance, with a delicate silky surface of a shining-chestnut colour.







# MODIOLA.

PLATE II.

## Species 4. (Mus. Cuming.)

*MODIOLA ELONGATA.* *Mod. testâ elongata-irapezziformi, oblongata, tenui, latere postico subimpresso-arcuato, antice carinato-producto, striale-castanea, olivaceo-rosea rubâ, multique concentricè striatâ.*

THE ELONGATED MODIOLA. Shell elongately trapeziform, rather narrow thin, posterior side rather impressly arched, anterior produced into a compressed keel shining chestnut, stained with olive-yellow, concentrically striated throughout.

SWAINSON, EXOTIC Conchology, Second Edition, p. 34, t. 5.  
*Hab.* Moluccas.

A delicate glossy fulvous-chestnut shell of light sulcations, elegantly produced in form.

## Fig. 5. (Mus. Cuming.)

This fine shell proves on examination to be a specimen of very advanced growth of *M. laevis*, described at PL. IV.

## Species 6. (Mus. Cuming.)

*MODIOLA NITIDA.* *Mod. testâ elongato-oblongâ, subtriangulata, tenui, striâ concentricè striatâ, albentri-castanea, fulco lacto, latere postico recto, antice carinas extremitatem subglobuliferaui.*

THE SHINING MODIOLA. Shell elongately oblong some-

what curved, rather thin, swollen, concentrically striated, shining-chestnut, fulvous-tinged, posterior side straight, anterior a little fan-shaped towards the extremity.

*Hab.* Port Essington, New Holland.

This pretty glossy species resembles *M. elongata*, but more foreshortened, with the anterior side less produced into a keel.

## Species 7. (Mus. Cuming.)

*MODIOLA ALBICOSTA.* *Mod. testâ subirigmo-oblongâ, subtriangulâ, rubâ tenui, latere postico subimpresso-arcuato, antice superne producto, quasi alato, striale-castanea, obscure fulco-radiatâ.*

THE WHITE-RIBBED MODIOLA. Shell somewhat triangularly oblong, rather solid, very much swollen, posterior side rather impressly arched, anterior side produced at the upper part, as if winged: dark-chestnut obscurely fulvous-rayed.

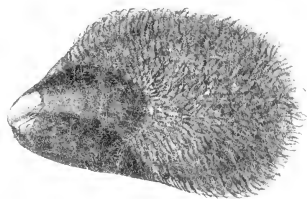
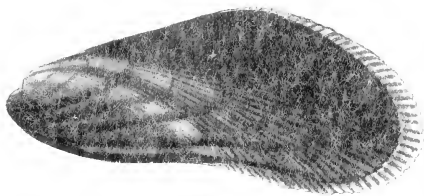
LAMARCK, Anim. sans vert. vol. vii. p. 19.  
*Hab.* Tasmania.

We are indebted to the beautiful work of M. Delessert for being able to identify this species. The character which suggested to Lamarck the name "white-ribbed" arose apparently from the epidermis being worn off the prominent central ridge of the shell.









## MODIOLA

PLATE III

SPECIES 8. *M. (Modiola) . . .*

FIGURE 10. VENTRAL. *Modiola (Modiola) . . .*  
 FIGURE 11. VENTRAL. *Modiola (Modiola) . . .*  
 FIGURE 12. VENTRAL. *Modiola (Modiola) . . .*  
 FIGURE 13. VENTRAL. *Modiola (Modiola) . . .*

FIGURE 14. MODIOLA. Shell somewhat triangularly  
 oblong, posteriorly impressly curved, anteriorly four-  
 sidedly produced and fan-like dilated, very closely  
 finely grooved, the intermediate ridges being rather  
 chestnut-black, fringed with olivaceous

AMERICAN ANNUAL SHELLS, Vol. XII, p. 22  
*Modiola . . .*  
*Modiola . . .*  
 United States

FIGURE 15. obliquely species, closely sculptured through-  
 out the raised ridges, excavately grooved in the interior

Species 9. (Fig. 9 and 10. Mus. Cuming)

FIGURE 16. VENTRAL. *Modiola (Modiola) . . .*  
*Modiola (Modiola) . . .*  
*Modiola (Modiola) . . .*

FIGURE 17. GLAUCOUS MODIOLA. Shell triangularly fan-shaped,  
 rather compressed, concavely nearly three-  
 sided, bright chestnut, densely bearded towards the  
 margin with bristly hairs.

FIGURE 18. VENTRAL. *Modiola (Modiola) . . .*

*Modiola . . .*  
*Modiola . . .*

FIGURE 19. Seals of Europe

A fan-shaped compressed sp. . . .  
 of the character of *Modiola*, covered with . . .  
 bristly beard.

SPECIES 11. (Mus. Cuming)

FIGURE 20. VENTRAL. *Modiola (Modiola) . . .*  
*Modiola (Modiola) . . .*  
*Modiola (Modiola) . . .*

FIGURE 21. SPICY MODIOLA. Shell oblong, slightly arch-  
 ed, posteriorly broadly impressed, very gibbous, ante-  
 riorly slopingly compressed, margin obtusely angled  
 towards the upper part, dark chestnut, sparingly  
 bearded towards the margin with bristly hairs.

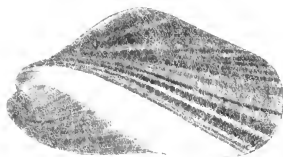
COXWOLD, Journ. Acad. Nat. Sci. Philadelphia, 1847, vol. vi, p.  
 242

FIGURE 22. Galapagos Islands. Cuming. California. Nuttall  
 Marillian. Carpenter

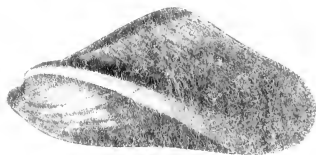
This closely differs from the preceding species in having  
 more the typical form of the genus, more oblong and gib-  
 bous, with the anterior margin more slopingly produced.  
 It appears also to be less densely bearded.







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# MODIOLA.

## PLATE IV.

Species 12. (Mus. Cuning.)

**MODIOLA VACILLA.** *Mod. testis by latro-occultatione, subovalis, subquadrata, striata, tenuis, fulvo-olivacea, subconcolorata, sordide flavo-fulva, lobis posterioribus, striatis, striatopunctatis, et reticulatis.*

**111. (Cuning.)** Modiola. Shell cylindrical-oblong, somewhat spherically gibbous, rather than fulvous, and nearly concentrically throated; striated, somewhat coarser at side, contracted anteriorly, and slightly angulated, which is slopingly angled at the umbilicus.

**112. (Cuning.)** MS. Mus. Cuning.

*Mod. Vacilla.*

The dorsal surface is somewhat flattened by the heavy, concentric, striated, and angulated areas of raised ribs, which are more numerous on the sides.

Species 13. (Mus. Cuning.)

**MODIOLA VACILLA.** *Mod. testis by latro-occultatione, subovalis, subquadrata, striata, tenuis, fulvo-olivacea, subconcolorata, sordide flavo-fulva, lobis posterioribus, striatis, striatopunctatis, et reticulatis.*

**113. (Cuning.)** Modiola. Shell cylindrical-oblong, somewhat spherically gibbous, rather than fulvous, and nearly concentrically throated; striated, somewhat coarser at side, contracted anteriorly, and slightly angulated, which is slopingly angled at the umbilicus.

**114. (Cuning.)** MS. Mus.

*Mod. Vacilla.* *Mod. Vacilla.*

Species 14. (Mus. Cuning.)

**MODIOLA TRITIA.** *Mod. testis by latro-occultatione, subovalis, subquadrata, striata, tenuis, fulvo-olivacea, subconcolorata, sordide flavo-fulva, lobis posterioribus, striatis, striatopunctatis, et reticulatis.*

**115. (Cuning.)** Modiola. Shell oblong, rather than ventricose, posterior side somewhat contracted, anterior slopingly produced, everywhere very finely concentrically striated, only sordid white, or less dyed with reddish ochraceous.

**116. (Cuning.)** MS. Mus. Cuning, vol. VII, p. 18.

*Mod. Tritia.*

Generally marked off by its prettily-rayed painting,

which, however, as in the specimen figured on Pl. II Fig. 5, becomes more close in w. age.

Species 16. (Fig. 9. Mus. Cuning.)

**MODIOLA METACALFEI.** *Mod. testis subtriangulari, angulata, posteriori latro-occultatione, striata, tenuis, fulvo-olivacea, subconcolorata, sordide flavo-fulva, lobis posterioribus, striatis, striatopunctatis, et reticulatis.*

**METCALFE'S MODIOLA.** Shell somewhat triangularly-oblong, narrow, ventricose, smooth or very finely striated, posterior side straight, a little contracted, anterior angularly produced into a compressed wing, yellowish-chestnut, with a bluish-purple band, radiately descending from the umbilic, sometimes covered towards the margin with a hairy epiderm.

**HASSELL.** *Proc. Zool. Soc.* 1844, Cat. Recent Bivalv.

Shells, p. 225.

*Mod. Philippine Islands.* Cuning.

The elegant keel-winged form of this shell is peculiar, but its chief characteristic is the presence of a conspicuous broad purple band, radiating from each umbilic.

Species 17. (Mus. Cuning.)

**MODIOLA BRANTIIENSIS.** *Mod. testis by latro-occultatione, subovalis, subquadrata, striata, tenuis, fulvo-olivacea, subconcolorata, sordide flavo-fulva, lobis posterioribus, striatis, striatopunctatis, et reticulatis.*

**Y. BRANTIIAN MODIOLA.** Shell triangularly fan-shaped, posterior side somewhat contracted, smooth or very finely striated, not clear keeled, then broadly dilated, and concentrically throated; posterior area fulvous-chestnut, anterior right metastell-green, freckled with dots and minute flavous lines.

**BRANTIA.** *Czech. Cab. vol. II, pl. 205 f. 2020 and 2021.*

*Mod. Brantiana.* Lamarel.

*Mod. Brantiana.* Sowley.

*Mod. Brant.*

This very pretty species may be readily distinguished by its striking contrast of colour, the posterior area being a glossy fulvous-chestnut almost smooth, while the anterior is a bright pale metastell-green, with the striae raised in thread-like ridges.









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# MODIOLA.

PLATE V.

Species 18. (Mus. Cuning.)

**MODIOLA (MODIOLA) MODIOLA.** *Mod. testis oblonga, gibbosa, tenui. Latere postico brevissimo, antice subulobuliformi, medio obtuse angulata, ad angulum subulobuliforme plicato-corrugata, laterali laevi, albida.*

**THE WAVY MODIOLA.** Shell oblong, gibbous, thin, posterior side rounded, anterior somewhat fan-shaped, obtusely angled in the middle, rather obscurely plicately wrinkled, yellowish-brown, shining.

*Concha nodulata*, Parker, Proc. Zool. Soc. 1856, p. 343.  
*Hab.* Molucca.

A thin, shining, yellowish-brown shell, in which the angular ridge, descending from the umbos, is faintly swollen with wavy folds.

Species 19. (Mus. Cuning.)

**MODIOLA ELEGANS.** *Mod. testis oblonga, tenui, laevigata, latere postico brevissimo, convexo, antice subulobuliformi dilatata, pellucidocrescente, antice purpureo fimbriata et transversa albidata.*

**THE ELEGANT MODIOLA.** Shell oblong, thin, smooth, posterior side very short, convex, anterior somewhat fan-like dilated; transparent-greenish, stained and transversely waved anteriorly, with purple

GRAY, Spéologie Zoologica, pl. 6, f. 11.

*Molucca*, West Africa.

*Hab.* Gambia, West Africa.

A delicate transparent green shell, rayed with irregular rose lines, crossed concentrically with purple-waved bands.

Species 20. (Mus. Cuning.)

**MODIOLA SETIGERA.** *Mod. testis oblonga, gibbosa, dense pubescente fimbriata, latere ad latere postico brevissimo laevi laevigata nitida sub rugata, medio, epidermide olivaceo-castanea nitida, antice scabra.*

**THE BRISTLY MODIOLA.** Shell oblong, gibbous, densely rayed with ridges, ridges interrupted on the posterior side with a broad, smooth, shining band, whitish, covered with an olive-yellow epidermis, bristled anteriorly.

*Latvada setigera*, Parker, Proc. Zool. Soc. 1856, p. 344.

*Hab.* ———

Rayed throughout with closest ridges and grooves, rather gibbous in form, finely bristled anteriorly.

Species 21. (Mus. Cuning.)

**MODIOLA AUSTRALIS.** *Mod. testis ovato-fimbriiformi, latere postico brevissimo, antice late dilatata, medio convexo, concentricè striata; latero-umbonata, ad angulum spatiosa bulbata.*

**THE AUSTRALIAN MODIOLA.** Shell ovately fan-shaped, posterior side very short, anterior broadly dilated, convex in the middle, concentrically striated; yellowish-chestnut, sparingly bearded towards the margin.

GRAY, Appendix to King's Voyage.

*Hab.* North Australia; Jukes.

Remarkable for the very short contracted growth of the posterior side, and convexly dilated form anteriorly.

Species 22. (Mus. Cuning.)

**MODIOLA SENHAUSI.** *Mod. testis suboblongo-fimbriiformi, laevigata, tenui, latere postico brevi, subulobuliformi, medio compressè dilatata; alba, convexo radiati et transversè ovalitati sub epidermide tenui lutescente pellucida.*

**SENHAUS'S MODIOLA.** Shell somewhat fan-shaped, smooth, thin, posterior side short, rather attenuated, anterior compressly dilated, white, rayed and transversely waved with pale rose beneath a thin, yellowish-transparent epidermis.

*Hab.* Omsak, Captain Benson.

An extremely delicate species, most beautifully sculptured and coloured.

Species 23. (Fig. 23 and 24, Mus. Cuning.)

**MODIOLA NITENS.** *Mod. testis elongato-epidermide, nigrescente, postice attenuato-umbonata, radiis gibbosis et latero-angulata; laterale vivacenter olivaceo, nitente.*

**THE SHINING MODIOLA.** Shell elongately trap-ziform, narrow, attenuately tumid posteriorly, gibbously distorted, angled, dark greenish-olive, shining.

CARPENTER, Cat. Reagen. Coll. in Brit. Mus.

*Hab.* California.

A dark, greenish-olive, narrow, boat-shaped shell, with the posterior sides curiously gibbously distorted.







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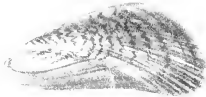
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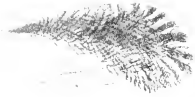
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# MODIOLA.

PLATE VI

Species 25. (Mus. Cuning.)

**MODIOLA PLECIATA.** *Mod. testâ oblongo-naveiformi, tenui-ridâ, latere postico brevi, tumidiorulo, rotundato, lris baculis subdistantibus rugato, antice compressè dilata, margine angulato-punctato; subpellucidâ, epidermide tenui corariâ olivaceo-castaneaâ nitente indutâ.*

**THE PLECIATED MODIOLA.** Shell oblong-boat-shaped, rather thin, posterior side short, rather swollen, rounded, wrinkled with rather distant short ridges, anterior side compressedly dilated, angularly produced at the margin; semitransparent, covered with a shining, olive-chestnut, horny epidermis.

LAMARCK. *Animal sans vert.* vol. vii. p. 25.

*Mollus pleciatus*, Gmelin.

*Hab.* West Africa.

A very light, broad, rather compressed shell, delicately obliquely wrinkled.

Species 26. (Mus. Cuning.)

**MODIOLA JAPONICA.** *Mod. testâ cylindraceo-oblongâ, angustâ, tenui, lateribus reticulatis, postico brevissimo, attenuatâ; pellucido-virescente, rufino-purpureo concentricè nodatâ.*

**THE JAPAN MODIOLA.** Shell cylindrically oblong, narrow, sides rounded, posterior very short, attenuated, transparent green, concentrically waved with rose-purple.

*Testis a Japoniis*, Dauber, *Pro Zool. Soc.* 1856, p. 363.

*Hab.* Japan.

A slender shell, very elegantly painted.

Species 27. (Mus. Cuning.)

**MODIOLA ARCTATA.** *Mod. testâ arcuato-angustâ, subangustâ, cordis rotule gibboso-angulata, latere postico parvo, antice subglobulata; pellucida-coriariâ, purpureo concentricè nodatâ.*

**THE ARCHED MODIOLA.** Shell arcuately elongated, rather narrow, strongly gibbously angled in the middle, posterior side small, anterior somewhat fan-shaped, transparent horny, irregularly waved with purple.

HANLEY. *Proc Zool. Soc.* 1844.

*Modiola arcuata*, Gmelin.

*Hab.* Singapore and Philippine Islands.

Chiefly distinguished by its arched form and gibbously angled growth. The painting consists of purple vein-like stains of irregular pattern, upon a semitransparent horny ground.

Fig. 28. (Mus. Cuning.)

**MODIOLA RHOMBOIDEA.** *Mod. testâ elongato-rhomboidâ, tenui, latere postico brevi, rotundato, antice vix oblongo, margine compressè angulato; nitente luteo-castaneaâ, postico obscure saturatè fasciatâ.*

**THE RHOMBOID MODIOLA.** Shell elongately rhomboid, rather thin, posterior side short, rounded, anterior very elongated, compressedly angled at the margin; shining yellowish-chestnut, obscurely darker banded on the posterior side.

HANLEY. *Species Recent Shells.*

*Hab.* The Gambia, West Africa.

An elegantly-formed species of very simple character, beyond the concentric lines of growth inclining to become corrugated on the median angular ridge and beneath the umbos.

Fig. 29. (Mus. Cuning.)

The specimen here figured is a fine characteristic example of *M. elegans*, represented in the preceding Plate.

Species 30. (Mus. Cuning.)

**MODIOLA ARBORESCENS.** *Mod. testâ subcylindraceo-oblongâ, tenui, compressè convexâ, larigatâ, lateribus reticulatis; intescente-albâ, ferruginoso-larvâ, antice lris leucomis nigricantibus irregulariter densè divaricatis reticulatâ.*

**THE ARBORESCENT MODIOLA.** Shell somewhat cylindrically oblong, thin, compressedly convex, smooth, sides rounded; yellowish-white, stained with rust, anteriorly irregularly densely divaricately netted with fine blackish lines.

*Mytilus arborescens*, Chemnitz, *Coch.* vol. ii. pl. 198 f. 2016-17.

*Modiola picta*, Lamarck.

*Hab.* West Indies.

Peculiarly distinguished by its arborescent pattern of network on the anterior side.

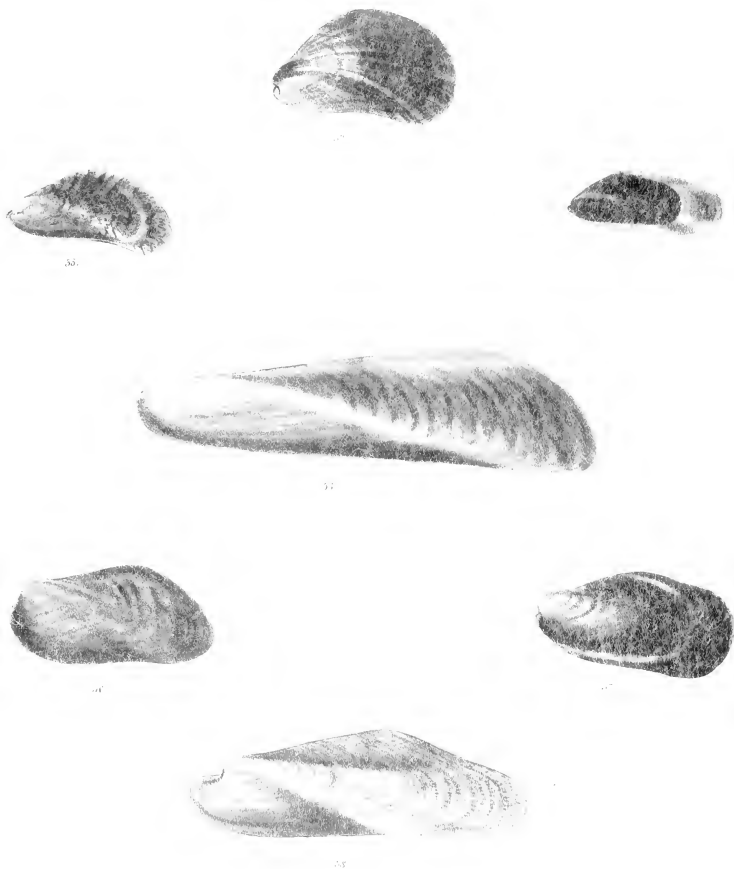
Fig. 31. (Mus. Cuning.)

This dark-coloured shell, tinged on the anterior side with bronze-green, is the typical *M. Brasilensis* from Brazil. The light-coloured specimen represented at PL IV Fig. 17, is a variety from Guayaquil.









# MODIOLA.

PLATE VII.

Species 32. (Mus. Cuming.)

**MODIOLA CUPRINAECULUM.** *Mol. testâ subquadrata-ovata, arcuata, latere postero brevissimo, sinuato-costato, antice late globuliformi, medio dense concentricè striatâ, fulvescente, rotâ limboâbus livido-auratis, postâ, rotâ marginâ, fuscâ tipâ.*

**THE RUDDLE MODIOLA.** Shell somewhat squared oblong, curved, posterior side very short, somewhat beak'd, anterior broadly fan-shaped, densely concentrically striated throughout; yellowish, pointed with livid-blue linear rays, stained with brown towards the margin.

*Valvâ's gasteraculina.* Dunker, Pro. Zool. Soc. 1856, p. 361.

*Hab.* ———

Partaking very much of the typical character of *Mylia*, and especially distinguished by its painting of livid-blue linear rays upon a yellowish ground.

Species 33. (Mus. Cuming.)

**MODIOLA SUBGATA.** *Mol. testâ suboblongatâ tenui, gibbosa, posticè attenuatâ, antice subangulatè productâ, bispinata, costâ crassa et costâ et radiatâ.*

**THE STRAIGHT MODIOLA.** Shell somewhat elongated, thin, gibbous, posteriorly attenuated, anteriorly rather narrowly produced, smooth, prettily stained and variegated with green.

*Mollus. singularis.* Hanley, Pro. Zool. Soc. 1844.

*Hab.* Philippine Islands.

A thin shell, of rather narrow gibbous growth, prettily pointed with rich green, which, on the anterior side, is disposed in oblique bands.

Species 34. (Mus. Cuming.)

**MODIOLA TRISTIS.** *Mol. testâ suboblongatâ, tenui, posticè trigono-triangulari, antice costâ, compressâ, bispinata; fulvo-obscurâ, aurata.*

**THE SAD MODIOLA.** Shell somewhat elongated, thin, posteriorly triangularly attenuated, anteriorly straight, compressive, smooth; fulvous-chestnut, shining.

*Valvella tristis.* Dunker, Pro. Zool. Soc. 1856, p. 362.

*Hab.* Chusan; Capt. Benson.

A light shell, of semitransparent substance, remarkable for its straightly-produced *Valvella*-like growth anteriorly.

Species 35. (Mus. Cuming.)

**MODIOLA SPECIOSA.** *Mol. testâ longissimâ, rectâ, latere postico brevi, rotâ subata, parva gibbosa, antice elongato, gradatâ latiori, medio obliquè obtusè angulatâ, pallidobulbâ, epidermide crassa decolorâ, posticè fulcè costâ concentricâ indutâ, intus integerrimè.*

**THE BEAUTIFUL MODIOLA.** Shell very long, straight posterior side short, rounded, but little gibbous, anterior elongated, gradually broader, obliquely obtusely angled in the middle, covered with a deciduous-horny epidermis, which is fulvous on the posterior and bright green anteriorly, interior pearly.

*Valvella speciosa.* Dunker MS. in Mus. Cuming.

*Hab.* Tambor, Peru; Cuming.

A very rare and beautiful species, remarkable for its elongated form and richly-coloured horny epidermis.

Fig. 36. (Mus. Cuming.)

This shell proves to be the young of *M. nitida*, represented at Plate II. The anterior slope of the shell is characterized by a peculiar rippled structure.

Species 37. (Mus. Cuming.)

**MODIOLA SPLENDENS.** *Mol. testâ oblongo-ovata, tenui, antice, utrinque rotundata, latere postico gibboso, antice bispinata, costâ, vel antiposticè dense atom striatâ, fulcè et callosâ brevâ, partim iridescenti-ovata.*

**THE SPLENDID MODIOLA.** Shell oblong-ovate, rather thin, rounded at both ends, posterior side gibbous, smooth throughout, shining, or very minutely decussately striated; fulvous and dark-brown, partially iridescent-green.

*Mylia splendens.* Dunker etc. Zool. Soc. 1856, p. 378.

*Hab.* Peru.

A shining, horny shell, the surface being elegantly clouded with brown and fulvous intermixed with iridescent green.

Species 38. (Mus. Cuming.)

MODIOLA RECTA. *Mod. testâ elongatâ, medio oblique gibbosa-angulatâ, latere postico peculiariter compressè producto, antico subulatoformi; albidâ, epidermide corvâ, fulvâ nitente, anticè sparsim pilosâ indatâ, postico latè fusco-fasciatâ.*

THE STRAIGHT MODIOLA. Shell elongated, obliquely

gibbously angled in the middle, posterior side peculiarly compressly produced, anterior somewhat wing-shaped; whitish, covered with a shining horny epidermis, fulvous and sparsely hairy anteriorly, broadly brown-banded posteriorly.

CONRAD, Journ. Acad. Nat. Sci. Philadelphia, vol. vii p. 245, pl. 19. f. 1.

Hab. — ?

Distinguished by a strict peculiarity of form, the posterior side being curiously compressly produced, whilst the anterior side is wing-shaped, like some of the *Arctica*.





# MODIOLA.

PLATE VIII.

Species 39. (Mus. Cuming.)

**MODIOLA OPIFFA.** *Mod. testâ oblongo-cuneiformi, gibbâ, radiâtiâ sulcosâ, latere postico brevissimo, antico angulato-attenuato; costano-cornuâ, nitente, versus extrorsitatum adnata rubâ setigerâ.*

**THE ARTIFICIAL MODIOLA.** Shell oblong wedge-shaped, gibbous, radiately grooved, posterior side very short, anterior angularly attenuated; club-stunt-horny, shining, rudely bristled towards the anterior extremity.

SAV. Journ. Acad. Nat. Sci. Philadelphia, vol. iv. p. 369. *Hab.* Rio Janeiro.

Unlike most *Modiola*, this species is attenuated anteriorly, broadly gibbous, and roughly clothed at the extremity with an epidermis of bristly hairs.

Species 40. (Mus. Cuming.)

**MODIOLA VEXILLUM.** *Mod. testâ subtriangolo-flabelliformi, tenui, pellucidâ, latere postico subgibboso, antico angulato-repanso; foveolato, olivaceo-viridi, nitidâ undulatinâ pictâ.*

**THE FLAG MODIOLA.** Shell somewhat triangularly fan-shaped, thin, transparent, posterior side rather gibbous, anterior angularly expanded; yellowish, neatly painted with waves of olive-green.

*Fossils picta*, Dunker (not *M. picta*, Lamarek).

*Hab.* Australia.

Of thin, transparent substance, prettily variegated with concentric dark-green zigzag waves.

Species 41. (Mus. Cuming.)

**MODIOLA MAGELLANICA.** *Mod. testâ oblongo-trapezoidâ, posticè gibbosa, anticè subexpansâ, radiâtiâ sulcosâ; foveolata.*

**THE MAGELLAN MODIOLA.** Shell oblong-trapezoid, posteriorly gibbous, anteriorly rather expanded, radiately grooved throughout; light fulvous.

*Fossils Magellanica*, Dunker MS. in Mus. Cuming.

*Hab.* Straits of Magellan.

Of a light fulvous colour, rayed throughout with close-set longitudinal grooves.

Species 42. (Mus. Cuming.)

**MODIOLA PERFRAGILIS.** *Mod. testâ elongatâ, tenui, undique minutissimè decessatim striatâ, strus posticus longitudinalibus incisus, extrorsitatum posticus parvis, rotundatâ, anticè obliquâ; pellucidâ-albâ, nitente, virescente tinctâ.*

**THE VERY FRAGILE MODIOLA.** Shell elongated, thin, very minutely decessately striated, posterior longitudinal, striae engraved, posterior end small, rounded, anterior rather oblique; transparent-white, shining, tinged with pale-green.

*Fossils perfragilis*, Dunker, Pro. Zool. Soc. 1856. p. 362.

*Hab.* Moluccas.

In substance this shell is very thin, transparent-white, tinged with sea-green, and on examination with a lens, the surface will be found to be minutely decessately sculptured, the longitudinal striae being impressively engraved.

Species 43. (Mus. Cuming.)

**MODIOLA STRAMOS.** *Mod. testâ subtriangolo-oblonga tenui, semipellucidâ, concentricè tenuistriatâ, radiâtiâ ramoso-irradiâ, tris obtusis, subfoveosis, latere postico parvis, gibboso, antico triangolo-flabelliformi; lutescente-purpureo-rufa tinctâ.*

**THE BRANCHED MODIOLA.** Shell somewhat triangularly oblong, thin, semitransparent, concentrically finely striated, radiately branch-ridged, ridges somewhat flexuous, posterior side small, gibbous, anterior triangularly fan-shaped; yellowish, stained with purple-red.

HANLEY, Pro. Zool. Soc. 1844. p. 14.

*Hab.* Island of Mindanao, Philippines; Cuming.

A somewhat fragile shell, neatly rayed with obtuse ridges, which branch off in a flexuous manner, particularly in the anterior direction.

Species 44. (Mus. Cuming.)

**MODIOLA SUBPURPUREA.** *Mod. testâ elongatâ, subpellucidâ, leviculi, gibbosa, levigatâ, latere postico obtusè rotundatâ, anticè compressè productâ; nitente-olivaceâ, subpurpureâ.*

**THE PURPLISH MODIOLA.** Shell elongated, somewhat

arched, rather thin, gibbous, smooth, posterior side obtusely rounded, anterior compressly produced, shining-olive, tinged with purple.

*Valvella subpurpurea*, Dunker, Pro. Zool. Soc. 1856, p. 362.

*Hab.* Senegal.

Of a somewhat horny substance, and dark shining purple-olive colour.

Fig. 45. (Mus. Cuming.)

A full-grown specimen of *M. arcuata*, described at Plate VI Fig. 27.

Species 46. (Mus. Cuming.)

**MODIOLA TETAGNE.** *Mod. testis elongatâ, tenuissimâ, posticâ longitudinaliter striatâ, antice-cornuâ, antice concentricè striatâ, pallicè iridescente-aruginosâ. Lineis reflexatibus atque pallidè reticulatâ.*

**TETAGNE'S MODIOLA.** Shell elongated, very thin, posteriorly longitudinally striated, shining horny, anteriorly concentrically striated, beautifully iridescent-verdigris, faintly reticulated throughout with reddish lines. **SACCII**, Phil. Enum. Moll. Sicil. vol. ii. p. 51.

*Hab.* Mediterranean, and Galveston, Texas.

A beautifully delicate transparent shell, having the posterior side horny and shining, while the anterior is of a foliate verdigris-colour and iridescent.

Species 47. (Mus. Cuming.)

**MODIOLA SUBSULCATA.** *Mod. testis oblongâ, gibbosâ, an-*

*te contractâ, multigè dense sulcatâ, lateribus rotundis, antice subangulata; fulvo-castaneâ, posticè nitentè-cornuâ, antice sparsim setigerâ.*

**THE GROOVED MODIOLA.** Shell oblong, gibbous, contracted in the middle, densely grooved throughout, sides rounded, anterior slightly angled; fulvous-hestnut, posteriorly shining horny, anteriorly sparsely bristly.

*Valvella subsulcata*, Dunker, Pro. Zool. Soc. 1856, p. 364. *Hab.* Bay of Manila; Cuming.

The form of this species is rather gibbous throughout the entire surface being closely finely grooved.

Species 48. (Mus. Cuming.)

**MODIOLA GLABERRIMA.** *Mod. testis subtriangolo-elongatâ, tenui, levigatâ, nitentè, latere postico porco, attenuato, antice gradatim latiore, margine oblique rotundato; pallidè crivaceo-cornuâ, aruginè-purpureoscente radiatum lineatâ et concentricè strigatâ.*

**THE GLOSSY MODIOLA.** Shell somewhat triangularly ovate, thin, smooth, shining, posterior side small, attenuated, anterior gradually broader, obliquely rounded at the margin; pale olive-horny, radiately beaded and concentrically streaked with light bronze-purple.

*Valvella glaberrima*, Pro. Zool. Soc. 1856, p. 363. *Hab.* Sydney.

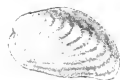
A very delicate horny shell, decussated with characteristic lines and bands of red-bronze purple.







60.



61.



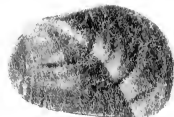
62.



63.



64.



65.



66.

# MODIOLA.

## PLATE IX.

### Species 49. (Fig. 62, Mus. Cuming.)

**MODIOLA STORA.** *Mod. test. oblongo-ovata, compressa, p. sin. et antice pedibus et tub. brevibus, p. post. et antice pedibus et tub. longioribus, p. post. et antice pedibus et tub. longioribus.*

A rather compressed species, of deep purple-black colour, belonging, together with the rest of the species in this Plate, to the genus *M. dilatata*, *Crevalle*, and *Lauisina* of authors.

**HAWLEY.** Brit. Marine Conch. Recent Bivalve Shells, p. 112.

*Lauisina stora*, Gray (Conch. Syst. pl. 100, f. 3.  
1796. Orustö Bay, Sweden.

A rather compressed species, of deep purple-black colour, belonging, together with the rest of the species in this Plate, to the genus *M. dilatata*, *Crevalle*, and *Lauisina* of authors.

### Species 50. (Fig. 63, r. l., Mus. Cuming.)

**MODIOLA CUMINGI, N. S.** *Mod. test. oblongo-ovata, convexa, p. sin. et antice gibba et lamella, longitudinalibus angustis, p. post. brevibus, p. post. et antice pedibus et tub. longioribus, p. post. et antice pedibus et tub. longioribus.*

**CUMING'S MODIOLA.** Shell oblong wedge-shaped, curved, rather than very gibbous and swollen anteriorly, finely striated and obviously angled, smooth in the middle, posteriorly obscurely ridged; the extremity fulvous-horny, sometimes variegated with reddish-brown.

**DUNKER, MS.** Mus. Cuming.

*Mod.* Morton Bay, Australia.

An extremely delicate species of a characteristic swollen wedge-shape.

### Species 51. (Fig. 64, Mus. Cuming.)

**MODIOLA IMPACTA.** *Mod. test. oblongo-ovata, convexa, p. sin. et antice pedibus et tub. brevibus, p. post. et antice pedibus et tub. longioribus, p. post. et antice pedibus et tub. longioribus.*

**FINE DENTEN MODIOLA.** Shell ovate wedge-shaped, swollen posteriorly and anteriorly ridged, ridges narrow, rather distant, excavated on both sides, smooth in the middle; dull white, horny, shining.

**HERMAN.** Naturforsch. vol. xvii. pl. 3. f. 5.

*Mytilus* var. *Mertens*.

*Mytilus* var. *lanceus*, Linnæus (out of Linnæus).

*Mod.* New Zealand (in sponge).

This, the finest species in the group, is not, as shown by M. Deshayes, the Linnæan *Mytilus lanceus*. It is larger and more gibbous, purple and purple-rayed within,

Chenutia gives a characteristic form to the species; vol. viii. pl. 50. f. 768.

### Species 52. (Fig. 65, Mus. Cuming.)

**MODIOLA DISCOIDES.** *Mod. test. oblongo-ovata, convexa, p. sin. et antice pedibus et tub. brevibus, p. post. et antice pedibus et tub. longioribus, p. post. et antice pedibus et tub. longioribus.*

**THE DIFFERING MODIOLA.** Shell oblong, somewhat wedge-shaped, swollen, anteriorly radiately ridged, ridges fine, rather obscure, posterior ridges stronger and more distant, middle smooth, olive, horny, shining.

*Mytilus* var. *lanceus*, Linnæus, Syst. Nat. p. 1159.

*Mod.* var. *serripes*, Le marec.

*Mod.* Massachusetts (found adhering to seaweed); Gould.

The anterior striae in this species are fine and close-set.

### Species 53. (Fig. 66, Mus. Cuming.)

**MODIOLA LEVIGATA.** *Mod. test. oblongo-ovata, convexa, p. sin. et antice pedibus et tub. brevibus, p. post. et antice pedibus et tub. longioribus, p. post. et antice pedibus et tub. longioribus.*

**THE SMOOTH MODIOLA.** Shell oblong-ovate, broader anteriorly, rather compressed, everywhere concentrically striated, slightly excavated in the middle, posterior extremity obscurely grooved; olivaceous-tan, horny, shining.

*Lauisina levigata*, Gray.

*Mod.* Greenland.

The peculiarity of this species consists chiefly in the anterior area not being longitudinally ridged.

### Species 54. (Fig. 67, Mus. Cuming.)

**MODIOLA NIXA.** *Mod. test. oblongo-ovata, convexa, p. sin. et antice pedibus et tub. brevibus, p. post. et antice pedibus et tub. longioribus, p. post. et antice pedibus et tub. longioribus.*

**THE TID MODIOLA.** Shell oblong-ovate, convexly compressed, anteriorly but little broader, everywhere densely finely grooved and ridged, middle ridges very fine, almost obsolete; chestnut-brown, umbos more or less eroded, porly.

**GOULD.** Invert. Massachusetts.

*Mod.* Massachusetts Bay; United States.

A rather compressed red-brown species, in which the posterior and anterior portions are sculptured alike, of densely-set striae.







# MODIOLA.

PLATE X.

Species 53. (Fig. 68, Mus. Cuning.)

**MODIOLA COSTULATA.** *Mod. testâ ovata, subquadrata, pediculis ovatis, posticâ et anticâ atriâ subobovata cuspidata, umbones parvis contractis.*

**THE FINELY-RIBBED MODIOLA.** Shell ovate, rather expanded, transparent horny, posteriorly and anteriorly minutely rather obscurely finely ribbed, umbones small, contracted.

Risso, Hist. Nat. d'Europe Mérid., vol. i., p. 324. f. 165  
*Crenella costulata*, Forbes and Hanley.

*Hab.* Southern Europe.

A small horny shell, with the umbones unusually contracted.

Species 56. (Fig. 69, Mus. Cuning.)

**MODIOLA NANA.** *Mod. testâ ovata, oblique ovata, tenui, umbonibus subrotatis; pediculis ovatis, lineis rufescentibus, radiatis.*

**THE DWARF MODIOLA.** Shell minute, obliquely ovate, thin, umbones somewhat beaked, transparent horny, variegated with reddish lines.

*Crassina nana*, Dunker, Pro Zool. Soc. 1856, p. 365.

*Hab.* Port Lincoln, Australia.

A very minute semi-transparent bronze-horny shell, variegated with fine zigzag reddish lines.

Species 57. (Fig. 70, Mus. Cuning.)

**MODIOLA SUBTOETA.** *Mod. testâ parvâ, ovata, oblongo-trapezoidâ, cœvus umbones attenuatâ, concentricè rugosa posticè albidâ, anticè nigricante-fusca.*

**THE TWISTED MODIOLA.** Shell rather small, slightly twisted, oblong-trapezoid, attenuated towards the umbones, concentrically wrinkled, posteriorly whitish, anteriorly blackish-brown.

*Modularia subtoeta*, Dunker, Pro Zool. Soc. 1856, p. 365.  
*Hab.* New Holland.

A narrow trapezoid shell, peculiarly slightly twisted.

Species 58. (Fig. 71, Mus. Cuning.)

**MODIOLA LIGNA.** *Mod. testâ oblonga, cœnicosa, subtiliusculâ, atriâ costatâ, concentricè rufâ striatâ, medio angustè contractâ, umbonibus globosissimis.*

**THE WOOD MODIOLA.** Shell oblong, ventricose, rather solid, shining chestnut, concentrically rudely striated, narrowly contracted in the middle, umbones globose swollen.

*Hab.* ———?

A rather solid ventricose shell, striated only concentrically with a smooth shining-chestnut epidermis.

Species 59. (Fig. 72, Mus. Cuning.)

**MODIOLA STRIATULA.** *Mod. testâ elongato-trapezoidâ, subangustâ, medio gibbosâ, tenuiculâ, valvule rotundâ dense tenuiculatâ; olivaceâ, nigro radiatâ fasciatâ.*

**THE STRIATED MODIOLA.** Shell elongately trapezoid, rather narrow, gibbous in the middle, rather thin, everywhere radiately densely finely ridged; olive, radiately banded with black.

HASLEY, Recent Bivalve Shells, p. 241.

*Hab.* Philippine Islands.

Of a peculiarly elongated trapezoid form, densely finely ridged throughout, the ridges radiating off wider and rather more distinct on the anterior margin.

Species 60. (Fig. 73, Mus. Cuning.)

**MODIOLA EMARGINATUS.** *Mod. testâ oblongo-trapezoidâ, anticè oblique subglobulatâ, posticè contractâ, subconiculatâ, radiatâ tenuiculatâ; nigricante-olivaceâ.*

**THE EMARGINATED MODIOLA.** Shell oblong-trapezoid, anteriorly obliquely somewhat fan-shaped, posteriorly contracted, rather channelled, radiately finely ridged, blackish-olive.

RENSON, MS. in Mus. Cuning.

*Hab.* ———?

Of more solid structure and less elongated form than the preceding species, not so strongly and regularly ridged.

Species 61. (Fig. 74, Mus. Cuning.)

**MODIOLA SUBCYTA.** *Mod. testâ elongatâ, anticè flobulatâ, marginè subangulatâ, compressâ, radiatâ dense fibrillosâ, medio gibbosâ, umbonibus prominentibus; cœrescente-olivaceâ, nigricante obscure fasciatâ.*

**THE GROOVED MODIOLA.** Shell elongated, anteriorly fan-shaped, slightly angled and compressed at the









# MODIOLA.

PLATE VI

Species 85. (Fig. 7, and 80, Mus. Cuming.)

**MODIOLA CIRCULARIS.** *Mod. testâ obliquè orbiculari, convexâ, umbonibus parvis, dorsato striatâ, striâ radiatâbus subtransversâ, ciliâ, interfluente laevi.*

**THE CIRCULAR MODIOLA.** Shell obliquely orbicular, convex, umbos small, dorsally striated, radiating striae rather divaricate; whitish, tinged with yellowish-brown.

MOLLER, Fauna Grœnlandiæ.

*Mptas dorsatus*, Montagu.

*Cercaria clypeus*, Brown.

*Hab.* Greenland, Møller. Orkney, MacAndrew.

A small pebble-like shell, with very much the aspect of a tile *Cardium*.

Species 86. (Fig. 79, Mus. Cuming.)

**MODIOLA RHOMBICA.** *Mod. testâ obliquè quadratâ, antè convexâ, retroproductâ, umbonibus gibbosâ, striâ angulatâ, radiâque radiatâbus transversâ; rursus ciliâ, ad partem antè.*

**THE RHOMBIC MODIOLA.** Shell obliquely quadrate, anteriorly broader and somewhat produced, very gibbous in the middle, obtusely angled, everywhere rayed with fine striae; pinkish-white, slightly transparent.

BERNELL, Zool. Jour. vol. iii. p. 222. Suppl. pl. 38, f. 1.  
*Hab.* Tunis. MacAndrew.

A rather solid gibbous, rhomboid shell of a pinkish tinge.

Species 87. (Fig. 81, Mus. Cuming.)

**MODIOLA MAJORATA.** *Mod. testâ obliquè rhomboidâ, ciliâ gibbosâ, striâ angulatâ post. et antè radiatâ, striâ radiatâ subtransversâ, ciliâ, interfluente, rursus ciliâ, antè, rursus ciliâ.*

**THE MAJOR MODIOLA.** Shell obliquely rhomboid, very gibbous, obtusely angled, rayed posteriorly and anteriorly with grooves and ridges, smooth in the middle; greenish-buff, tinged with rose.

COBBLES, Malabar, Bourne, p. 10.

*Modiola C.*, de Harley.

*Modiola P.*, de Harley.

*Cercaria majorata*, T. S. Hanley.

*Hab.* Britain.

An interesting small species, of the characteristic *Linnæa* group.

Species 89. (Fig. 82, Mus. Cuming.)

**MODIOLA GLANDULA.** *Mod. testâ suborbiculâ, orbiculatâ, convexâ, umbonibus parvis, dorsato striatâ, striâ longitudinalibus fortibus, subconvergentibus; radiâ obliquâ, epicheloniâ, interfluentâ.*

**THE ACORN MODIOLA.** Shell somewhat obliquely orbicular, convex, umbos small, dorsally striated longitudinal striae the stronger, rather divaricate; dull white, covered with a yellow epidermis.

TATE, Silliman's American Journal of Science, vol. xxxi. p. 367, f. 3.

A *Cardium*-shaped species, of the same typical form as *M. circaria*.

Fig. 83. (Mus. Cuming.)

A young specimen of *M. strepta*, Hanley, described in Pl. VII, Fig. 33.

Species 89. (Fig. 84, Mus. Cuming.)

**MODIOLA PECTINULA.** *Mod. testâ obovatâ, retroconvexâ, antè leviter, radiatâ ciliatâ, umbonibus subpressis, umbis interfluente.*

**THE LITTLE Pecten MODIOLA.** Shell obovate, ventrally convex, broader anteriorly, radiately ribbed, umbos rather prominent; yellowish-brown.

GOULD, Invertebrata of Massachusetts, p. 127, f. 85.

*Hab.* St. George's Bank, Bay of Massachusetts, United States.

Of a rather solid obovate *Cerithium*-like form.

Species 90. (Fig. 85, Mus. Cuming.)

**MODIOLA BULLA.** *Mod. testâ obliquè gibbosâ, ciliâ convexâ, streptâ, ciliâ leviter, excavatâ, radiatâ striatâ, gibbosâ, umbonibus parvis, convexis.*

**THE BELL MODIOLA.** Shell obliquely gibbous, glossy white, smooth beneath the lens very minutely rayed.

MODIOLA.—PLATE XI.

diately striated, very gibbous, umbones small incurved.

*Crenella bulla*, Dunker. Pro. Zool. Soc. 1856, p. 366.

*Hab.* Island of Luzon, Philippines; Cuming.

A delicate bubble-like glassy shell, of a very gibbous *Isocardia*-like form.

Species 71. (Fig. 86, Mus. Cuming.)

MODIOLA FABÆ. *Mod. testâ obovatâ, obliquè compressâ, radiatim tenuicostatâ; Umbis-purpureiscentis, epidermidè coracâ nitentè-castaneâ linteâ.*

THE BEAN MODIOLA. Shell obovate, obliquely com-

pressed, radiately finely ribbed; livid-purple, covered with a shining chestnut horny epidermis.

*Mytilus fabæ*, Fabricius, Gmelin, Syst. Nat. p. 3359

*Modiola arctica*, Leach.

*Hab.* Greenland.

Partaking very much of the character of Dr. Gould's *M. pectinosa*, but uniformly smaller and more compressed, with a dark, shining, horny epidermis.

Fig. 87. (Mus. Cuming.)

The shell here figured proves to be a young transparent example of *M. armorata*, Forbes, represented above by Fig. 84.

## MODIOLA.

albicaulis, <i>Lamarek</i> . . . . .	II	7	nitida, <i>Hayley</i> . . . . .	II	6
arista, <i>Boisler</i> . . . . .	IV	12	opifex, <i>Say</i> . . . . .	VIII	39
arcuata, <i>Hayley</i> . . . . .	VI	27	<i>Pappusa</i> , <i>Lamarck</i> . . . . .	L	2
arborescens ( <i>Alytilis</i> ), <i>Chenmitz</i> . . . . .	VI	30	perfoliata, <i>Goult</i> . . . . .	XI	69
Australis, <i>Gray</i> . . . . .	V	21	perfragilis ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	VIII	12
barbata, <i>Lamarck</i> . . . . .	III	9	Potagne, <i>Seacchi</i> . . . . .	VIII	16
Brasiliensis, <i>Chenault</i> . . . . .	IV	17	phascolium, <i>Philippi</i> . . . . .	X	63
bulba ( <i>Crenata</i> ), <i>Dunker</i> . . . . .	XI	70	Philippinarum, <i>Hayley</i> . . . . .	I	1
capax, <i>Goult</i> . . . . .	III	11	pieta, <i>Lamarck</i> . . . . .	VI	39
cicercula, <i>Meyer</i> . . . . .	XI	65	pieta, <i>Dunker</i> . . . . .	VIII	40
costulata, <i>Risso</i> . . . . .	X	55	plicata ( <i>Alytilis</i> ), <i>Gmelin</i> . . . . .	VI	25
Cumingiana, <i>Dunker</i> . . . . .	IX	50	plicatula, <i>Lamarck</i> . . . . .	III	8
discors ( <i>Alytilis</i> ), <i>Linn.</i> . . . . .	IX	52	<i>Poliana</i> , <i>Philippi</i> . . . . .	XI	67
elegans, <i>Gray</i> . . . . .	V	19	recta, <i>Goult</i> . . . . .	VII	38
elongata, <i>Seacchi</i> . . . . .	II	4	rhubra, <i>Boisler</i> . . . . .	XI	66
emarginatus, <i>Reese</i> . . . . .	X	60	rhubroidea, <i>Hayley</i> . . . . .	VI	28
fabri ( <i>Alytilis</i> ), <i>Fabricius</i> . . . . .	XI	71	seuiflora, <i>Sowerby</i> . . . . .	IV	17
flavida ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	X	61	Senhausii, <i>Reese</i> . . . . .	V	22
Fortunei ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	X	62	setigera ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	V	20
glaberrima ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	VIII	48	speciosa ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	VII	35
glanifida, <i>T. Gray</i> . . . . .	XI	69	splendens ( <i>Alytilis</i> ), <i>Dunker</i> . . . . .	VII	37
gubernaculum ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	VII	32	striatula, <i>Hayley</i> . . . . .	X	59
<i>Guganensis</i> , <i>Lamarck</i> . . . . .	IV	17	strigata ( <i>Alytilis</i> ), <i>Hayley</i> . . . . .	VII	33
impuncta, <i>Heacian</i> . . . . .	IV	51	subpurpurea ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	VIII	41
incavata, <i>Dunker</i> . . . . .	V	19	subrotunda, <i>Hayley</i> . . . . .	VIII	43
Japonica ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	VI	26	subsurgata ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	VIII	47
longata ( <i>Leuistum</i> ), <i>Gray</i> . . . . .	IX	53	subtorta ( <i>Modiolacea</i> ), <i>Dunker</i> . . . . .	X	57
lygaea, <i>Reese</i> . . . . .	X	58	sulcata, <i>Lamarck</i> . . . . .	X	61
Magellana ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	VIII	41	Tröllii, <i>Reese</i> . . . . .	IV	13
normanata, <i>Boisler</i> . . . . .	XI	67	tristis ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	VII	34
Meteorii, <i>Hayley</i> . . . . .	IV	16	ulipa, <i>Lamarck</i> . . . . .	IV	15
modiolus ( <i>Alytilis</i> ), <i>Linn.</i> . . . . .	I	2	umbra, <i>Hayley</i> . . . . .	XI	67
modiolus, <i>Turton</i> . . . . .	I	2	undulata ( <i>Falsella</i> ), <i>Dunker</i> . . . . .	V	18
nana ( <i>Leuistum</i> ), <i>Dunker</i> . . . . .	X	56	vagina, <i>Lamarck</i> . . . . .	I	3
nexa, <i>Goult</i> . . . . .	IX	51	vaccinosa, <i>Goult</i> . . . . .	VI	27
nigra ( <i>Leuistum</i> ), <i>Gray</i> . . . . .	IX	49	vevillium, <i>Reese</i> . . . . .	VIII	40
nivens, <i>Cerastus</i> . . . . .	V	23	viridis, <i>Fleming</i> . . . . .	I	2



MONOGRAPH  
OF THE GENUS  
L I T H O D O M U S.

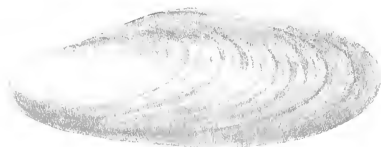
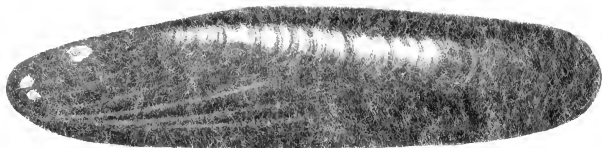
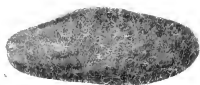
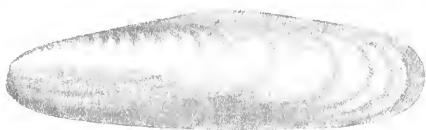
Farewell, farewell! but this I tell  
To thee, thou Wedding-Guest  
He prayeth well, who loveth well  
Both man, and bird, and beast;

*The Annet Mirror.*









# LITHODOMUS

PLATE I

## Genus LITHODOMUS, Cuvier

*Testis transversa, cylindrica-oblonga, apicaliter, epidermidio-rufo-roseo-nuda, cujus veritatem incrustula; exte-rioribus radialis; later. postice brevissima, sub-rotunda parva, incrustis. Cuius lateris, ligamento antero-ali.* Impressio in ventris conposita, indistincta.

Shell transverse, cylindrical oblong, equivalve, covered with a reddish-chestnut epidermis, sometimes incrusted with chalk, extremities rounded, posterior side very short; umbos small, incurved. Hinge linear, with the ligament marginal. Muscular impression compound, indistinct.

This very interesting genus, founded by Cuvier, is not alone distinguished from *Mollusca* by the boring habits of its animal. The shell is always of a peculiarly oblong, cylindrical or wedge-shaped form, and of a peculiar substance. It is found imbedded in stone, chalk, coral, and in the valves of *Spongia*'s shells, though often extremely delicate in structure. There is scarcely any species which is not beautifully striated, and there are several curiously sculptured with feathery wrinkles or furrows. Another peculiarity consists in the shell being frequently thickly incrustated with a deposit of chalky matter, which is sometimes sculptured, and in some few instances produced beyond the extremity. Among the small species, a few are bearded with bristles.

The geographical range of this genus is partial, but widely distributed. There are more species perhaps in the West Indies than in any other locality, but the genus is known to inhabit the Philippine Islands, New Zealand, Chili, the Galapagos Islands, and Maratani.

### Species 1. (Mus. Cuming.)

**LITHODOMUS CORRI GATUS.** *Lithod. testis subequivalvata, flaccida, per totam superficiem stris acutatis postice divergentibus corrugata, exte-rioritate antice angusta, postice dilatata, marginibus lateris medio elevato, subangulato.*

**THE WRINKLED LITHODOMUS.** Shell somewhat cylindrical, yellowish, wrinkled over the entire surface with posteriorly divergent arch'd striae, anterior extremely narrow, posterior dilated, dorsal margin raised in the middle, slightly angled.

*Mollusca corrugata.* Philippi, Abhandl. und Besch. Conch. vol. ii, p. 147, pl. I. f. 1.

*Hab.* Island of St Vincent, West Indies.

A yellowish shell rather depressed, with the surface diagonally crossed throughout with wavy wrinkles.

### Species 2. (Mus. Cuming.)

**LITHODOMUS MALAYANUS.** *Lithod. testis subtereti, exaltato, stris perpendicularibus excavata, area dorsali laevigata, marginis subligamento-producto, nimbibus involutis, parte antice angustate angustata.*

**THE MALAY LITHODOMUS.** Shell somewhat slender, chestnut, furrowed with perpendicular striae, dorsal area smooth, margin rather angularly produced, umbos involute, anterior portion of the shell manifestly narrowed.

*Mollusca Malayana* Philippi, Abhandl. und Besch. Conch. vol. iii, p. 21, pl. 2, f. 6.

*Hab.* Malay.

A short dark-chestnut shell, grooved perpendicularly over one-half of its surface, the dorsal margin being rather angularly produced in the middle.

### Species 3. (Mus. Cuming.)

**LITHODOMUS TRUNCATUS.** *Lithod. testis oblonga, ab umbonibus obtuse angulata, antice attenuata, postice truncata, angulato-truncata, medio subcontracta; myriaculis adaxialibus, concentricis rufis striata.*

**THE TRUNCATED LITHODOMUS.** Shell oblong, obtusely angled from the umbos, attenuated anteriorly, posteriorly swollen and angularly truncated, a little contracted in the middle, dark chestnut, concentrically rufely striated.

*Gray, Appendix to Duffenbach's 'New Zealand'*

Peculiarly distinguished from all other species of the genus by its truncated and angularly contracted form.

### Species 4. (Mus. Cuming.)

**LITHODOMUS GRACILIS.** *Lithod. testis elongato-subquadrato, rufo-roseo-nudo, in parte antice stris perpendicularibus excavata, exte-rioritate postice sensim attenuata, anticeo apiculate, marginis dorsalis convexa levata, hinc angulata.*

**THE SLENDER LITHODOMUS.** Shell elongately cylindrical, reddish-chestnut, furrowed on the anterior portion with perpendicular striae, posterior extremity

gradually attenuated, equal in the anterior dorsal margin rather convex, not angled.

*Modiola gracilis*, Philippi, Zeitschrift für Malac. 1847, Abbildungen, pl. 2, f. 1.

*Hab.* China.

This fine species, the largest of the genus, is of a rich dark chestnut colour, with the furrowed sculpture of the anterior surface somewhat delicately indicated.

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

**LITHODOMUS CINNAMOMINUS.** *Lithod.* *testâ cythraceo-canniforâi, tumida, subarcuatâ, nodique minutissimè decussatim striatâ, castaneâ aut flavescens-castaneâ nitente, quasi sericea, extremitate anteriorè abruptè truncatâ, umbonibus nitidè involutis, posticâ subcompressâ.*

**THE CINNAMON LITHODOMUS.** Shell cylindrically wedge-shaped, swollen, rather arched, everywhere very minutely decussately striated, chestnut or yellowish-chestnut, shining as though silky, anterior extremity abruptly truncated, with the umbones neatly involuted, posterior extremity rather compressed.

*Mytilus cinnamomus*, Cuvonnitz, Conch. Cab. vol. viii. p. 252, pl. 82, f. 731.

*Mytilus cinnamomus*, Brugniere

*Modiola cinnamomus*, Lamarek.

*Hab.* Philippine Islands, and Island of St. Thomas, West Indies.

This species is peculiarly distinguished by its swollen, wedge-shaped, *Modiola*-like form, and shining, silky appearance.

Species 6. (Mus. Cuming.)

**LITHODOMUS OBESUS.** *Lithod.* *testâ oblongâ, nitidè obesâ, atarque fere æqualiter rotundatâ, flavescens; lœvè aut concentricè striatâ, margine ventrali serratâ, dorsali declivi-angulata, angulis fere obsolete, extremitate anteriorè subattenuatâ, umbonibus indistinctis.*

**THE STOUT LITHODOMUS.** Shell oblong, stout in the middle, almost equally rounded at both ends, yellowish, smooth or concentrically striated, ventral margin arched, dorsal slopingly angled, with the angle nearly obsolete, anterior extremity rather attenuated, umbones distinct.

*Modiola obesa*, Philippi, Zeitschrift für Malac. 1847; Abbildungen, pl. 2, f. 2.

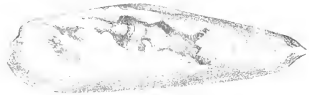
*Hab.* China.

Well distinguished by its stout, angular form, and absence of furrowed sculpture.

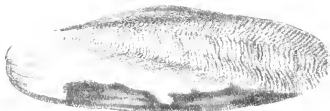
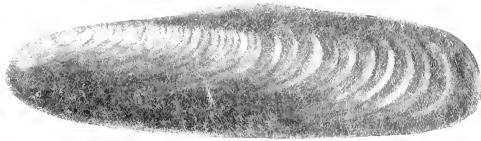




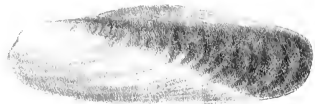
8a.



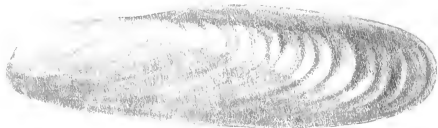
8b.



8c.



8d.



# LITHODOMUS.

PLATE II.

Species 7. (Mus. Cuming.)

**LITHODOMUS ANTHILLARIÆ.** *Lithod. testâ cylindrica, gracili, internâ castaneâ, in parte posteriori striis perpendicularibus, fere omnino exarata, extremitate anteriori aequante, aequante centrali fere rectilineâ, striâ indute posteriori ascendente, dorsali subangulato-muliebri arotatis, alia extremitate posteriori protractis.*

**THE WEST INDIAN LITHODOMUS.** Shell cylindrical slender, dark chestnut, furrowed almost entirely on the posterior portion with perpendicular striae, anterior extremity equalling the posterior, dorsal slightly angled, umbos inviolated, rather protruding beyond the posterior extremity.

*Mullola (Lithophagus) Anthillariæ.* Philippa, Zeitschrift für Malak. 1847.

*Hab.* West Indies.

Of a very dark chestnut colour, straight in form, gently angularly sloping about three-fifths of the way down.

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

**LITHODOMUS CUMINGIANUS.** *Lithod. testâ elongatâ, posticâ subglobosâ, anticâ gradatim attenuatâ, tricaricatâ, excavatâ striatâ, striis hinc illuc subangulato-plexatis, flavescens-olivaceis.*

**THE CUMINGIAN LITHODOMUS.** Shell elongated, posteriorly subglobose, anteriorly gradually attenuated, rather than concentrically striated, striae here and there somewhat wrinkle-plexated, yellowish-olive.

DUNKER, MS. in Mus. Cuming.

*Hab.* North Australia, Mazatlan.

A shell of light substance and pale yellowish-olive colour, globose formed at the posterior end, and gradually attenuated towards the anterior.

Species 9. (Mus. Cuming.)

**LITHODOMUS LITHOPHAGUS.** *Lithod. testâ cylindrica, castaneâ, in parte posteriori obsolete decussatâ exarata, anticâ concentricâ, endâ parvâ, hinc illuc striatâ, rectilineâ.*

**THE STRAW-COLOURED LITHODOMUS.** Shell cylindrical,

chestnut, obsolete decussately furrowed on the posterior part, anteriorly concentrically rudely plicated not attenuated, rectilinear.

*Mgillus lithophagus.* Linnæus, Syst. Nat. p. 1156.

*Mullola lithophaga.* Deshayes.

*Hab.* Malta.

This is the well-known typical species of the genus, described by Linnæus as a *Mgillus*, and by earlier naturalists DeArgenville, Klein, Pavier, Romulus, Lister, and Rondeletius, as a *Pholax*.

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

**LITHODOMUS NASUTUS.** *Lithod. testâ subcylindrica, tenui, bicipitatâ, anticâ concentricâ plicato-striatâ, marginâ dorsali medio elevata, atropice subangulato declivi, flavescens-castaneâ.*

**THE NOSED LITHODOMUS.** Shell nearly cylindrical, thin, smooth, anteriorly concentrically plicately striated, dorsal margin raised in the middle, nearly equally sloping on each side; yellowish-chestnut.

*Mullola nasuta.* Philippa, Abbild. und Besch. Conch. vol. ii. p. 149, pl. 1. f. 2.

*Hab.* Island of St. Thomas, West Indies.

A comparatively smooth shell, frequently incrimated, as in Fig. 19 b, with calcareous matter which on the anterior side becomes decussately furrowed.

Species 11. (Mus. Cuming.)

**LITHODOMUS SPRAMINUS.** *Lithod. testâ cylindrica posticâ gibbi, anticâ latiore, rectilineâ, parte posteriori striis perpendicularibus, hinc illuc decussatis, excavatâ; stramineo-rosâtri.*

**THE STRAW-COLOURED LITHODOMUS.** Shell cylindrical, posteriorly gibbous, anteriorly broader, rectilinear, posterior part delicately furrowed with perpendicular striae which are here and there divaricate, straw-coloured chestnut.

DUNKER, MS. in Mus. Cuming.

*Hab.* West India.

There is little to distinguish this species from *L. lithophagus* except its paler tone of colour, which is a character insufficient from its variableness.









12.



13.



14.



15a.



15b.



16.



17.

# LITHODOMUS.

## PLATE III.

Species 12. (Mus. Cuming.)

**LITHODOMUS GRUNSEI.** *Lithod. testâ arcuato-oblongatâ, vix n. globoâ perpendiculariter angulatâ-gibbosâ, antice attenuatâ, lateris costatâ, radique oblique flexuoso-reticulatâ.*

**GRUNSEI'S LITHODOMUS.** Shell arcuately elongated, peculiarly angularly gibbous about the umbos, attenuated anteriorly; dark-chestnut, obliquely flexuously furrowed throughout.

PHILIPPI, MS. in Mus. Cuming.

*Hab.* New Zealand.

This species, it will be seen, is distinguished by a very remarkable shape. In other respects the characters are much of the ordinary type.

Species 13. (Mus. Cuming.)

**LITHODOMUS TERES.** *Lithod. testâ subcylindricâ, partim posticâ levè perpendiculariter excavatâ, antice levigatâ, lateris costatâ.*

**THE SLINDER LITHODOMUS.** Shell somewhat cylindrical, posterior part closely perpendicularly furrowed, anterior smooth; dark-chestnut.

PHILIPPI, Abbild. und Besch. Conch. vol. ii. p. 148. pl. 1. f. 3.

*Hab.* Mazatlan.

Of simple form and sculpture, un-famely of small size.

Species 14. (Mus. Cuming.)

**LITHODOMUS CONVEXATA.** *Lithod. testâ oblongo-convexatâ, rad. n. perpendiculariter excavatâ, posticè glabris cordiformis gibbosâ, levè antice attenuatâ-reticulatâ, vix n. costatâ, radique subradice flexuoso-barbatâ.*

**THE CONTRACTED LITHODOMUS.** Shell oblong wedge-shaped, perpendicularly furrowed throughout, posteriorly gibbously heart-shaped, gibbous, then anteriorly attenuately contracted, bearded towards the extremity with a fibrous epidermis.

*Pinicola sancto-joan.* Dunder.

*Hab.* Gallapagos Islands; Cuming.

Emminently distinguished by its wedge-shaped, tree-like form, the posterior portion being prettily involuted like an

*Isocordia*, the anterior attenuated and bearded with a fibrous epidermis.

Species 15. (Fig. n. 6. Mus. Cuming.)

**LITHODOMUS ATTENUATUS.** *Lithod. testâ cylindricâ, tenui, posticè gibbosâ, transversalibus, levè excavatâ et antice gradatim attenuatâ, radique levigatâ vel obsolete mullatâ; flexuoso-olivaceâ.*

**THE ATTENUATED LITHODOMUS.** Shell cylindrical, thin, posteriorly gibbous, then contracted and anteriorly gradually attenuated, smooth or obsolete mullated throughout; yellowish-olive.

*Mollusca attenuata*, Deshayes, Anim. sans vert. vol. vii. p. 28.

*Hab.* Chili and Peru.

A very characteristic species, of a yell-wish-olive colour, thin in substance, except when incrustated with calcareous matter, as in Fig. 15 a, with no indication on its surface of the perpendicular furrows frequent in this genus.

Species 16. (Mus. Cuming.)

**LITHODOMUS CAUDIGERUS.** *Lithod. testâ cylindricâ, tenui, levigatâ, extremitate antice appendicibus calcareis angustatis subanulatâ; rufocostis-castaneâ.*

**THE TAIL-BEARING LITHODOMUS.** Shell cylindrical, thin, smooth, anterior extremity tailed with narrow calcareous appendages; reddish-chestnut.

LAMARCK, Anim. sans vert. vol. vii. p. 27.

*Hab.* West Indies.

We need scarcely remark that the calcareous incrustation protruding beyond the anterior extremity of this shell is no specific characteristic.

Species 17. (Mus. Cuming.)

**LITHODOMUS CASIANEUS.** *Lithod. testâ cylindricâ, tenui, multique flexuoso-areolâ levigatâ; castaneâ.*

**THE CHESTNUT LITHODOMUS.** Shell cylindrical, thin, rather gibbous throughout and smooth; chestnut.

DUNDER, MS. in Mus. Cuming.

*Hab.* — ?

Of extremely simple character, without any appearance of furrowed sculpture.



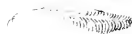




19



20



21



22



22a



22b



23



24



25



26

# LITHODOMUS

## PLATE IV

### Species 18 (Mus. Cuming.)

**LITHODOMUS RUFFLERI.** *Lithod. testâ cylindricâ, leviter, aequaliter, extremitatibus sub quadrato rotundatis, florescentibus-castaneis, parte posticâ crassa calcareâ densè rugifera.*

**THE WRINKLED LITHODOMUS.** Shell cylindrical, thin, convex, extremities nearly equally rounded; yellowish-chestnut, posterior part with the calcareous crust densely wrinkled.

DUNKER, MS. in Mus. Cuming.

*Hab.* — — ?

A shell of rather slight substance, incrustated with a wrinkle-roughened calcareous coating.

### Species 19 (Mus. Cuming.)

**LITHODOMUS HANLEYANUS.** *Lithod. testâ parviscula, rotundato-cylindricâ, tenuissimâ, valvâ subcrenatis et rugulosa.*

**HANLEY'S LITHODOMUS.** Shell rather small, rotundately cylindrical, very thin, anteriorly slightly excavated and rugulose.

DUNKER, MS. in Mus. Cuming.

*Hab.* Suez

In this very slight species the wrinkled sculpture of the calcareous coating is at the anterior end.

### Species 20 (Mus. Cuming.)

**LITHODOMUS MALACCANS.** *Lithod. testâ parviscula, leviter, angustè cylindricâ, posticè rotundata, valvâ attenuatâ et emarginatâ.*

**THE MALACCA LITHODOMUS.** Shell rather small, thin, narrowly cylindrical, posteriorly rounded, anteriorly attenuated and wrinkle-furrowed.

*Hab.* Malacca

Of rather narrower cylindrical form than the preceding species, conspicuously attenuated and wrinkle-furrowed at the anterior end.

### Species 21 (Mus. Cuming.)

**LITHODOMUS APPENDICATUS.** *Lithod. testâ subglobulosa, leviter, posticè rotundatâ valvâ attenuatâ,*

*area superiorè obliquè excavatâ, appendicibus subulnâris præsertim.*

**THE APPENDICATED LITHODOMUS.** Shell nearly cylindrical, smooth, posteriorly rounded, anteriorly attenuated, upper area excavated on both sides, the middle appendages being rather prominent.

*Mutilla appendiculata*, Philippi, Abhandl. und Besch. Conch. vol. ii. p. 150, pl. L. F. 4

*Hab.* Cuba.

Characterized by an excavation running on each side from the ligamentary area to the anterior extremity, which produces a raised wing-like prominence in the centre.

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

**LITHODOMUS BI-EXCAVATUS.** *Lithod. testâ cylindricâ, angustâ, posticè truncatâ, levigatâ, valvâ bivalvatis angulato-crenatâ, rugosa.*

**THE DOUBLY-EXCAVATED LITHODOMUS.** Shell cylindrical, boat-shaped, posteriorly convex, smooth, anteriorly bivalvately angularly excavated, rough.

*Hab.* Island of St. Thomas, West Indies.

Very closely allied to the preceding species, but of rather different form, more deeply excavated down each anterior slope, though the upper middle portion of the valves is less prominent.

### Species 23 (Mus. Cuming.)

**LITHODOMUS PUMILA.** *Lithod. testâ elongato-cylindricâ, posticè rotundatâ, levigatâ, valvâ attenuatâ, pediculis leviter rugoso-pleuratis.*

**THE LEATHER LITHODOMUS.** Shell elongately cylindrical, posteriorly rounded, smooth, anteriorly attenuated, peculiarly roughly feathered.

HANLEY, Proc. Zool. Soc. 1844, p. 17.

*Hab.* Panama (found imbedded in *Spongyli*), Cuming.

This species is especially curious in showing the feathery disposition of the incrustation on the anterior slope.

### Species 24 (Mus. Cuming.)

**LITHODOMUS PUSILLATUS.** *Lithod. testâ cylindricâ, posticè rotundatâ valvâ decussato-crenatâ, parte posticâ*

*perpendiculariter corrugatâ, anticâ subarcuatâ et angustè pinnulatâ.*

THE BARRED LITHODOMUS. Shell cylindrical, posteriorly rounded, anteriorly slopingly attenuated, posterior part perpendicularly wrinkled, anterior slightly excavated and roughly feathered.

*Hab.* — ?

This little species is sharply attenuated, whilst the incrustation is roughly wrinkled on the posterior as well as anterior side.

Species 25. (Mus. Cuming.)

LITHODOMUS CANALIFERUS. *Lithod. testâ cylindraceâ, posticè rotundatâ, anticè bi-radiatim excavatâ et angustè multi-canaliculatâ.*

THE CHANNELLED LITHODOMUS. Shell cylindrical, posteriorly rounded, anteriorly biradiately excavated and narrowly many-channelled

HANLEY, Pro. Zool. Soc. 1844. p. 16.

*Hab.* Island of Zebu, Philippines; Cuming.

The calcareous crust in this species takes a very characteristic form, being rayed on the anterior slope in deep narrow channels.

Fig. 26. (Mus. Cuming.)

LITHODOMUS SUBULA. *Lithod. testâ elongatâ, posticè globosâ, anticè subarcuâtè attenuatâ, parte posticâ levigatâ, anticâ angustè canaliculatâ et rugoso-pinnulatâ.*

THE AWL LITHODOMUS. Shell elongated, posteriorly globose, anteriorly rather sharply attenuated, posterior part smooth, anterior narrowly channelled and roughly feathered.

*Hab.* — ?

Allied to *L. pinnula*, but more sharply attenuated, and more narrowly channelled along the edge of the anterior slope.







# LITHODOMUS

PLATE V

Species 21 (Mus. Cuming)

**LITHODOMUS BARBATUS.** *Lith. testâ oblique oblonga, umbra obtusè emarginata, tenui, corneo, aversè granulosostriatâ, epidermide rugosa cœcostriatâ, barbata indetâ.*

**THE BEARDED LITHODOMUS.** Shell obliquely oblong, obtusely angled down the middle, thin, horny, minutely granulate-striated, covered with an epidermis which towards the extremity is bearded.

*Hab.* Sydney (in mud at the depth of six fathoms); Cuming.

The smallest species of the genus, of delicate horny substance minutely gran-striated, covered towards the extremity with a bearded epidermis.

Species 22 (Fig. 36, Mus. Cuming)

**LITHODOMUS SEMIGRANATUS.** *Lith. testâ oblique emarginatâ sinueregulari, umbra obtusè emarginatâ, pellucidâ cornea, posticè hirsutâ, anticè granulato-striatâ, epidermide pilosa raris extenuatâ cauleâ.*

**THE HALF-GRANED LITHODOMUS.** Shell obliquely arched, rather irregular, obtusely angled down the middle, transparent-horny, smooth posteriorly, granularly striated anteriorly, covered towards the extremity with a hairy epidermis.

*Hab.* ———

This differs from the preceding species in being of a more irregular arched growth, again-striated only on the posterior side.

Species 23 (Fig. 37 and 42, Mus. Cuming)

**LITHODOMUS GOSSIE.** *Lith. testâ triangulo-wedgeformi, umbra obtusè angulatè compressâ, aversè a tenui cornea, subcornea, posticè echinate raris, anticè striatâ raris aversâ.*

**GOSSIE'S LITHODOMUS.** Shell elongately wedge-shaped, umbra obliquely angularly compressed, anterior area cornea yellowish, closely striated posteriorly, strongly granularly decussated anteriorly.

*Hab.* Jamaica; Gossie.

A very characteristic species, marked with decussately-

granular sculpture on the bullock anteriorly, while the posterior is finely striated.

Species 24 (Mus. Cuming)

**LITHODOMUS LINDIGER.** *Lith. testâ elongatâ, subulatâ, anticè angulatè-subulatâ, umbra gibbosa, obtusè emarginatâ, aversè striatâ, epidermide tenui subcornea, anticè densè pilosa.*

**THE WOOLLY LITHODOMUS.** Shell elongated, rather solid, anteriorly acuminate twisted, gibbous in the middle, obtusely angled, conspicuously striated, with a thin horny epidermis, anteriorly densely hairy.

*DUNKE'S MS.* in Mus. Cuming.

*Hab.* Australia.

A narrow angularly distorted shell, curiously attenuated towards the anterior extremity, which is densely hairy.

Species 25 (Mus. Cuming)

**LITHODOMUS SPLENDIDUS.** *Lith. testâ oblongâ, aversâ, utrinque inflatâ, radiatâ striatâ, marginè dorsali arcuatè subangulatâ, ventrali posticè sinuata, albidâ, epidermide nitente castanea indetâ, anticè subpilosa.*

**THE SOLID-BELL LITHODOMUS.** Shell oblong, boat-shaped, inflated on each side, radiately striated, dorsal margin arched, slightly angled, ventral posteriorly sinuated; whitish, covered with a shining chestnut epidermis, rather hairy anteriorly.

*Tabularia splendula.* Dunker, Pro. Zool. Soc. 1856, p. 365.

*Hab.* Sydney.

Very locally inflated, and covered with a beautiful shining-horny epidermis.

Species 26 (Mus. Cuming)

**LITHODOMUS ARGENTUS.** *Lith. testâ triangulo-wedgeformi, latè cornea contractâ, pellucida cornea, anticè, posticè angulatè-striatâ, anticè rubratâ striatâ.*

**THE SHARPLY LITHODOMUS.** Shell triangularly wedge-shaped, contracted at the sides, transparent-horny, whitish, posteriorly elongately striated, anteriorly radiately striated.

*H.* —

More exactly nodular than one of the preceding species and impured with fine thread-like striae, extending over each side in different directions.

Species 34. (Mus. Civ. p. 115.)

**LITHODOMUS DIVARICATUS.** *Lo. Test. sub-impurizoid, antice alternata, marginis dorsati canaliculata, ventrale angulata, ventrali subcanaliculata, superficie antica concave divaricata laevissima, postica levigata, carnea.*

**THE DIVARICATE LITHODOMUS.** Shell elongately trapezoid, attenuated anteriorly, dorsal margins concave, then sharply angled, ventral faintly channelled, anterior surface neatly divaricately finely striated, posterior smooth, horny.

PHILIPPI, Zeitschrift für Malac. 1847, p. 115.

*Hab.* West Indies.

Distinguished by a characteristic variation of sculpture, the anterior portion of the shell being beautifully divaricately striated, whilst the posterior is smooth and horny.

## LITHODOMUS.

Title.	Page.	Author.	Plate.	Species.	
Antillarum (Mod.), Philipp.	II.	7	Hanleyanus, <i>Dunker</i> . . . . .	IV	19
appendiculatus (Mod.), Philipp.	IV	21	laniger, <i>Dunker</i> . . . . .	V	30
argenteus, <i>Reeve</i> . . . . .	V.	33	lithoplagus (Myl.), <i>Lanuceus</i> . . . . .	II.	9
attenuatus (Mod.), Doshages . . . . .	III.	15	Malaccanus, <i>Reeve</i> . . . . .	IV	20
barbatus, <i>Reeve</i> . . . . .	V.	27	Malayanus (Mod.), Philipp. . . . .	I	2
bis-excavatus, <i>Reeve</i> . . . . .	IV	22	nasutus (Mod.), Philipp. . . . .	II.	10
canaliciferus, <i>Hanley</i> . . . . .	IV.	25	obesus (Mod.), Philipp. . . . .	I	6
castaneus, <i>Dunker</i> . . . . .	III.	17	pellulatus, <i>Reeve</i> . . . . .	IV	24
caudigerus, <i>Leach</i> . . . . .	III	16	plumula, <i>Hanley</i> . . . . .	IV	23
cinnamomians (Myl.), Chemnitz	I	5	rugiferus, <i>Dunker</i> . . . . .	IV	15
excavatus (F. Scher.), <i>Dunker</i> . . . . .	III.	14	semigranatus, <i>Reeve</i> . . . . .	V	25
excavatus (Mod.), Philipp. . . . .	I	1	splendidus (Folsella), <i>Dunker</i> . . . . .	V	31
Guadalupeanus, <i>Doubt</i> . . . . .	II	8	stramineus, <i>Dunker</i> . . . . .	II.	11
divaricatus, <i>Philipp</i> . . . . .	V	31	subula, <i>Reeve</i> . . . . .	IV	26
Gossei, <i>Reeve</i> . . . . .	V.	29	teres, <i>Philipp</i> . . . . .	III	13
gouldii (Mod.), Philipp. . . . .	I.	4	truncatus, <i>Gray</i> . . . . .	I.	3
Gruberi, <i>Philipp</i> . . . . .	III	12			



MONOGRAPH

OF THE GENUS

A V I C U L A.

1850. This genus is found

in the mountains of the Alps.

It is a very common and useful

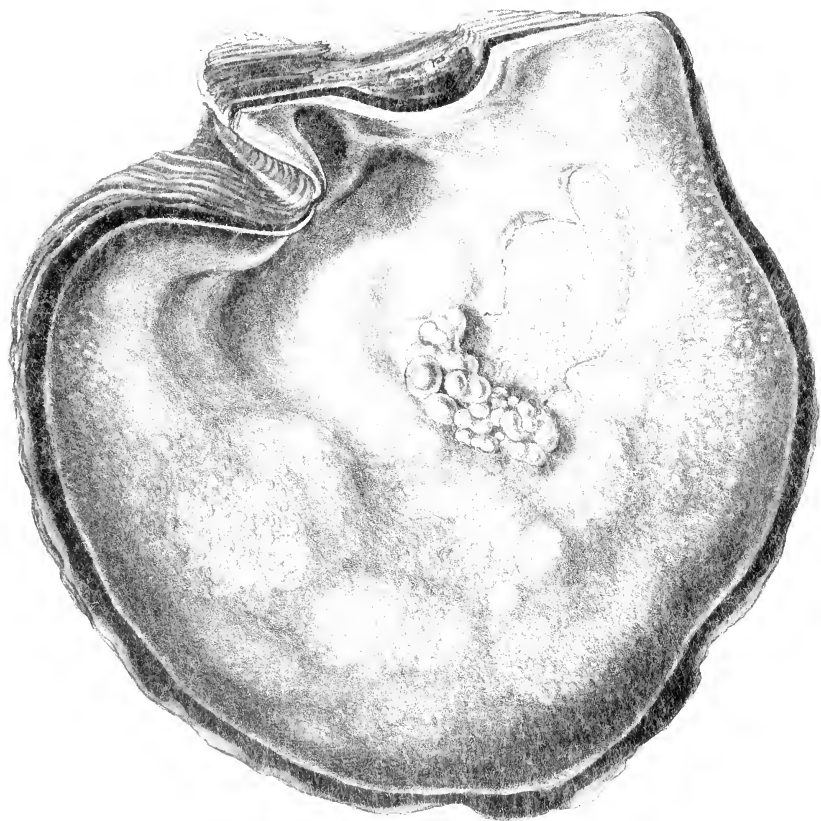
genus, and is found in all parts of the world.

*L. 1850.*









# AVICULA.

PLATE I.

## GENUS AVICULA, *Key*.

(*Sec. irregularis, aut orbicularis, aut obliqua*) *triangula, latera sulcata pars unius elongato-alata, fibra-laminaris, inaperturis, lamina pro bysso, callos plerumque marginata. Carina edentata, sed tubercula obscura in utroque, callosa saepe in unius parte, pro parte callos. Epigynatum lineare, in medio plus minus dilatatum. Ingressus musculares centrales.*

Shell irregular, sometimes orbicular, sometimes obliquely triangular, with the anterior side more or less elongately winged, fibro-laminar, inequivalve, having an opening for the byssus, interior generally pearly. Hinge to shell, but mostly furnished in each valve beneath the umbos with an obscure tubercle. Ligament linear, more or less dilated in the middle. Muscular impression central.

Under this head are included the Lamarckian *Avicula* represented by the characteristic *A. var. rostrata* and *A. longirostris*, and *Melagayana*, of which the great Pearl Oyster, *A. margaritifera*, is the type. Though differing materially in shape, the animal is the same, and a close inspection of the shell will show that even the rounded form of *Melagayana* possesses the rudiment of a winged process. Like all shells that live attached to rocks by a byssus, the *Aviculae*, vary greatly in general form, and the same species is often so variable in growth that it is not easy to identify it by description. In substance the *Aviculae* are fibro-laminar like the *Planae*, and many are remarkable for the beautifully furrowed scales which they develop, and for the exquisitely femoseoid and serrated character of the epidermis. The external strie are often deposited like concentric siliceous ridges.

Many of the *Aviculae* secrete pearls in addition to the well-known *A. margaritifera*. Mr. Cuming possesses five

pearls taken from the *A. sacca*, *patula*, and some of a peculiarly delicate warm lute produced by the *A. patula*.

The *Aviculae* are abundant in the tropical and sub-tropical seas, and are handsomely represented on our own shores by the *A. Taraditae* of the Mediterranean. The smaller species, some of which are extremely fragile, attach themselves chiefly to bunches of Zoophytes.

## Species I. (Fig. 1 and 21, Mus. Cuming.)

AVICULA MARGARITIFERA. *Acio, testâ orbiculari, planiuscula, aperturâ rectâ, posticâ subsinuata, oblique costata, sinuata, lamellis cernis marginata in scutulis longitudinalibus squamulis prolicibus, spinosis plus minus irregulariter contractis; gressu-centrali, pro parte unius rostrata.*

FIG. 1. PLAINLY AVICULA. Shell orbicular, fully convex, straight at the upper part, slightly sinuated on the posterior side, everywhere concentrically laminated, laminae produced towards the margin into longitudinal rows of scales, scales more or less irregularly twisted; greyish-olive, green near the umbos.

*Mytilus margaritifera*, Lamarck, Syst. Nat. p. 1453.

*Margarita Souanis*, Leach.

*Avicula margaritifera*, De Roissy.

*Melagayana margaritifera*, Lamarck.

*Avicula melagayana*, De Blainville.

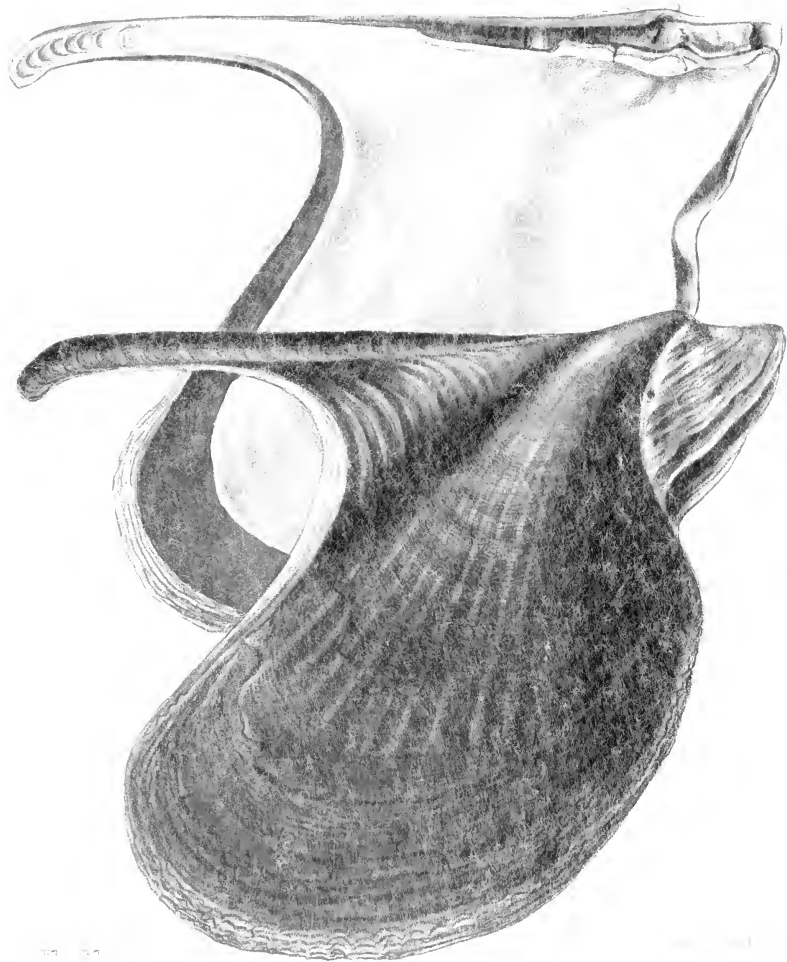
*Avicula edulis*, Leach.

*Hab.* Tropical and sub-tropical seas in both hemispheres.

Of this colossal species, the well-known Pearl Oyster of the South Seas, we have figured a young specimen at Plate VIII, to show the nature of its sculpture in an early stage of growth. As the shell advances in age, and the valves thicken, the sculpture becomes obsolete.







## AVICULA.

### PLATE II

Species 2 (Mus. Cuming.)

AVICULA MACROPTER. *Avicula longilima, sativa e sub-  
quadrato-oblonga, obliqua, plus minus gibbata, fere  
nigrescente, solide, siccata, pallide rubescit, spumatis  
fascis minutis cuspidatis, versus marginem proximam  
undata, supra deorsum unilaterali, circumscissile, ant-  
erius et vix, angustior, brevissimum probovata.*

THE LONG-WINGED AVICULA. Shell longitudinally some-  
what squarely oblong, more or less gibbous,  
brown-black, solidly horny, faintly rayed, more or  
less covered towards the margin with minutely cus-  
pidate brown scales, very inequilateral at the upper

part, anterior extremity produced into a very long  
narrow wing.

LAMARCK, Anim sans vert vol. vii. p. 97.

H. B. Moluccas.

This fine species, besides being distinguished by the  
long narrow winged prolongation of the anterior side, is  
peculiarly rayed with pale longitudinal bands, showing  
the places where minute cuspidate scales have been at-  
tached. In well-preserved specimens these minute scales,  
having the edges finely curled, cluster very densely about  
the margin and in the arched hollow between the body  
of the shell and the wing.

March, 1857









## VICULA.

### CLASS III.

Genus 2 (M.). Bot.

(1) *Vicula longiloba* (M.) Berk.  
*Agaricus longilobus* Murrill, *Ann. Entom. Soc. Amer.* 1911, p. 157.  
*Agaricus longilobus* Murrill, *Ann. Entom. Soc. Amer.* 1911, p. 157.  
*Agaricus longilobus* Murrill, *Ann. Entom. Soc. Amer.* 1911, p. 157.  
*Agaricus longilobus* Murrill, *Ann. Entom. Soc. Amer.* 1911, p. 157.

(2) *Vicula*. Shell longitudinally elongate, rather solid, largely gibbous, pearly, coppery-striate, brown-black horny, obscurely striate, black tinged at the upper part.

(3) *Vicula*. Ann. sans vert. vol. 1, p. 97.

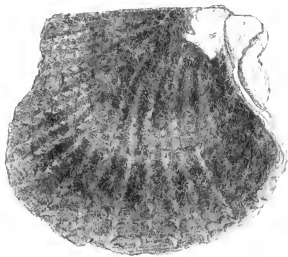
*Vicula cupressa*, Chemnitz.

*Helv.* —

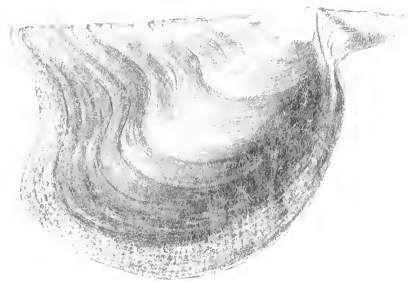
M. Deshayes regards this species as strictly *Vicula cupressa* with the anterior wing now produced. We entirely concur with Lamarek in how that it is distinct. The shell is of more solid growth and more simply gibbous, while the pearly nacre, as remarked by Chemnitz, is of a peculiar deep copper-red.



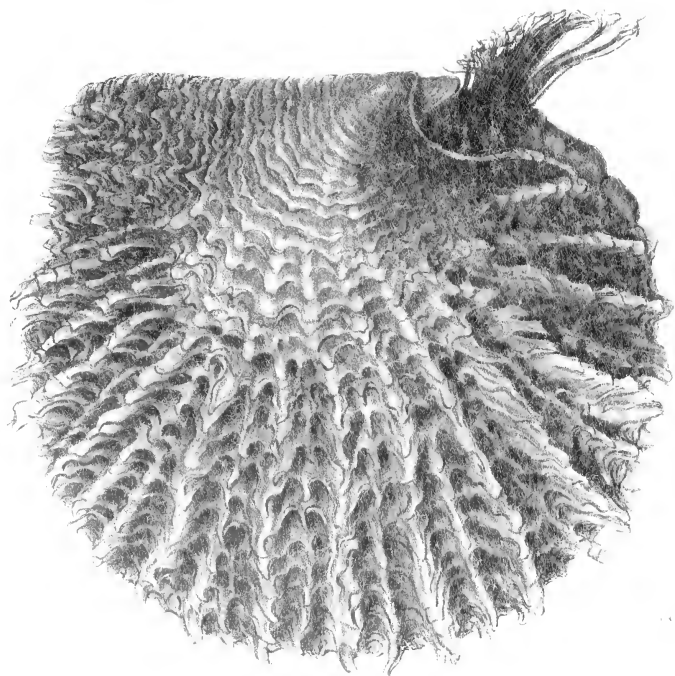




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3.

# AVICULA.

PLATE IV.

Species 4. (Mus. Cuming.)

**AVICULA FLEMINGI.** *Avicula testis squadrata, convexa, compressa, subdilatata, inaequilaterali, superne rotata, postice circa alaba, longitudinaliter flexuose squamata, spinae parvis, planis, cuspidatis, in illic obsolete, et in acrio descenditibus.*

**THE FLAT-PLATE AVICULA.** Shell somewhat square, rather than compressed, somewhat distorted, very inequilateral, straight at the upper part, scarcely winged posteriorly, longitudinally flexuose scaled, scales small, flat, cuspid, here and there obsolete, descending regularly.

*Hab.* Cape Hillsborough, North Australia: Jukes.

A shell of somewhat square growth, having rather a distorted appearance, sculptured with small cuspid scales descending in comparatively distinct flexuose rays.

Species 5. (Mus. Cuming.)

**AVICULA VIX.** *Avicula testis transverse oblongo-quadrata, subcompressa, rotata inaequilaterali, postice parva alaba, in illic sinuata, concentricis dense flexuosa, rotatae irregulariter serratis, spinae parvis et cuspidatis subulata.*

**THE BROAD AVICULA.** Shell transversely oblong-square, rather distorted, very inequilateral, but little winged posteriorly, broadly sinuated, concentrically densely shagreened, dark reddish-chestnut, covered to-

wards the margin with close-set irregularly festooned minute scales.

GRAY, MS., Brit. Mus.

*Hab.* Port Essington and James' Island, Torres Straits, Australia: Lieutenant Ives.

An extremely characteristic species, of a peculiar reddish-chestnut colour, sculptured throughout with close-set thread-like concentric striae of growth, and covered towards the margin with minute irregularly festooned scales which have the appearance of a dense pile.

Species 6. (Mus. Cuming.)

**AVICULA CUMINGI.** *Avicula testis subulata, planis, inaequilaterali, superne rotata, postice circa sinuata, oblique concentricis et longitudinaliter serratis, spinae parvis, in illic crispato-squamata, in acrio praeconiosis, in acrio representantibus, postice subulata.*

**CUMING'S AVICULA.** Shell, orbicular, flatly convex, straight at the upper part, scarcely sinuated posteriorly, everywhere concentrically and longitudinally scaled, longitudinally scales, crispately spiculate, very praeconiosis, dark greenish-olive, faintly rayed.

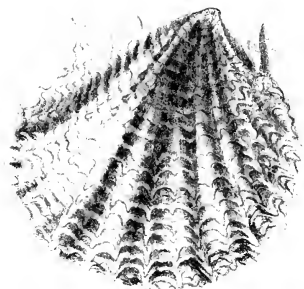
*Hab.* Lord Hood's Island, Pacific Ocean (attached to rocks, at the depth of 600 fathoms): Cuming.

This fine species is quite remarkable for the dense forest of scales with which it is sculptured throughout, the scales being of an irregular cuspate, spiculate growth developed in the most fantastic and praeconiosis manner.





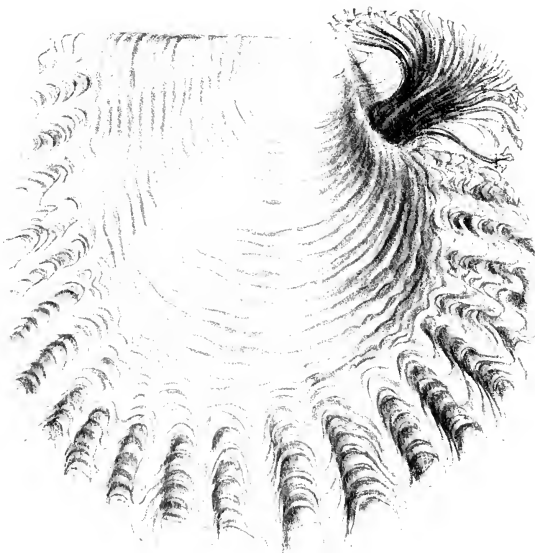




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## AVICULA.

PLATE V.

Species 2. (Fig. 7 also = *Mus. Cuming*.)

**AVICULA FLAVICOLO.** *Avicula colligens subobovata*,  
*post. lat. 1.5, ant. 1.2, post. oblongo-ovata, sinuata*,  
*sinuato-angulata, costis 12-15 longitudinalibus*,  
*reticulis 10-12, costis, post. irregularibus, irregulari-*  
*bus, sinuatis, etc.*

**THE BEARDED AVICULA.** Shell elongated, sub-oval, slightly  
lyrate, smooth, posteriorly transparent horny, con-  
centrically lamellated to finely rayed with extremely  
fine, closely seated, scales, olive, irregularly radi-  
ately, scattered, and purple-red.

*M. Cuming.*

The characteristic sculpture of this species, which is of  
a comparatively fragile horny texture, consists of a mass  
of more fragile lamellate scales, arranged for the most  
part with tolerable regularity. The shell is more or less  
cautately smeared with purple-red.

Species 3. (*Mus. Cuming*.)

**AVICULA BARBATA.** *Avicula testis orbiculari, operculo recto*,  
*post. sinuato-12, sinuato-fimbriate, concentricè lamel-*  
*lata, costis, sinuatis, dense sinuatis, sinuatis pluri-*  
*costatis, etc., sinuatis, regulariter septatis, etc.*

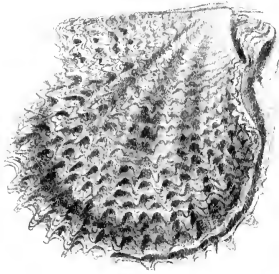
**THE BEARDED AVICULA.** Shell orbicular, straight at the  
upper part, finely convex, olive-yellow, concentrically  
laminated, loosely scaled towards the margin, scales  
finely spoon-shaped, following a guttate

*How.* Panama (under stone at low water). Cuming.

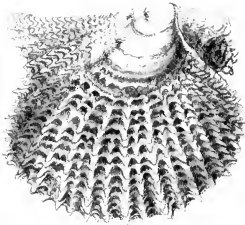
Distinguished from *A. Cumingi* by the regular sequence  
of the scales, which, so far as we have observed, are only  
developed near the margin, and by its yellower tone of  
colour. The species is also from a different locality, and  
possesses a distinct uniformity of character throughout.



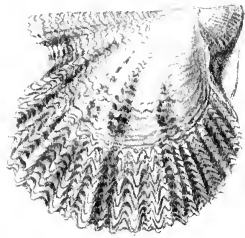




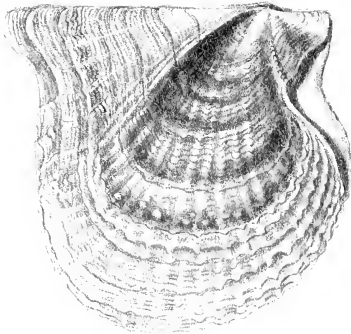
41.



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43.



44.

# AVICULA.

PLATE VI.

Species 10. (Mus. Cuming.)

**AVICULA ALA-PERDUCIS.** *Avic. testâ subquadrato-orbiculari, oblique convexâ, superâ rectâ, posticâ angulato-sinuatâ, scissipellucido-cornâ, purpureo-roseovale radiatâ, undique densè squamatâ, squamis trigono-lanceolatis, fragilibus, peculiariter uncinatâ.*

**THE PARFRIDGE-WING AVICULA.** Shell somewhat squarely orbicular, obliquely convex, straight at the top, posteriorly angularly sinuated, semitransparent, horny, rayed with purple-red, densely scaled throughout, scales triangularly lanceolate, fragile, peculiarly notched.

*Hab.* West Indies.

Of this horny species, delicately rayed with purple-red, the scales are prominently f-stemmed in their mode of development, whilst in substance and appearance they are fragile and peculiarly mottled.

Species 11. (Mus. Cuming.)

**AVICULA IMBRICATA.** *Avic. testâ subquadratâ, planiusculâ, posticâ angulato-productâ, parva sinuatâ, aliarum obtusioribus, undique densè tuberculato-squamatis, squamis cuspidatis, appressis, regularibus.*

**THE IMBRICATED AVICULA.** Shell somewhat square, rather flat, posteriorly angularly produced, but little sinuated, olive-yellow, everywhere densely imbricately scaled, scales cuspid, appressed, regular.

*Hab.* Philippine Islands; Cuming.

The scales of this species are very numerous, flatly appressed, pointed, and of unusually regular growth.

Species 12. (Mus. Cuming.)

**AVICULA MURICATA.** *Avic. testâ subobliquè quadratâ, solidiusculâ, leviter convexâ, posticâ arcuato-sinuatâ, flaviculate, marginato-nigra interruptè striatâ, cressa, vorticosa densè squamatâ, squamis angulato-lanceolatis, regularibus.*

**THE PRICKLY AVICULA.** Shell somewhat obliquely square, rather solid, slightly convex, posteriorly arcuately sinuated, pale yellow, interruptedly streaked with mottled black, densely scaled towards the margin, scales angularly lanceolate, regular.

*Hab.* Philippine Islands.

The colouring of this species is characteristic, the surface being of a yellowish cast, interruptedly rayed with marbled-black, and the scales are prominently pointed.

Species 13. (Mus. Cuming.)

**AVICULA LENTIGINOSA.** *Avic. testâ subquadratâ, posticâ latè brevioribus, parva sinuatâ, planiusculâ, sparsioribus, fusciscentibus, albo radiatâ, lentiginosâ, irregulariter lamellato-squamatis, squamis simplicibus, hic illic obsolete.*

**THE FRECKLED AVICULA.** Shell somewhat square, posteriorly broadly short-winged, but little sinuated, rather flat, fawn-brown, radiately freckled with white, irregularly lamellately scaled, scales simple, here and there obsolete.

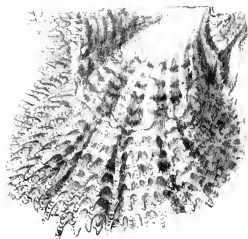
*Hab.* Molucens.

In this species the scales are only obscurely developed with the irregular laminae of growth. The colour of the shell is a pale fawn-brown, distinguished by a characteristic pattern of mottled-white rays.





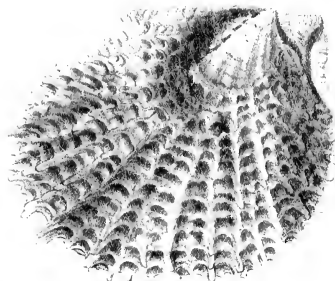




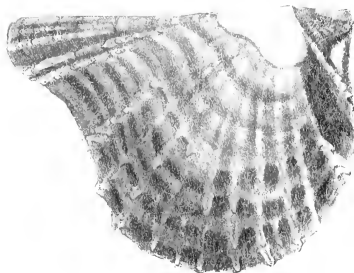
14



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17

# AVICULA.

PLATE VII.

Fig. 14. (Mus. Cuming.)

The shell here figured is intended to represent another variety of the curiously mottled species *A. obsoleticincta*, described at Fig. 10 in the preceding Plate.

Species 15. (Mus. Cuming.)

**AVICULA PERFECTA.** *Avic. testâ subquadratâ, posticè lobè sinuata, levigatâ, turbato-sparsivè, nigrâ-âllis pallidè coloratâ, nigrâ-âllis linearè squamulâs circumgatâs.*

**THE LACED AVICULA.** Shell somewhat square, posteriorly broadly sinuated, smooth, livid-fawn, rayed with pale blotches, blotches wrinkled with opaque-white lines.

*Hab.* Island of Corrigidor, Philippines. Cuming.

Of a peculiar livid-fawn colour, rayed with pale oblong blotches, which are curiously wrinkled across with opaque-white lines.

Fig. 15. (Mus. Cuming.)

A variety of *A. fimbriata*, represented at Pl. V, Fig. 7, which it is necessary to give in illustration of its exquisite variety of sculpture.

Species 17. (Mus. Cuming.)

**AVICULA TEGULATA.** *Avic. testâ subquadratâ, posticè lobè atriâ, planâ, tenui, subcarnei, sparsivè, rufo-fuscâ, eâ-âllis-âllis-âllis, albiâ radiatâ, squamulâs, squamulâs tenuibus, planulis, suboblongatis, distantibus.*

**THE TRATCHED AVICULA.** Shell somewhat square, posteriorly broadly winged, flat, thin, sub-horny, fawn, tinged with red or yellowish-green, rayed with white, sealed, scales thin, flattened, rather elongated and distant.

*Hab.* Moreton Bay, Australia.

A thin broadly winged species, scarcely sinuated, of rather horny substance, of a reddish or yellowish-green hue, faintly white-rayed, armed in the rays with rather distant, prolonged, thin, flattened scales.



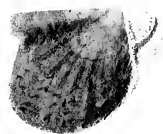




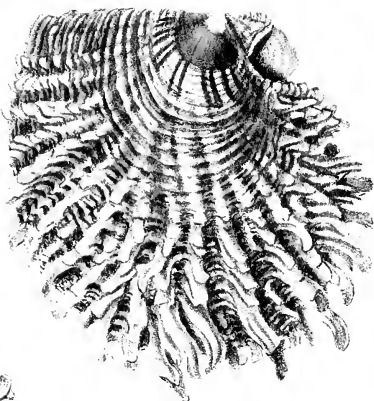
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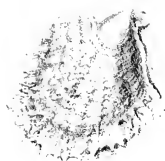
22.



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# AVICULA.

PLATE VIII.

Species 18. (Mus. Cuming.)

**AVICULA HYSTRIA.** *Avic. testa subglobosa, tenui, corvul. cicciscento, parvili radii, sparsa villosa scabris elongatis, prominens curvatis, et minutibus conibus projectis, tubulata.*

**THE PORCUPINE AVICULA.** Shell subglobose, thin, horny, green, faintly rayed, convex with long ribbon-like spines, prominently curved, projected from fine laminae.

*Hab.* ——— ?

This little species of this globular form is distinguished from all other species of the genus by its long prominently curved ribbon-like spines.

Species 19. (Mus. Cuming.)

**AVICULA RUBRA.** *Avic. testa oblique subquadrata, tenui, laevigata, pilulosa, saepe-rufescente.*

**THE RUDDY AVICULA.** Shell obliquely subquadrate, thin, smooth, transparent, coppery-red.

*Hab.* Australia; Stragge.

Of very simple structure, being of a thin transparent coppery-red substance, somewhat rudely developed, without any indication of scales or over-lapping laminae.

Species 20. (Mus. Cuming.)

**AVICULA PERVERIDIS.** *Avic. testa oblique ovata, convexiuscula, superius late alata, convexa, pericratis, parvili radiata, sparsis parvis radiis intercalatis prope marginem.*

**THE GREEN AVICULA.** Shell obliquely ovate, rather convex, broadly winged at the upper part, horny, bright green, faintly rayed, with a few delicate pointed scales near the margin.

*Hab.* Australia; Stragge.

Of an unusually bright-green horny substance, faintly rayed, with a few flattened pointed scales in the rays near the margin.

Fig. 21. (Mus. Cuming.)

The young state of the large *Avicula marginifera*, described and figured at PL. I.

Species 21. (Mus. Cuming.)

**AVICULA PUCIDELLA.** *Avic. testa papillata, ovata, superius alata, convexiuscula, tenuiuscula, parvili radiata, flavo-olivacea, nigra majus radiata, unguis nigris, parvis radiis intercalatis conicatis.*

**THE PUTTY AVICULA.** Shell very obliquely ovate, narrower at the upper part, rather convex, very thin, transparent horny, rayed with narrow red flames, intermixed with black blotches and fine opaque-white lines.

*Hab.* Philippine Islands; Cuming.

An exceedingly transparent shell, curiously painted with interrupted rays of black spots, narrow red flames and fine opaque-white lines. The shell is of very oblique growth, and broader at the base than at the upper part.

Species 23. (Mus. Cuming.)

**AVICULA RABULA.** *Avic. testa subquadrata, planiuscula, irregulari, convexa alata, laevigata, deinde squamulis ovatis, radiis intercalatis conicatis, alata, tubulata.*

**THE BASP AVICULA.** Shell somewhat square, rather appressed, irregular, smooth around the umbones, then armed with flat pointed frilled scales, white, tinged with yellow.

*Hab.* ——— ?

A yellow-stained opaque-white shell, of rude irregular growth, beset with appressed sharp-pointed frilled scales.

Species 24. (Mus. Cuming.)

**AVICULA OCCA.** *Avic. testa oblique ovali, convexiuscula, praesertim calcei dilatata, convexa, solidiuscula, olivacea, nigra interrupte radiata, conspicuis squamulis, sparsis parvis, crispatis, aurantatis.*

**THE NARROW AVICULA.** Shell obliquely ovate, rather convex, especially the right valve, horny, rather solid, olive, rayed with interrupted black, conspicuously scaled, scales flat, crisp, mottled.

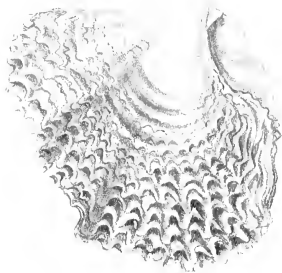
*Hab.* Red Sea.

Allied to *A. ala-perdix*, from which it differs chiefly in the scales being larger and more regularly testaceous.

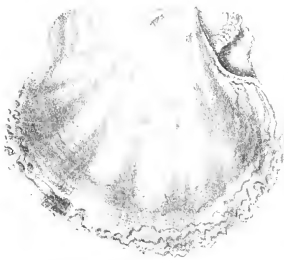




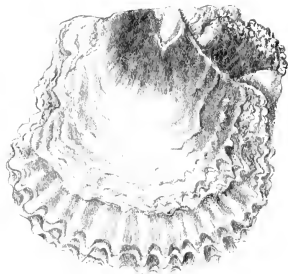




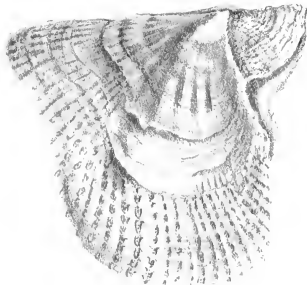
25.



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28.

# AVICULA.

## PLATE IX.

Species 25. (Mus. Cuming.)

**AVICULA FIMBRATA.** *Avic. testâ sex quadrato-ovata, superius bilobâ, tenui, prominens, bilobâ, irregulari, squamis laminae versus marginem bilobâ, fimbriatâ, pallidâ squamulâ.*

**THE FURROWED AVICULA.** Shell somewhat square, ovate, broad at the upper part, thin, rather flat, smooth, irregular broadly furrowed towards the margin with laminae scales, pale fawn-colour.

*Hab.* North-west coast of Australia (under pieces of coral at low water); J. E. Dring.

Of rather slight irregular structure, thin and flat, eroded towards the margin with conspicuous rows of broadly filled laminae.

Species 26. (Mus. Cuming.)

**AVICULA ANOMIODES.** *Avic. testâ subquadrata, sub-Pecteniformi, testâ, irregulari, pallidâ, radiatâ, versus marginem absolute rugoso-lamellata.*

**THE ANOMIA-LIKE AVICULA.** Shell nearly circular, somewhat Pecten-shaped, thin, smooth, transparent-white, faintly rayed with pale green, absolutely roughly laminated at the margin.

*Hab.* ————

A very characteristic species, of semitransparent white Anomia-like substance, rayed with pale green in a manner very unusual in this genus, the edge being rudely jagged with short broken laminae.

Species 27. (Mus. Cuming.)

**AVICULA SUGILLATA.** *Avic. testâ subquadrato-ovata, sex-*

*lobata, irregulari, pallidâ, radiatâ, versus marginem absolute rugoso-lamellata, versus marginem radiatâ, debile lacinis placis fimbriatâ.*

**THE BEETLED AVICULA.** Shell somewhat squarely ovate, irregular, smooth, transparent-white, rayed and stained about the umbones with purple-black, rayed near the margin with opaque-white bands, then frilled with flat laminae.

*Hab.* Cape Hillsborough, North Australia. Jukes.

This shell is of the same transparent white Anomia-like substance as the preceding species, but differs materially in form, and is more or less stained with purple-black. Near the margin it is curiously marked with opaque-white radiating bands, and at the edge is broadly flatly frilled.

Species 28. (Mus. Cuming.)

**AVICULA CETRA.** *Avic. testâ subquadrata, superius triangulari, irregulari, versus marginem radiatâ, versus marginem absolute rugoso-lamellata, versus marginem radiatâ, versus marginem rugoso-lamellata, versus marginem rugoso-lamellata.*

**THE SHIELD AVICULA.** Shell somewhat square, very broad at the upper part, smooth, dirty fawn-colour, irregularly absolutely laminated, towards the margin densely radiately scaled, scales minute, flat, cuspid, rather distinct, peculiarly mottled.

*Hab.* ————

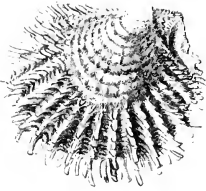
The chief characteristic of this thin broadly square species is its sculpture of minute flat cuspid mottled scales, arranged in regular radiating rows.







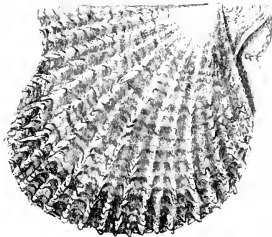
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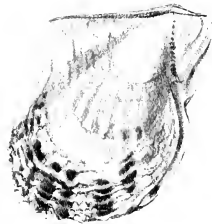
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32



33



34



35

# AVICULA.

PLATE X.

Species 29. (Fig. 29 and 31, Mus. Cuming.)

**AVICULA LACUNATA.** *Avic. testis subquadratovalis, coracae excavatae, laminae laterales convexae, conspicuae, dorsum laeviusculum, laminae in apice lateralis punctatis perforatae.*

**THE GUTTERED AVICULA.** Shell somewhat squarely ovate, rather convex, thin, yellowish-horny, conspicuously densely laminated, the laminae projecting into festooned guttered spines.

*Hab.* Australia.

The surface of this species is remarkable for its very elaborate system of horny laminae, projected into festooned guttered spines.

Species 30. (Mus. Cuming.)

**AVICULA HERASA.** *Avic. testis subcirculari, coracae excavatae, laminae striatae, dorsum laeviusculum, angustae, marginibus regulariter denticulatis, pallio in spina dorsali rugato.*

**THE UNSHINY AVICULA.** Shell nearly circular, rather thin, horny, concentrically laminately striated, then densely regularly beset with flat narrow scales, light fawn-red.

*Hab.* ———?

A light nearly circular species, of a delicate fawn-red colour, thickly rayed with close-set flattened narrow scales.

Species 32. (Mus. Cuming.)

**AVICULA ERATA.** *Avic. testis subquadratovali, laminae convexae, praesertim laterali dextrae, postice subcirculari, areolae laminae lateralis, spinae laminae unguiculae proae planae unguiculae convexae.*

**THE BRONZE AVICULA.** Shell somewhat square, rather thin, convex, especially the right valve, posteriorly slightly sinuated, bronze-yellow, absolutely finely

laminated, beset with numerous small thin flat mottled scales.

*Hab.* Australia.

Chiefly distinguished by its yellowish-bronze hue, thin in substance, and regularly beset with small flat mottled scales.

Species 33. (Fig. 33 and 34, Mus. Cuming.)

**AVICULA NUBIFLOSA.** *Avic. testis oviformi quadrato, coracae excavatae, postice et laterali dextrae, subdorsali, postice subcirculari, laterali. Laminae striatae, laterali convexae, unguiculae, areolae, subdorsali, angustae, praesertim laterali.*

**THE CLOUDED AVICULA.** Shell obliquely square, rather convex, especially the right valve, rather solid, posteriorly slightly sinuated, richly pearly in the interior, externally rough, without sculpture, dull white, profusely clouded with black.

*CONRAD, Journ. Acad. Nat. Sci. Philadelphia, vol. vi.*  
*Hab.* Sandwich Islands.

A rather solid black clouded species, void of any external sculpture, remarkable for the rich delicate golden hue of its internal nacre.

Species 35. (Mus. Cuming.)

**AVICULA HERBIENSIS.** *Avic. testis sub-Pectiniformi, coracae gibbae, planiuscula, angustae et subcirculari, praesertim laterali, unguiculae, areolae, subdorsali, angustae, praesertim laterali, unguiculae, areolae, subdorsali, angustae, praesertim laterali.*

**THE RAYED AVICULA.** Shell somewhat Pectiniform, irregular, rather flat, smooth or obscurely laminated around the umbones, then finely scaled, scales crisp, very irregular whitish, rayed with red.

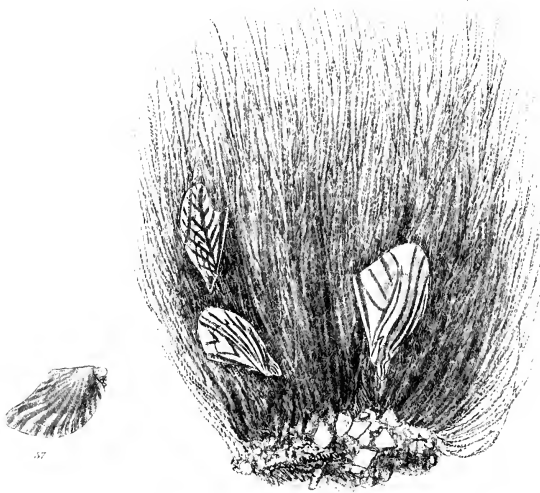
*Hab.* Australia.

An irregularly formed species, of whitish hue, rayed in a characteristic manner with red.









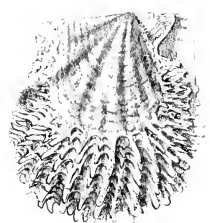
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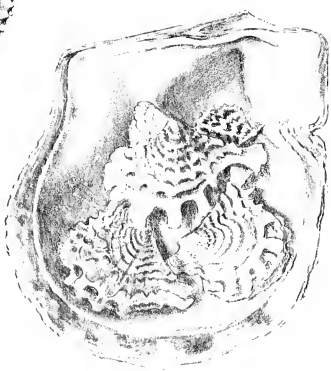
38



39



40



41

# AVICULA.

## PLATE XI.

### Species 36. (Mus. Cuming.)

**AVICULA ZEBRA.** *Avic. testis peraliquo* trapezoidal, superior side convex, post. side sinuati, marginibus angulatis, et sinuatis, striatis, p. n. transversis, lineis nigricantibus, fuscis et striatis, p. n. et striatis.

**THE ZEBRA AVICULA.** Shell very obliquely trapezoid, broad and straight at the upper part, posteriorly scarcely sinuated, obliquely convex in the middle, smooth, transparent horny, promiscuously striped with distant black-brown lines.

*Hab.* Monoton Bay, Australia.

This little *Avicula*, of which three specimens are exhibited on the accompanying figure, attached by their byssus (one of which of *S. striata*), is of a peculiarly oblique form and bright transparent horny substance, promiscuously striped with distant black-brown lines.

### Species 37. (Mus. Cuming.)

**AVICULA FLAMMATA.** *Avic. testis oblique quadrata, sub-rotunda, superius convexa, postice sinuata, marginibus angulatis, et sinuatis, striatis, p. n. transversis, lineis nigricantibus, fuscis et striatis.*

**THE FLAMED AVICULA.** Shell obliquely square, rather depressed, narrow at the upper part, transparent horny, rayed with bands of red-brown flames.

*Hab.* Philippine Islands; Cuming.

A small transparent horny species, of somewhat rude oblique growth, rayed with bands of red-brown flames, and having a delicate tortoise-shell aspect.

### Species 38. (Mus. Cuming.)

**AVICULA SCALPTA.** *Avic. testis oblique quadrata, superius convexa, postice sinuata, marginibus angulatis, et sinuatis, striatis, p. n. transversis, lineis nigricantibus, fuscis et striatis.*

**THE SCALP-LIKE AVICULA.** Shell obliquely square, rather narrow at the upper part, convex; pale transparent horny, rayed with opake-white hair-lines, promiscuously diverging.

*Hab.* Australia.

A rather convex shell, of a pale, horny texture, curiously marked with opake-white hair-lines promiscuously diverging off.

### Species 39. (Mus. Cuming.)

**AVICULA PERRONIDES.** *Avic. testis oblique quadrata, superius convexa, postice sinuata, marginibus angulatis, et sinuatis, striatis, p. n. transversis, lineis nigricantibus, fuscis et striatis.*

**THE PERRON-LIKE AVICULA.** Shell obliquely circular, rather narrow at the upper part, flat, rather solid, rough, without external sculpture, irregularly notched at the margin; yellowish-white, rayed and conspicuously mottled with purple-black.

*Hab.* ———?

The most noticeable feature in this species is its field, purple-black margined painting, which is particularly conspicuous in the marked interior.

### Species 40. (Mus. Cuming.)

**AVICULA ASSUELA.** *Avic. testis subquadrata, subrotunda, postice sinuata, superius convexa, marginibus angulatis, et sinuatis, striatis, p. n. transversis, lineis nigricantibus, fuscis et striatis.*

**THE SEAB AVICULA.** Shell somewhat squarely ovate, rather solid, slightly sinuated posteriorly, obsoletely laminated near the umbos, then beset with festoons of fragile lanceolate scales; somewhat horny, rayed and mottled with purple-red.

*Hab.* West Indies.

A simple stout horny shell, rayed and mottled with purple-red, densely beset towards the margin with festoons of fragile lanceolate scales.

### Species 41. (Mus. Cuming.)

**AVICULA CHAMONIDES.** *Avic. testis subquadrata, subrotunda, postice sinuata, superius convexa, marginibus angulatis, et sinuatis, striatis, p. n. transversis, lineis nigricantibus, fuscis et striatis.*

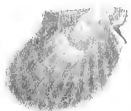
**THE CHAMA-LIKE AVICULA.** Shell somewhat squarely circular, thin, horny, concentrically laminated, laminæ more or less largely branched; olive, blotched with wavy blue.

*Hab.* ———?

A pretty horny species, of which a cluster of four specimens is represented within a valve of *A. unguis-peregrini*, remarkable for the bold Chama-like branching out of the concentric laminæ.







42.



43a.



43b.



44.



45a.



45b.



46.

# AVICULA.

## PLATE XII.

### Species 42. (Mus. Cuming.)

AVICULA PUNCTULATA. *Arca testâ obliquè ovata, justice subsimulâ, coracis solidiusculâ, levigatâ, cicidâ nigro-occeâ, punctulis alutis opaco-albis radiatâ.*

THE DOTTED AVICULA. Shell obliquely ovate, slightly sinuated posteriorly, horny, rather stout, smooth, bright olive-green, rayed with minute opake-white dots.

*Hab.* -----?

A rather stout horny species, of a particularly bright olive-green colour, rayed throughout with minute opake-white dots.

### Species 43. (Fig. a b, Mus. Cuming.)

AVICULA ELECTRINA. *Arca testâ elongatâ, plus minus probovatâ, convexiusculâ, levigatâ, cicidâ rufi-auro-fulâ, pallidâ radiatâ, interiorâ punctulis opaco-albis aspersâ, costâ dextrâ prope umbonem plus minus nigra uncinatâ.*

THE AMBER AVICULA. Shell obliquely oblong, more or less produced, rather convex, smooth, bright reddish-orange, faintly rayed, sometimes sprinkled with opake-white dots, right valve more or less blotched with black near the umbo.

*Hab.* Moluccas.

A species of characteristic oblique oblong growth, remarkable for its bright reddish-orange colour.

### Species 44. (Fig. a b, Mus. Cuming.)

AVICULA ALA-COEVI. *Arca testâ obliquè oblongâ, planâ, levigatâ, levigatâ, intusè purpureo-nigra punctulis opaco-albis interstitiâ aspersâ, saepe alba prope umbonem, purpureo-nigra in scutellâ.*

THE CROW'S-WING AVICULA. Shell obliquely oblong, flat, lingulate, smooth, deep purple-black, sometimes sprinkled with opake-white dots, often white near the umbos, blotched with purple-black.

*Hab. coreâ,* Chemnitz, Comh. Cab. vol. viii. p. 144. pl. 81. f. 727.

*Arca testâ levigatâ,* Deshayes.

*Hab.* Red Sea.

An obliquely oblong depressed lingulate form, of a characteristic deep purple-black colour, sometimes sprinkled with opake-white dots.

### Species 45. (Mus. Cuming.)

AVICULA SMARAGDINA. *Arca testâ elongatâ-oblongâ, perobliquâ, irregulari, convexâ, levigatâ, intusè smaragdina, costâ dextrâ saturatè maculatâ.*

THE EMERALD-GREEN AVICULA. Shell elongately oblong, very oblique, irregular, convex, smooth, dark emerald-green, right valve darker-blotched.

*Hab.* Moluccas?

This singular species is of a peculiar narrow oblique oblong form, of a conspicuous uniform dark green colour.

### Species 46. (Mus. Cuming.)

AVICULA MALLEOIDES. *Arca testâ perobliquè lingulatâ depresso-planâ, levigatâ, irregulari, circumscissâ.*

THE MALLEUS-LIKE AVICULA. Shell very obliquely lingulate, depressly flattened, smooth, irregular, greenish-white.

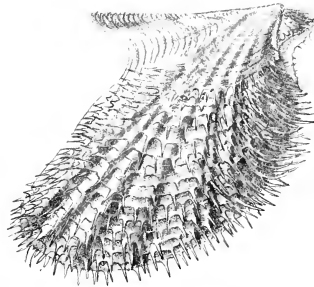
*Hab.* Australia.

Very like a *Malleus* in form and want of colour, and also in being void of sculpture.

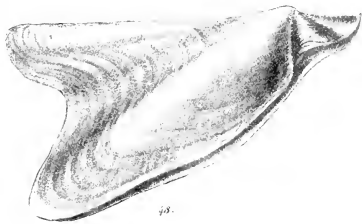








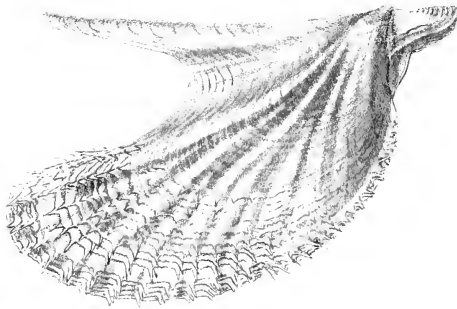
47a.



48.



49.



47b.

## AVICULA.

### PLATE VIII.

Species 47. (Fig. 65. Mus. Cuning.)

**AVICULA TARENINA.** *Avic. testâ obliquè ovata, posticè acutè alata, herigintâ red obscurè costatâ, concentricè fibroso-laminatâ, laminais spinis verrucatis obsidâ; sor-didè olivaceo, pauciparavente-fusco costatâ.*

**THE TARENUM AVICULA.** Shell obliquely ovate, posteriorly sharply winged, smooth or obscurely ribbed, concentrically fibrously laminated, laminae beset with prickly spines; dirty olive, rayed with purplish-brown.

*Mytilus hirculus*, pars. Lamarck, Syst. Nat. 12th edit. p. 1159.

*Avicula hirculus*, Turton.

*Avicula Tarentina*, Lamarck.

*Avicula Jacquin*, Lamarck.

*Avicula venturo*, Sowerby.

*Avicula Anglica*, Brown.

*Avicula Atlantica*, Brown.

*Hab.* Mediterranean.

This well-known species, which is not uncommon in the Mediterranean, occurs with rarity on our own coast. The prickly spines are projected from its fibrous epidermis.

Species 48. (Mus. Cuning.)

**AVICULA IRIDESCENT.** *Avic. testâ obliquè triquad. concentricè, posticè latè aurantâ, stris auratis anal-*

*ataz analogis: esse, pta, ceras marginem fimbriatis, aurantibus-infis, subichthiventis.*

**THE IRIDESCENT AVICULA.** Shell obliquely triangular, rather convex, posteriorly broadly sinuated, sculptured throughout with fine wavy striae, festooned towards the margin; orange-red, somewhat iridescent.

*Hab.* Moluccas.

Of very oblique growth, but not materially winged, of a bright orange-red colour, having a bronze or iridescent hue.

Species 49. (Mus. Cuning.)

**AVICULA CASTANEA.** *Avic. testâ subangustè transversâ, perobliquè, concentricè, posticè subproductâ, aurantâ nodato-striatâ, stris ceras marginem fimbriatis; intense purpureo-castaneâ.*

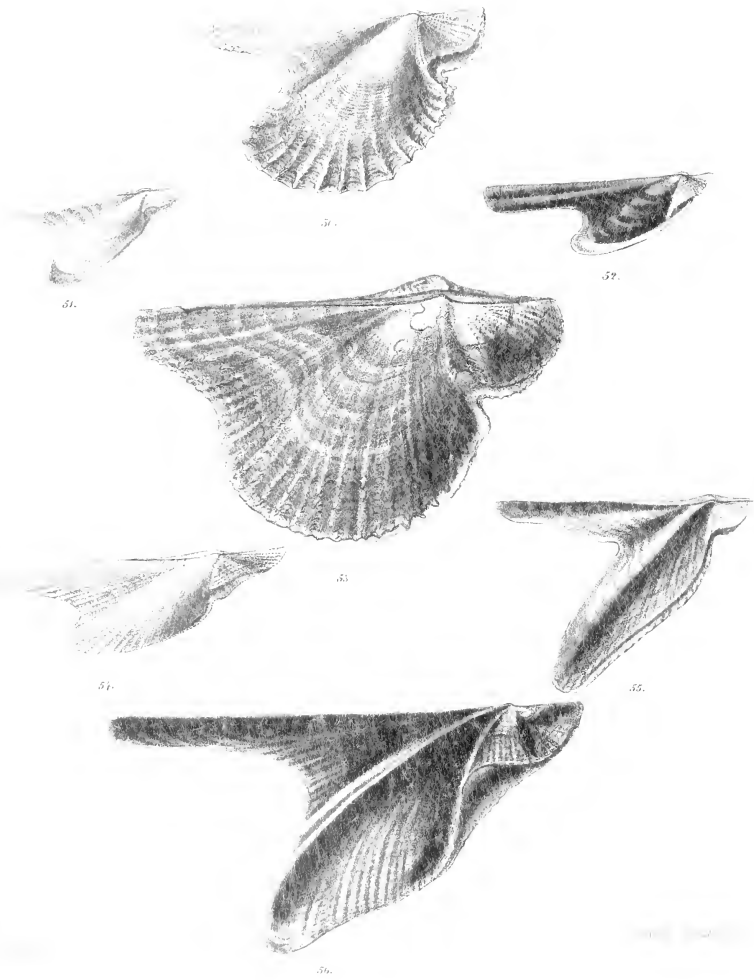
**THE CHESTNUT AVICULA.** Shell somewhat narrowly transverse, very oblique, rather convex, posteriorly somewhat produced, finely wave-striated, striae festooned towards the margin; dark purple-chestnut.

*Hab.* Island of Mindoro, Philippines, Cuning.

The form of this species is narrower transversely and more winged than the preceding species, and in colour it is of a very dark purple-chestnut. The sculpture is similar.







# AVICULA.

PLATE XIV.

Species 49. (Mus. Cuning.)

**AVICULA FIBROSA.** *Avic. testâ subrotâ, posticè subproductâ, levigatâ, concavâ, costulo-rufâ, epidermidè fibrôsâ levî, fibratâ, quasi squamulâ, indatâ.*

**THE FIBROUS AVICULA.** Shell somewhat ovate, posteriorly rather produced, rather thin, convex; chestnut-red, covered with a fibrous epidermis, elaborately festooned like scales.

*Hab.* Cebuano, Island of Luzon, Philippines; Cuning.

A species of elegant form, moderately winged, covered with a fibrous epidermis, developed in scale-like festoons.

Species 51. (Mus. Cuning.)

**AVICULA PRODUCTA.** *Avic. testâ elongato-trigonâ, obliquè emarginatâ, posticè acutè alatâ, levigatâ; rictuâ ovato-rufâ, superâ ovato-lutescente.*

**THE DUMMING-BIRD AVICULA.** Shell elongately triangular, oblique, rather convex, posteriorly sharply winged, smooth, bright orange-red, golden-yellow towards the upper part.

*Hab.* Philippine Islands; Cuning.

This little winged species is remarkable for its bright orange-red colouring, passing towards the upper part into golden-yellow, distinct in tone from that of *A. crocea*.

Species 52. (Mus. Cuning.)

**AVICULA AQUATILIS.** *Avic. testâ elongato-triangulari, imbricatâ, superâ concavâ, posticè conspicuè alatâ, alâ levigatâ, rictuâ, foveolâ plicatâ-indatâ.*

**THE LITTLE AVICULA.** Shell elongately transverse, deep purple-chestnut, posteriorly conspicuously winged, wing long, broad, strongly plicately waved.

*Hab.* Miconia.

The wing of this little dark purple-chestnut species is much elongated and broad in proportion to the body of the shell and strongly rippled in relief throughout.

Species 53. (Mus. Cuning.)

**AVICULA PERUVIANA.** *Avic. testâ ovatâ, concavâ, subglobosâ, sublutescenti, superâ levî, posticè parvè sinuatâ; rictuâ, pallidâ, rictuâ, epidermidè fibrôsâ fibratâ indatâ.*

**THE PERUVIAN AVICULA.** Shell ovate, convex, sub-globose, rather solid, broad at the upper part, but little sinuated posteriorly, chestnut, faintly rayed, covered with a fibrous festooned epidermis.

*Hab.* Peru.

A large sub-globose shell, of rather solid growth, broadly developed along the hinge-margin, and but little sinuated on the posterior side.

Species 54. (Mus. Cuning.)

**AVICULA SCABRUSCULA.** *Avic. testâ elongato-transverso, parvasinatâ, posticè conspicuè alatâ; scabellâ, rictuâ, subpallidobronneâ, epidermidè pulcherrimè striatâ sericeâ subrotâ, ad alia indatâ.*

**THE ROUGH AVICULA.** Shell elongately transverse, very narrow, posteriorly conspicuously winged; dull white, subtransparent horny, covered with a beautiful delicately scaled epidermis, rippled on the wing.

*Hab.* Australia.

A characteristic elongately winged species, of a pale sub-transparent texture, covered with a very peculiar scabrous epidermis.

Species 55. (Mus. Cuning.)

**AVICULA PRODUCTA.** *Avic. testâ subtrigonâ, concavâ, obliquè elongato-productâ, parvasinatâ, posticè acutè alatâ, peculiâriter profundè sinuatâ; rictuâ purpureo-brunneâ, epidermidè rictuâ fibrôsâ rictuâ marginatâ indatâ.*

**THE PRODUCED AVICULA.** Shell somewhat triangular, convex, obliquely elongately produced, very narrow, posteriorly sharply winged, peculiarly deeply sinuated, bright purple-chestnut, covered towards the margin with a fine fibrous epidermis.

*Hab.* Red Sea.

This interesting species is chiefly remarkable for its peculiarly narrow obliquely produced form, and sharp wing.

Species 56. (Mus. Cuning.)

**AVICULA SIGNATA.** *Avic. testâ subtrigonâ-quadrilatâ, obliquè productâ, posticè parvasinatè elongatâ, rictuâ levî sinuatâ; nigricolato-brunneâ, epidermidè rictuâ fibrôsâ fibratâ indatâ.*

**THE REMARKABLE AVICULA.** Shell somewhat triangularly square, obliquely produced, posteriorly very narrowly elongately winged, broadly sinuated, blackish-chestnut, covered with an elaborately festooned fibrous epidermis.

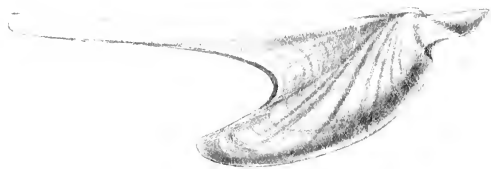
*Hab.* — ?

A fine typical species of this winged section of the genus, of very dark chestnut-colour, covered with a characteristic festooned fibrous epidermis.





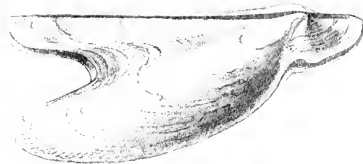




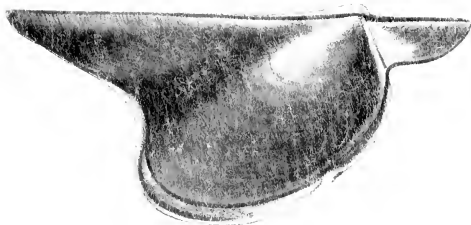
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60

## AVICULA.

PLATE XV.

(From the Collection of Miss Cuming.)

*AVICULA CUNINGHAMI*. *Shell rather convex, somewhat square, with a double series of growth-wings very long and slender, bright saffron-colored, and with a brown chevron on each.*

**THE SCOTT AVICULA.** *Shell rather convex, somewhat square, somewhat wider than high, with growth-wings very long and slender, bright saffron-colored, and with a brown chevron on each.*

**OLMSTEAD AVICULA.** *Shell of vol. of 205. (1825, 1854.)*

*Traces of growth-wings.*

**THE ISLAND AVICULA.** *Spines Cuming.*

It is conspicuously distinguished by its latent, flattened form and very long slender wing.

Species 5. (Miss Cuming.)

**AVICULA MARYBATH.** *Shell rather oblong, somewhat square, with a double series of growth-wings, these straight, parallel, oblique, rather long, and with a brown chevron on each, and a dark purple spot on the margin of each.*

**THE NOTCHED AVICULA.** *Shell oblong, somewhat square, partly covered with a thin double series of growth-wings, concentrically sutured, narrow, straight, with a wavy purple-red tinge, the margin of each red, obscurely linearly elongated at the head.*

From the wing back of a solid purple texture, a cord on a

rather thin epidermis (1859) with a rather imperfect whole, becomes more solidly corded towards the margin.

Species 6. (Miss Cuming.)

**AVICULA SERRICORNIS.** *Shell rather convex, somewhat square, with a double series of growth-wings, these straight, parallel, oblique, rather long, and with a brown chevron on each.*

**THE CROSS AVICULA.** *Shell a little oblique, rather convex, somewhat partly covered with a lightish epidermis, arranged in concentric suture, serrated at the edge, being rather produced.*

*Hab.* Island of Maslan, Philippines, Cuming.

Very elongate form, and of a pale grayish drab colour.

Species 69. (Miss Cuming.)

**AVICULA FORMOSA.** *Shell rather oblong, with a double series of growth-wings, these straight, parallel, oblique, rather long, and with a brown chevron on each, and a dark purple spot on the margin of each.*

**THE TROPIC AVICULA.** *Shell oblong-ovate, convex, rather solid, smooth, dark-red, tinged with livid-purple, concentrically growth-striated, wing rather broad, scarcely sutured.*

*Hab.* ———.

This fine species is called by Dr. Cuming, from the wing being less elongated, and the dorsal line



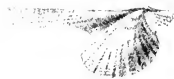




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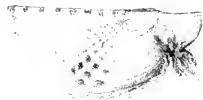
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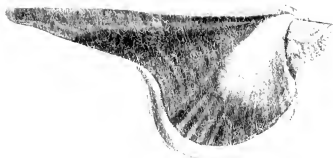
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64



65



66

# AVICULA.

PLATE XVI.

Species 61. (Mus. Cuming.)

**AVICULA INQUINATA.** *Avic. testâ angustè obliquâ, concavè-scutâ, lœvigatâ, viride castaneo-fulvè inquinatâ, epidermidè lœvâ minute serratâ versus marginem interd. et sub superficialitè canaliculatâ.*

**THE DYED AVICULA.** Shell narrowly oblique, rather convex, smooth, stained with bright chestnut-red, covered towards the margin with a minutely-serrated ridged epidermis, wing broadly superficially channelled.

*Hab.* Singapore.

Very obliquely formed, with the wing unusually broadly superficially channelled.

Species 62. (Mus. Cuming.)

**AVICULA ENIGMA.** *Avic. testâ angustè elongatâ, levissè, castaneo-fulvâ, lœvigatâ, epidermidè minute serratâ versus marginem interd. et sub superficialitè canaliculatâ et sulcatâ.*

**THE DELICATE AVICULA.** Shell narrowly elongated, thin, lœvè-scent, chestnut-red, covered towards the margin with a minutely-serrated epidermis, right valve elegantly mottled and rayed.

*Hab.* ———

An extremely delicate elongately-winged shell, of a peculiar iridescent chestnut-colour.

Species 63. (Mus. Cuming.)

**AVICULA GREGATA.** *Avic. testâ obliquâ rotundatâ, concavè, alâ longissimâ, concavè; pallidulo-purpureo-fulvâ; pubescentè fibratâ fimbriatâ minute serratâ interd.*

**THE GREGARIOUS AVICULA.** Shell obliquely rounded, convex, with a wing very long and slender; transparent purple-red, covered with a minutely-serrated fimbriated fibrous epidermis.

*Hab.* Tuvalu, Samoa Islands.

A transparent purple-red shell, rather rounded and convex, with a slender elongated wing, covered with a beautifully-serrated, fimbriated, fibrous epidermis.

Species 64. (Mus. Cuming.)

**AVICULA SEMI-SAGGITA.** *Avic. testâ lœvigâ subquadratâ,*

*concavè-scutâ, concavè-scutâ et angustè, purpureo-undatâ, pubescentè fibratâ minute fimbriatâ interd. in lœvigatâ concavè-scutâ.*

**THE HALF-ARROW AVICULA.** Shell obliquely subquadrate, rather convex, ash-grey or blackish, purple waved, covered with a minutely-fimbriated fibrous epidermis in oblique-set concentric ridges.

**LAMARCK.** Anim. sans vert. vol. vii. p. 98.

*Hab.* ——— ?

This is the nearest to agree with Lamarck's definition of *A. semi-sagittata*. The identification is necessarily doubtful.

Species 65. (Mus. Cuming.)

**AVICULA ARGENTEA.** *Avic. testâ suborbiculari, alâ latâ productâ, subconvexâ, argenteo-griseâ, purpureo-undatâ, pallidè costatâ, pubescentè rixè sulcatâ.*

**THE SILVERY AVICULA.** Shell suborbicular, with a broad produced wing, rather solid, silvery-grey, rippled with purple, faintly rayed epidermis very slight.

*Hab.* ———

Of a peculiar silvery hue, prettily rayed, with rippled purple, having white rays passing through it.

Fig. 66.

This shell has all the appearance of a distinct species, but it is entirely covered with a coating of coral.

Species 67. (Mus. Cuming.)

**AVICULA HETEROPTERA.** *Avic. testâ obliquè orbiculari, alâ longissimâ, concavè, lœvigatâ, angustè-scutâ, rixè concavè-scutâ, obscure angustè radiatâ, sulcis inæquantibus.*

**THE DISSIMILAR-WINGED AVICULA.** Shell obliquely orbicular, with a very long wing, convex smooth, pearly, bright reddish-obscure, obscurely narrowly rayed, valves unequal.

**LAMARCK.** Anim. sans vert. vol. vii. p. 98.

*Avicula slerae.* Gould.

*Hab.* New Holland.

There can be little doubt of this being the true Linnæian *A. heteroptera*.









65.



66.



67.



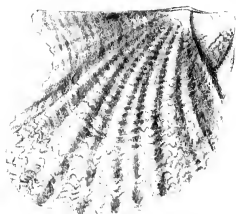
71.



72.



73.



74.

# AVICULA.

PLATE XVII.

Species 68. (Mus. Cuming.)

**AVICULA PLACONOMES.** *Avic. testâ longitudinaliter ovali, supra et subopacitate, tenui, sericeo-punctata, pilulis serratis, albescens-lavata, fasciis a quatuor nigro-olivaceis, radiatis, acris, confusis-purpureis per ambitum circumscriptâ.*

**THE PLACONALIKE AVICULA.** Shell longitudinally ovate, somewhat square at the upper part, thin, semitransparent, flat, rather horny, yellowish-white, rayed with narrow wavy opaque white bands, promiscuously blotched with blackish-purple.

*Hab.* Australia.

Remarkable for its thin *Placonalike* structure, rayed irregularly with wavy opaque bands, and promiscuously blotched with purple black.

Species 69. (Mus. Cuming.)

**AVICULA TIBELLA.** *Avic. testâ orbiculâ orbis ovati, radiâ convexâ, aëreâ, elongatâ, interscissis-concentricâ; epidermis serratâ, et radiâ aëreâ, fuscâ radiatâ.*

**THE DRAGON-FLY AVICULA.** Shell obliquely orbicular, very convex, with a long slender wing; yellowish-brown, covered with a elaborately festooned serrated epidermis.

*Hab.* China Seas.

A semitransparent, horny, elongately winged shell, most elaborately festooned with a minutely-serrated epidermis.

Species 70. (Mus. Cuming.)

**AVICULA VEXILLUM.** *Avic. testâ obliquè quadratâ, lateribus serratis, pallidiorâ aëreâ, tenuissimâ, strigis amplis purpureis-concentricis circumscriptâ.*

**THE FLAG AVICULA.** Shell obliquely square, inequivalve, transparent horny, very thin, marbled with large purple-red streaks.

*Hab.* Ceylon (in deep water). Gardner.

A shell of very transparent substance, boldly marked with promiscuous dark stripes, destitute of any winged appendage.

Species 71. (Mus. Cuming.)

**AVICULA LICA.** *Avic. testâ trigono-ovata, convexâ, raris, leevigatâ, roseo-âurâ, radiis nigro-olivaceo-purpureis, strigis raris nigro-âurâ, marginâ limboque, rubris circumscriptâ.*

**THE PED AVICULA.** Shell triangularly ovate, thick, convex, smooth, greenish-white, marbled with irregular

blackish-purple rays, margin limboque, conspicuously piced within.

*GOULD, Moll. U. S. Exploring Expedition, p. 341, pl. 1, f. 599.*

*Avicula concavata, Gould.*

*Hab.* Pitcairn's Island.

A species of solid structure, imbed with an extremely delicate yellowish nacre, remarkable for its prolonged limboque margin being conspicuously piced.

Species 72. (Mus. Cuming.)

**AVICULA MAURA.** *Avic. testâ obliquè oblongâ, laevi, sericeâ, aëreâ, albâ, operibus aëreâ, convexâ, epidermis double serratâ, radiâ circumscriptâ.*

**THE MOOR AVICULA.** Shell obliquely oblong, thin, smooth, shining-black, sparingly marbled with white, minutely-serrated deciduous epidermis, wing rather produced.

*Hab.* Sydney.

A thin, shining, jet-black shell with a finely serrated blackish epidermis on the ear.

Species 73. (Mus. Cuming.)

**AVICULA CORNEA.** *Avic. testâ obliquè oblongâ, convexâ, aëreâ, sericeâ, strigis aëreâ, operibus aëreâ, convexâ, aëreâ, albâ, operibus aëreâ.*

**THE HORN AVICULA.** Shell obliquely oblong, rather convex, olive, horny, smooth, wing rather broad.

*Hab.* Jamaica; Gosse.

A plain, olive, horny shell, moderately winged, attaching itself to *Geopoma*.

Species 74. (Mus. Cuming.)

**AVICULA PUFATA.** *Avic. testâ longitudinaliter ovata, subopacitate, convexâ, aëreâ, purpureo-âurâ, radiâ aëreâ, limboque limboque planis concentricis amplius serratis circumscriptâ.*

**THE SEALED AVICULA.** Shell longitudinally oblong, somewhat square, convex, rather thin, closely rayed with purple-red, beset with thin, largely serrated, flat, concentric laminae.

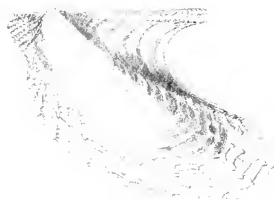
*GOULD, Proc. Boston Soc. Nat. Hist. vol. in. p. 509; Moll. U. S. Exploring Expedition, p. 341, pl. 39, f. 554.*

*Hab.* Japan.

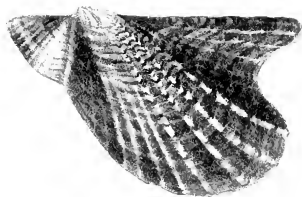
Chiefly distinguished by its radiating pattern of purple stains.



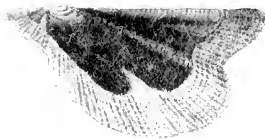




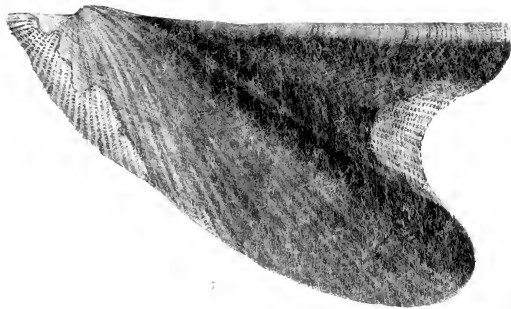
65.



66.



67.



68.

# AVICULA.

PLATE XVIII.

Species 72. (Fig. 68, Mus. Brit.)

*AVICULA VITREA.* *Avic. testâ obliquè curvâ, subspathulata, alâ late sinuatâ, tenui; pellucidâ-oblâ; parvâ convexâ; plumbâ-squâmatâ, sâpientis fereâ obscurâ.*

(72) GLASSY AVICULA. Shell obliquely curved, somewhat spatulate, with the wing broadly sinuated, thin, transparent-white, but little convex, flatly sealed, setis almost obsolete.

*Hab.* West Indies.

Flat and transparent, of this *Placosa*-like substance, obliquely spatulate, with a few scarcely-developed festooned scales.

Species 73. (Fig. 69, Mus. Brit.)

*AVICULA ATLANTICA.* *Avic. testâ obliquè curvâ, sândi-uo oblâ, convexâ, alâ sublatè sinuatâ, lævigatâ, purpureo-fuscâ, fasciâ angustis pallidâ radiatâ, fasciis maculis fuscis cuspidatis rictatis.*

(73) THE ATLANTIC AVICULA. Shell obliquely ovate rather solid, convex, wing rather broadly sinuated, smooth, purple-brown, rayed with light narrow bands, bands filled with brown arrow-headed spots.

*LAMARCK.* *Ann. sans vert.* vol. viii. p. 98.

*Mytilus orcutti sen hermâ.* Chemnitz.

*Hab.* Australia. Jukes.

This species has doubtless a wide range of habitation. Its most distinguishing characteristic is the rayed pattern or narrow light bands, filled with brown arrow-headed marks.

Species 74. (Fig. 70, Mus. Brit.)

*AVICULA RETICULATA.* *Avic. testâ triangulo-ovata, alâ latiusculâ; intense purpureo-ovata; tenui concentricè striatâ, epidermide nitide reticulatâ prope marginem radiatâ.*

(74) THE RETICULATED AVICULA. Shell triangularly ovate, with the wing rather broad, dark rich purple-hestnut; finely concentrically striated, covered near the margin with minutely reticulated epidermis.

*Hab.* Australia.

Allied to *A. lata*, but rather different in form, and of darker colour. The epidermis presents a most exquisite example of finely tufted network.

Species 75. (Fig. 71, Mus. Brit.)

*AVICULA SAUVIGNY.* *Avic. testâ obliquè oblongâ, triangulâ, alâ late sinuatâ; intense purpureo-nigrâ, stris concentricè reticulatâ radiatâ.*

(75) SAUVIGNY'S AVICULA. Shell obliquely oblong, triangular, with the wing broadly sinuated; dark purple-black, covered with a concentric network of raised striae.

*DESHAYES.* *Ann. sans vert.* vol. vii. p. 102.

*Avicula heteroptera.* Sowerby, in *Genera of Shells.*

*Mytilus maris.* Dillwyn.

*Hab.* Pulo Condore. Mus. Brit.

A fine purple-black species, with a broad, expanded, not elongated, wing, beautifully sculptured with fine concentric striae.





# AVICULA.

Species	Class	Species	Class	Species	Class
<i>acuta</i> , Swerby	XIII	<i>lata</i> , Germ.	IV		5
<i>acuta</i> , Rees	X	<i>lenigrosi</i> , Rees	VI		13
<i>alio-corni</i> , Chevrolt	XII	<i>libella</i> , Rees	XVII		39
<i>alio-perditi</i> , Rees	XI	<i>longipala</i> , Deshayes	XII		44
<i>algosa</i> , Brown	XIII	<i>lotorium</i> , Lat. arab.	III		2
<i>Ammonides</i> , Rees	IX	<i>macroptera</i> , Chevrolt	II		3
<i>apudis</i> , Rees	XIV	<i>umbulata</i> , Gould	XVII		71
<i>argentea</i> , Rees	XVI	<i>Malloules</i> , Rees	XII		46
<i>asida</i> , Rees	XI	<i>marmorata</i> , Rees	XV		58
<i>Aspilota</i> , Brown	XIII	<i>muricana</i> , Lat.	VI		12
<i>Athalia</i> , Latreill	XVIII	<i>mutua</i> , Rees	XVII		72
<i>varicata</i> , Rees	V	<i>nubifera</i> , Chevrolt	X		33
<i>astinea</i> , Rees	XIII	<i>occa</i> , Rees	XIII		24
<i>astra</i> , Rees	IX	<i>perivialis</i> , Rees	XIII		29
<i>charoides</i> , Rees	XI	<i>Peronides</i> , Rees	XI		39
<i>Chorebus</i> , Latreill	XV	<i>Peruviana</i> , Rees	XIV		53
<i>cristata</i> , Rees	XVII	<i>pus</i> , Gould	XVII		74
<i>cyana</i> , Chevrolt	XV	<i>Phaenodes</i> , Rees	XVII		68
<i>cyana</i> , Lat.	IV	<i>proctata</i> , Rees	VII		45
<i>cyanea</i> , Rees	XII	<i>producta</i> , Rees	XIV		55
<i>cyana</i> , Rees	XVI	<i>pulex</i> , Rees	XIII		32
<i>cyana</i> , Latreill	XIII	<i>punctulata</i> , Rees	XII		42
<i>cyana</i> , Rees	XV	<i>radula</i> , Rees	VIII		23
<i>cyathata</i> , Rees	IX	<i>reticulata</i> , Rees	XVIII		74
<i>cyathata</i> , Rees	V	<i>rutila</i> , Rees	VIII		19
<i>damiana</i> , Rees	XI	<i>savignyi</i> , Deshayes	XVIII		75
<i>damiana</i> , Rees	IV	<i>scabiuscula</i> , Rees	XIV		54
<i>damiana</i> , Rees	XV	<i>scabra</i> , Rees	XI		38
<i>damiana</i> , Gould	XVII	<i>semisagitta</i> , Latreill	XVI		64
<i>damiana</i> , Rees	XIV	<i>signata</i> , Rees	XV		56
<i>damiana</i> , Rees	XVI	<i>sinuagula</i> , Rees	XII		45
<i>damiana</i> , Rees	XVIII	<i>spectans</i> , Rees	XV		59
<i>damiana</i> , Turton	XIII	<i>Stena</i> , Gould	XVI		67
<i>damiana</i> , Rees	XIII	<i>stigmata</i> , Rees	IX		27
<i>damiana</i> , Rees	VI	<i>Stratum</i> , Latreill	XIII		47
<i>damiana</i> , Rees	XVI	<i>tegalata</i> , Rees	XII		44
<i>damiana</i> , Rees	XIII	<i>trichus</i> , Rees	XV		57
<i>damiana</i> , Rees	X	<i>uxami</i> , Rees	XVII		70
<i>damiana</i> , Rees	X	<i>varia</i> , Rees	XVIII		72
<i>damiana</i> , Rees	X	<i>zebra</i> , Rees	XI		36



















