



CONCHOLOGIA ICONICA:
OR,
ILLUSTRATIONS
OF THE
SHELLS OF MOLLUSCOUS ANIMALS.

VOL. VI.

CONTAINING MONOGRAPHS OF THE GENERA

VOLUTA.	ARTEMIS.	STROMBUS.
FISSURELLA.	LUCINA.	PTEROCERA.
PARTULA.	HEMIPLECTEN.	ROSTELLARIA.
ACHATINELLA.	OLIVA.	STRUTHIOLARIA.

BY

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"Almighty Cause! 'tis thy preserving care,
That keeps thy works for ever fresh and fair
Hence life acknowledges its glorious cause,
And natter owns its great disposer's laws,
Hence flow the forms and properties of things,
Hence rises harmony and order springs."—*Bygon*

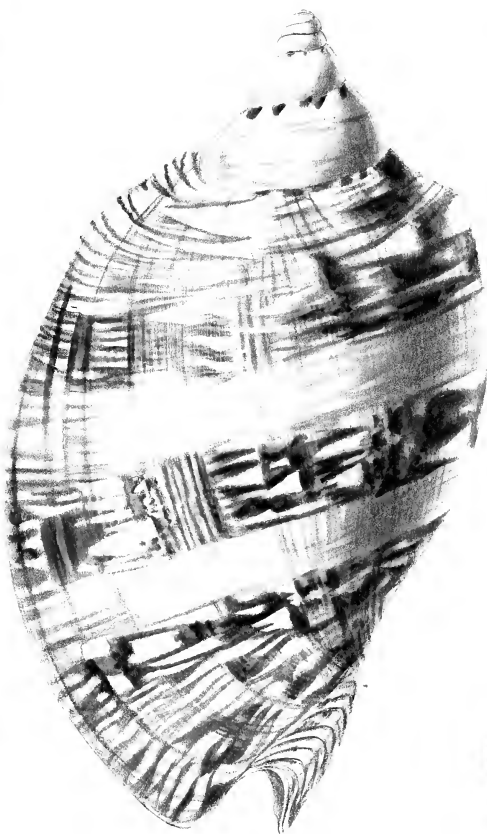
LONDON:
REEVE AND BENHAM, HENRIETTA STREET, COVENT GARDEN
1851.

MONOGRAPH

OF THE GENUS

V O L U T A .

A cycloidal shell
In trade placed up on the shallop's side,
A wondrous labyrinth where erst old dwell
A creature of the Indian was,—a cell
Fitted for Aphrodite. —*Robert Hood*



VOLUTA.

PLATE I.

Genus VOLUTA, *Linnaeus*.

Testa ovata vel fusiformis, basi late emarginata, spirâ unâ brevi, unâ acuminato-exsertâ, apicè plerumque plus minus obtusè papillari, interduâ levè nodulosa, anfractibus levibus vel tuberculatis, saepe rudè costatis, interduâ autem raris cancellatis, columella foetidee pliatâ, plicis duabus ad quinque, interduâ plicis tenuibus numerosis supra, aperturâ subaapilâ, labro parvâ incrassato, unguone crenato. Operculum corneum.

Shell ovate or fusiform, broadly emarginated at the base, spire now short, now acuminately exerted, apex generally more or less obtusely papillary, sometimes finely noduled, whorls smooth or tuberculated, often rudely ribbed, sometimes but rarely cancellated, columella strongly plaited, plaita two to five in number, with sometimes numerous fine plaita above, aperture rather large, lip but little thickened, never crenated. Operculum horny.

The Volutes, termed by an accomplished writer the nobles of Testacea, just as Linnaeus, in his admiration of the Palms, had then the princes of the vegetable world, have always been a favourite genus among collectors. They present an agreeable variety of form, a lively arrangement of colours, and many are of eminent rarity. In its geographical range the genus is peculiarly Australian; and owing to the diffusion of our empire into that distant region, whose fauna and flora are alike marked with a character singularly distinct from those of any other part of the world, we have become possessed of many species, and varieties of species, which, from a country more generally accessible, would have been more equally shared by other European cabinets. Of four-and-twenty species truly ascertained to be from that locality, only seven were known to Lamarck.

In reviewing the various modifications of character, our attention should be first directed to the most permanent feature of the genus,—the plaita of the columella. These are mostly four or five in number, strongly developed and winding round the pillar somewhat obliquely. In some few species they are reduced to two and three in number, and are more rudely constructed. Occasionally they vary a little in different individuals of the same species. In others there are four or five strong plaita, and several finer rudimentary plaita in addition. In form the Volutes are rather incessant; the same species being sometimes elongately convoluted, the spire proportionably exerted, and sometimes shorter and contracted. The same species is often smooth or tubercled, just as a Cone is smooth or granulated; and the closer and more contracted the growth of an individual, the thicker and more prominently is the shell raised in tubercles. The best characters for the distinction of species are to be found in

certain parts of the shell, such as the apex, the base, the general contour of the body-whorl, its texture and substance, the outline of the aperture, and, above all, in the general design of painting. However much a species may differ in its plan of convolution, the parts referred to are the same; and however variable a species may be in colour, there is but one idea in its pattern and manner of distribution. There is more constancy in the pencil of the Volute, than in the colours of its palette.

In most species of the genus *Voluta* the apex is blunt and papillary; that is, the first two or three whorls, constituting the nucleus of the shell, are smooth and polished, forming what has been called a papilla, before the appearance of any pattern or sculpture. In *V. fulgetrona* and *papillaris* the apex is of a very rude, uncouth growth; in *V. ovella* it has a peculiar rudely acuminated twist; in *V. festiva* and *rupestris* it has the appearance of a small ivory ball; in *V. scorpia* and *superciliata* the apex is very regularly formed, but still broad and obtuse; in *V. vesperilio* and *ovispa* it is slightly nodulous; in *V. rolea* and *reticulata* it is papillary but yet acuminated, the sutures being filled up with enamel; in *V. harpa* and *Gaillardi* it is sharp, without any papillary structure; and all these modifications of the apex are accompanied with distinctive features in other parts of the shell, serving to characterize groups, and so to divide the genus into subgenera or sections. Except in the little *V. abyssicola*, the first living representative of a group of fossil species found abundantly in the Tertiary Beds of Great Britain, there is no transverse sculpture in this genus.

Linnaeus included under the head of *Voluta* all shells having a row of plaita winding round the columella, without considering the nature or habits of their animal occupants. The *Turrotella*, whose shells are entire at the base; the *Loricula*, which, inhabiting the banks of stagnant water, are amphibious; the *Tuchinella*, which are emaculated; and the *Margiella*, whose shell is entirely enveloped by the soft parts, were all associated in the 'Systema Naturæ' under the same generic type. Even the 'Boats' and 'Melons,' 'Les Gondoliers' of Lamarck, are now separated from the Volutes, on account of their ventriose form and texture, to form a genus of themselves—*Cyathina*; and some authors have gone so far as to divide this again into *Cyath* and *Mela*.

The animal of *Voluta* differs little from that of *Cyathina*, except in being smaller, less expansive, and more brilliantly coloured. It has the same peculiar lobed dilation of the respiratory siphon, and the eyes, as in that genus, are rather distant from the tentacles. The species hitherto figured in a living state are brilliantly coloured, but there is no similarity between the pattern or colour of the animal and its shell. The *V. vesperilio* is of a bright yellow, marked with longitudinal interrupted black lines;

the *V. angulata*, of a rusty orange, marked with dark spots like a leopard; whilst the *V. niveosa* is purple, marked with unequal black spots edged with white. *V. musica* is the only species in which an operculum has been observed. It is small, oblong, thin, and horny, taken by Mr. Cuming from the living animal.

The geographical distribution of the Volutes is worthy of careful attention. Of sixty-one species at present known, twenty-four, as already stated, inhabit the coast of Australia. In the great eastern ocean, from Java to Japan, only twelve are found. Seven are from different parts of the coast of Africa, including Madagascar, six from South America, east and west, and four inhabit the West Indies and the Gulf of Mexico. Of the remaining eight species the locality is not known.

It may be observed, from this statement, that the Volutes have peculiarly a southern range. Only sixteen species are found north of the equator, whilst there are thirty-seven in the Southern Hemisphere, two of which, *V. Magellanicus* and *auvillii*, of large size, inhabit the coast of Patagonia and Tierra del Fuego, in the same parallel of latitude with Scotland and Hudson's Bay in the opposite hemisphere. Yet the Volutes do not approach the Mediterranean or any part of Europe; and it is curious to observe that the fine and beautifully coloured *V. musica* is the only species found in the West Indies, except the little *V. Guildingii*. *V. guttata*, a small species allied to this, inhabits the coast of Honduras; and it is believed on good authority that the celebrated *V. Javanica*, of which only a few specimens are known, is from the Gulf of Mexico, probably the northern shore, near the mouth of the Appalachicola River. Only two small species have been found on the western coast of South America, *V. harpa* and *Cumingii*; and of the African species the precise localities are unknown, excepting the *V. Dessestiana* of Madagascar, and the beautifully cancellated *V. abyssinica*, dredged from a bank of dead shells and iron stones, at the depth of 132 fathoms, off the Cape of Good Hope.

Species 1. (Mus. Cuming.)

VOLUTA CUMINGII. *Fol. testâ ovato-pyramidali, crassissimo, spirâ acuminatâ, apice acutâ, anfractibus superâ concavo-declivibus, declive nodulosis, aequalis, in costis tenuibus descenduntibus, columellâ triplicatâ, labro incrassato, intus medio subcontracto et obtusè dentato; albidâ, coraculo squulicisque adnatis, hic illic interruptè nigro-ciliatâ, apertura foveâ arcuatâ.*

CUMING'S VOLUTE. Shell ovately pyramidal, very thick, spire acuminated, sharp at the apex, whorls concavely slanting round the upper part, then nodose, nodules descending in swollen ribs, columella three-plaited, lip thickened, a little contracted and obtusely toothed in the middle; whitish, clouded with blue and brown, and filleted here and there in an interrupted manner with black, interior of the aperture orange.

BRODERIP. Proc. Zool. Soc., 1832, p. 33.

Hob. Gulf of Fonseca, San Salvador, Central America (dredged at the depth of nine fathoms); Cuming.

A thick solid shell, in which the columellar plait are transversely sculptured, and the lip faintly toothed within. Externally the shell is characterized by a row of swollen ribs which are noduled round the upper part. The colouring is of a mixed pattern of black, blue, and brown.

Species 2. (Mus. Brit.)

VOLUTA MAGNIFICA. *Fol. testâ ovato-ventricosâ, tenuicatâ, subaequaliter inflatâ, spirâ brevissimâ, apice papillari, anfractibus levibus, superâ leviter concavo-angulatis, basi subcontractis, columellâ quadruplicatâ, apertura patulâ, labro subulata, vix incrassatâ; fulvescente, ferrugineo-castaneo subulata et saturatiorè latifuscantâ, nuchis pallidis transversis lanceolato-angulatis intercalatè, columellâ ornatis-caraculâ.*

THE MAGNIFICENT VOLUTE. Shell ovately ventricose, rather thin, somewhat largely inflated, spire rather short, papillary at the apex, whorls smooth, slightly concavely angled round the upper part, a little contracted at the base, columella four-plaited, aperture wide open, lip simple, scarcely thickened; light fulvous, clouded and more darkly broad-banded with rusty chestnut, leaving transverse lunulevately angled pale spots, columella orange-carmine.

CHEMnitz, Couch. Cab. vol. xi. p. 8. pl. 174-5. f. 1693-4.

Hob. Rose Bay, Port Jackson, Australia; Stutchbury.

Well known by Chemnitz's admirable figures, this species remains unapproached by any other. It is of comparatively light growth, and never tubercled.

Species 3. (Mus. Cuming.)

VOLUTA HARPA. *Fol. testâ oblongo-ovata, crassissimâ, spirâ brevissimâ, apice acutâ, acuminatâ, anfractibus levibus vel minute striatis, concavo-tenuis, longitudinaliter late superficialiter sulcatis, columellâ transversim triplicatâ, basi recurvâ, apertura angustâ, labro rufè verrucoso, intus obtusè dentato; fulvescente-aurantiâ, coraculo-castaneoque nodisque subulatis et variegatâ.*

THE HARP VOLUTE. Shell oblong-ovate, very thick, spire rather short, sharply acuminated at the apex, whorls smooth or minutely striated, longitudinally broadly superficially grooved, columella transversely three-plaited, recurved at the base, aperture narrow, lip rudely varicose, obtusely toothed; fulvous orange, clouded and variegated throughout with blue and chestnut.

BARNES. Annals of the Lyceum Nat. Hist. of New York, vol. i. p. 139. pl. 9. f. 1.

Hob. St. Elena, West Columbia (from sandy mud at the depth of eight fathoms); Cuming.

A sharply ridged acuminated species, of the same type, colour, and general aspect, as *V. Cumingii*.



4 a

4 c

4 b

PLATE II

NO. 100

VOLUTA.

PLATE II.

Species 4. (Fig. *a, b, d*, Mus. Cunning; Fig. *c*, Mus. Brit.)

VOLUTA AULICA. *Vol. testâ oblongo-ovata, crassa, spirâ brevissimâ, subseriatâ, apice papillââ antecorâ subamplâ formante, angustibus subtilissimâ striatis, superâ declivibus, sâpissimâ leviter angulatis, ad angulâ tuberculatis, tuberculis compressis, paulatim decrescentibus, lat. coluâ spinoso-squamatis, columellâ fortiter quadruplicatâ, apertura longiusculâ, labio simplici; pallide aurantio-roseoâ, lineis tenuibus longitudinalibus unâque granulis convexo-angulis raris pictâ, interââ latifuscâ et rufecatâ, aurantis præcipuis nigerrimis.*

THE COURTIER VOLUTE. Shell oblong-ovate, thick, spire rather short, somewhat exerted, forming a rather large smooth papilla, whorls very finely striated, slanting round the upper part, most frequently slightly angled, tubercled at the angle, tubercles compressed, a little descending, sometimes spinously squamate, columella strongly four-plated, aperture rather long. Lip simple: pale orange-flesh tinged, variously painted with scarlet-red blotches and fine longitudinal lines, sometimes broadly banded and mottled, with a few black-brown spots.

SOLANDER. Sowerby, Tankerville Catalogue, App. p. 29, pl. 3.

Hab. Sooloo Archipelago: Cunning.

This eminently beautiful species has been known for many years by a specimen contained in the celebrated museum of the last century belonging to the Duchess of Portland, described in the Portland Catalogue as follows, by Dr. Solander, a Swedish naturalist and pupil of Linnæus, who, upon coming to this country, accompanied Sir Joseph Banks in his voyage round the world with Capt. Cook, and was subsequently employed at the British Museum in arranging the valuable collections of natural history resulting from their researches. "No. 1021. *Voluta aulica*, a beautiful red-clouded species of the Wild Music kind, its country unknown, unique." A description in Latin may also be found among the Banksian manuscripts in the British Museum. This specimen passed from the Portland Museum into that of M. Colonne, then into the collection of the Earl of Tankerville and of Mr. Broderip, and lastly into that of our national museum, where it remained unique until the return of Mr. Cumming from his voyage among the Philippine Islands, during which he obtained several magnificent specimens from the Sooloo Archipelago, mostly differing from the original one in being tuberculated. Of these Mr. Broderip characterized

six new varieties in the Proceedings of the Zoological Society for 1812. The accompanying figures, representing the most remarkable, were described by Mr. Broderip as follows:—

Fig. 4 *a*.

"Nodulous, whitish, lined with very close-set delicate pale yellowish undulated lines; body-whorl girt by two broad yellowish-red bands mottled finely with the ground colour. The upper band is bordered above with a row of rich dark-brown spots approaching closely to black, each spot being placed upon a nodule; the lower edge of this band is serrated as it were, and each of the teeth is marked with a spot immediately under the upper spots, but more dashed and somewhat less intense. The upper edge of the lower band is marked in a similar manner, but the spots are less defined. Above the shoulder of the body-whorl is a band of similar colour, with its lower edge dashed with markings of the same colour as those which ornament the other bands, and at similar intervals. Two similarly coloured spots appear below the third and fourth nodule of the spire just above the suture of the body-whorl, which suture almost hides one below the second of those nodules counting from the edge of the lip. Upper part of the spiral whorls coloured after the same pattern, and brought out by the pale ground-colour of the lower part. Apex yellowish-red."

Duly inspired by the novelty of the specimen and its lovely arrangement of colours, Mr. Broderip adds, "This description will convey a very faint notion of one of the most beautiful shells I ever saw."

Fig. 4 *b*.

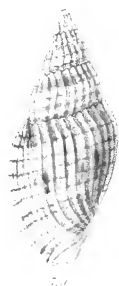
"Flesh-coloured, nodulous, lined longitudinally with close-set, red, somewhat undulated lines, notched here and there with white, girt by two interrupted rich red bands, spire mottled with red and white, apex coral-red."

Fig. 4 *c*.

The original specimen of the Portland Collection, now in the British Museum, devoid of tubercles and painted with large flakes of a dull brick-red colour.

Fig. 4 *d*.

"Bluntly but highly nodulous on the back, the nodules on the lower side rather sharper. Whitish, lined longitudinally with close-set undulated livid lines, blotched with clouds and dashes of livid red. A broad pale band girts the body-whorl below the middle. Apex reddish-white."



VOLUTA.

PLATE III.

Species 5. (Mus. Cuming.)

VOLUTA DELESSERTIANA. *Vol. testâ fusiformi-oblongâ, basi subconverâ, spirâ acuminatâ, anfractibus longitudinaliter lyrato-costatis, costis numerosis, angustis, acutiusculis, subfœcis, interstitiis striatis, transversaria obsolete perthosolentis, columellâ subacuminatâ, basi triplicatâ, plicis numerosis tenuibus filiformibus supra exsertis, apertura oblongo-ovata, labro incrassato, varicoso, margine orbeo. carinâ, annullis-râso profusè luteâ, lineis costarum et raris transversaria volutâ, apertura fauce albâ.*

DELESSERT'S VOLUTE. Shell fusiformly oblong, slightly recurved at the base, spire acuminate, apex sharp, whorls longitudinally lyrate ribbed, ribs numerous, narrow, rather sharp, somewhat flexuous, interstices striated, transversely obsolete marked with faint pricked grooves, columella slightly arched, three-plaited at the base, with numerous fine thread-like plaits above, aperture oblong-ovate, lip thickened, varicose, sharp at the edge; flesh-coloured, profusely stained with orange-red, transversely marked with red and chestnut lines, interior of the aperture white.

PETIT, *Magasin de Zoologie*. 1842, pl. 57.

Hab. Tiger Bay, Madagascar.

Distinguished from the *V. mitreiformis*, to which it is the nearest allied species, by its more acuminate growth, narrower and more numerous ribs, and bright orange-red colour.

Species 6. (Mus. Cuming.)

VOLUTA FUSIFORMIS. *Vol. testâ subelongato-fusiformi, basi contractâ et subampliciter emarginatâ, spirâ acuminatâ, apice papillari, anfractibus superne declivibus, deinde truncatis, laevis, sub lente vixante decussata striatis, columellâ tri-quadruplicatâ, plicis perobliquis, inconspicuis, apertura subangustâ, labro tenuicuto, parva reflexo; fœcis ovato-albis, lineis pallidè costarum, triangulariter configuratis, base reticulatis, columellâ et apertura fauce annulo-carneâ.*

THE SPINDLE-SHAPED VOLUTE. Shell somewhat elongately fusiform, contracted and rather largely emarginated at the base, spire acuminate, papillary at the apex, whorls slanting round the upper part, then a little swollen, smooth, minutely decussately striated beneath the lens, columella three-four-plaited,

plaits very oblique, inconspicuous, aperture rather narrow, lip rather thin, but little reflected, brownish white, loosely reticulated with light chestnut triangularly configured lines, columella and interior of the aperture orange-caruleous.

SWANSON, Appendix to Bligh Catalogue (not of Kiener).

Voluta Swainsoni (pars), Kiener.

Hab. Australia.

It has been remarked that this beautiful species is scarcely distinguishable from *V. papillaris*, but a comparison of the figures of each in this monograph, will show that, independent of form, they are characterized by a very different design of painting. The apex is much less papillary in the species under consideration, and the shell is uniformly larger, and of a more attenuated growth. The pattern consists merely of a loose irregular net-work of light chestnut, not disposed in bands of clouded blotches, nor exhibiting any sharply-defined triangular light spots.

Species 7. (Mus. Cuming.)

VOLUTA MITREIFORMIS. *Vol. testâ fusiiformi-ovata, spirâ subacuminatâ, anfractibus longitudinaliter lyrato-costatis, costis obtusis, subplano-convexis, interstitiis striatis, columellâ basi triplicatâ, plicis numerosis tenuibus filiformibus supra exsertis, apertura oblongo-ovata, labro incrassato, varicoso; albâ, areolis perperico-costarum fuscis pictâ, interstitiis lineis fœcis tenuibus transversaria volutis, apertura albâ.*

THE MITRE-SHAPED VOLUTE. Shell fusiformly ovate, spire rather acuminate, whorls longitudinally lyrate ribbed, ribs obtuse, rather flatly convex, interstices striated, columella three-plaited at the base, with numerous fine thread-like plaits above, aperture oblong-ovate, lip thickened, varicose, whitish, pointed with blotches of purplish chestnut, interstices marked transversely with fine brown lines, aperture whitish.

LAMARCK, *Ann. sans vert.* (Deshayes' edit.) vol. 10. p. 404.

Voluta annulo-costata, Broderip.

Hab. Australia.

This species is less sharply acuminate than the *V. Delesse-rtiana*, and the ribs are broader and about one-fourth less in number. The painting is very different, both in colour and design.



9.a

9.c

10.

VOLUTA.

PLATE IV.

Species 8. (Mus. Cuming.)

VOLUTA RUTILA. *Ful. testâ ovata, utrinque attenuatâ, crassiusculâ, spirâ brevi, apice papillâ anaptau, obsolete undulosa, furcata, angustibus laticibus, superâ declivibus, inferna, antica rari, tuberculatis, columellâ subrotatâ, quadruplicatâ, apertura elongato-ovata, labro simplici; carneo-sulcivata, sanguineo-robu creberrimâ confuse trigono-angulatâ et nebulatâ, et sub-obscurâ subrotâ trifurcatâ.*

THE BLOOD-RED VOLUTE. Shell ovate, attenuated at both ends, rather thick, spire short, forming a large obsolete nodulous papilla, whorls smooth, slanting round the upper part, sometimes, but rarely, tubercled, columella slightly arched, four-plaited, aperture elongately ovate, lip simple; flesh-white, very closely confusedly triangularly blotched and clouded with blood-red, and rather obscurely deeper-coloured in three bands.

BRODERIP. Zoological Journal, vol. ii, p. 30, pl. 3.
Hab. North-east Coast of Australia; Jukes.

The painting of this species does not consist of fine hair lines and blotches of scarlet-red, as in the *V. antea*, but of a confusedly mottled mass of deep blood-red colouring, forming numerous obscure triangular open patches, and three indistinct bands.

Species 9. (Mus. Cuming.)

VOLUTA INNEA. *Ful. testâ oblongo-ovata, spirâ breviusculâ, apice papillâ subangulata molulosa furcata, angustibus laticibus, superâ declivibus, lriter angulatis, inferna angulata undulosa-tuberculatis, columellâ fortiter quadruplicatâ; carneo-âllatâ, lineis tenuibus coccineo-fuscescentibus antequâ longitudinaliter subtilissimâ inæcâ, fasciis angustis laticibus saturatoribus.*

THE KNITTED VOLUTE. Shell oblong-ovate, spire rather short, forming a rather large nodulous papilla at the apex, whorls smooth, slanting round the upper part and slightly angled, nodulose tubercled at the angle, columella strongly four-plaited; flesh-white, longitudinally very finely knitted throughout with fine scarlet-brown lines, with three narrow darker bands.

Hab. — ?

An undescribed species, of which the locality is unknown. The entire surface is covered with a remarkable fine scarlet-brown net-work, very closely arranged transversely, so that the triangular spots of white, which appear here and there, are more longitudinal than usual, whilst the three bands which are somewhat indistinctly formed by a darker deposit of the colour, are unusually narrow. The specimen having lost a portion of the lip, it is so represented in the accompanying figure.

Species 10. (Mus. Brit.)

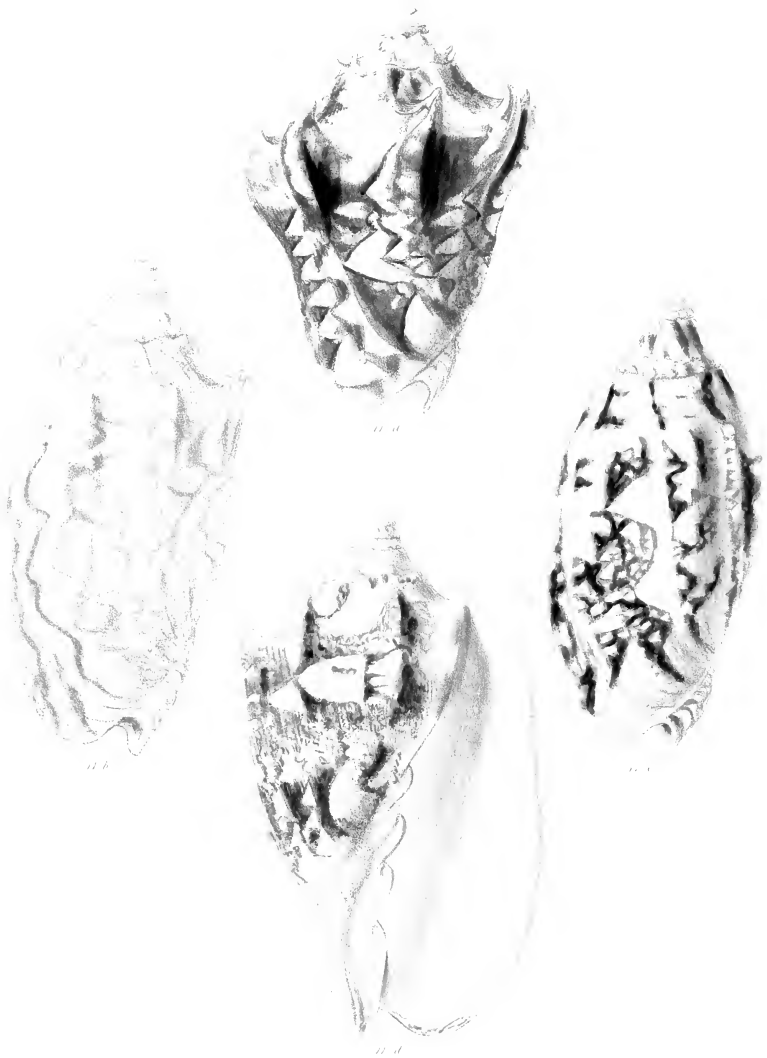
VOLUTA PAPILLARIS. *Ful. testâ subfusiformi-nebulâ, crassiâ, basi truncatâ, apice rotâ papillari, angustibus laticibus, superâ declivibus, deinde truncatis, columellâ rotâ tri-quinqueplacatâ, callusâ, apertura subangustâ, labro incrassatâ; fulvescente-âllâ, fulvescentibus reticulatâ et laticulatâ.*

THE PAPILLARY VOLUTE. Shell somewhat fusiformly ovate, thick, truncated at the base, very papillary at the apex, whorls smooth, slanting round the upper part, then rather swollen, columella rudely three- to five-plaited, callous, aperture rather narrow, lip thickened; fulvous white, reticulated and broadly banded with fulvous chestnut.

SWAINSON. Appendix to Bigh Catalogue.
Voluta Sowerbyi (Sars), Kieker.

Hab. Port Lincoln, Australia.

Mr. Swainson named this species *papillosa* with the view of drawing attention to the remarkable papillary structure of the apex, but as that word signifies "full of papillæ," it is better rendered *papillaris*. Taking it to refer to the painting, and confounding the species with *V. fusiformis*, M. Kieker has changed the name to do honour to Mr. Sowerby, "because the spots have so rarely the appearance of papillæ." Mr. Sowerby acknowledges the compliment, in language severe but not the less true, by calling it an absurdity. To add to this category of errors, M. Kieker gives the name *V. fusiformis* to Mr. Broderip's *V. Beckii*.



VOLUTA.

PLATE V.

Species 11. (Fig. 7, 8, 9, 10. Mus. Cuming.)

VOLUTA VESPERTILLO. *Vol. testâ ovata-oblongâ, crassiusculâ, spirâ brevi, apice subadistâ, nodulosa, anfractibus variis, superâ concavâ-convexâ, squamato-tuberculatis, tuberculis interstria fortibus, prominentibus, costis rudibus, antea raro, ferè obsolete, columella quadruperculâ, platis rotatis, apertura longiusculâ, lobis medio subcontractis; albidâ, aut variegatâ aut fuliginosâ. Anctâ, nigro-olivaceo, vel castaneo, vel saepe raris reticulatâ, apertura fovea concavâ-oblata.*

THE RAT VOLUTE. Shell ovately oblong, rather thick, spire short, rather obtuse and nodulous at the apex, whorls smooth, concavely slanting, squamately tubercled, tubercles sometimes strong and prominent, sometimes, but rarely, partially obsolete, columella four-plaited, plaits strong, aperture rather long, lip slightly contracted in the middle; whitish, or fleshinged, or fulvous, variously reticulated with blackish olive or chestnut or scarlet, interior of the aperture carnation-white.

1855-1858. Syst. Nat. (12th edit.) p. 1494.

Varieties

Voluta polisserpentis Lamarck.

Voluta serpentina Lamarck.

Voluta ~~serpentina~~ Lamarck.

Hab. Philippine Islands, Moluccas, &c.

Four Lamarckian species are now comprehended in this distinguished merely by slight modifications of growth and variety of painting. The shell Fig. 11*a* represents the type of the species, *V. vespertilio* true. The growth is short and broad, and the tubercles, very strongly developed, are thrown up into hooked scales and laterally compressed. Fig. 11*b* is the *V. serpentina* of Lamarck, of more oblong growth, less strongly tubercled, and marked with thin tortuous lines of painting, sometimes dark olive-brown, sometimes bright scarlet as in the specimen figured. Fig. 11*c* is a characteristic figure of *V. nitis*, in which the shell obtains an oblong-ovate form with the tubercles partially obsolete, and Fig. 11*d* is a representation of the *V. polisserpentis* in fine state. The colour is more elaborately reticulated, and has little indication of the triangular and tortuous lines which distinguish the other varieties.

Varieties may, however, be cited *ad infinitum*. Mr. Cuming has separated upwards of thirty in his cabinet.



13 a



12



14



13 b

VOLUTA.

PLATE VI.

Species 12. (Mus. Cuming.)

VOLUTA INTERPUNCTA. *Vol. testâ ovali, crassi, spirâ brevi, apice erecto, papillari, anfractibus duobus primis papillam formatibus, tertio quartoque superioribus plicatuloibus, plicis gradatâ evanidis, interstitiis transversis striatis, anfractibus cæteris lævibus, superâ truncatâ, inferâ, antica rari, obsolete tuberculatis, columellâ ses- ad octo-plicatâ, plicis superioribus parvis, quasi partibus, apertura longiorate, labro intus subincrassato, spirâ versus decurrente; carina albicante, punctis lineariibus costarum antequam scintilla circûlatâ, strigis purpureo-brunneis interribus longitudinaliter pictis, basi subaurantâ.*

THE DOTTED VOLUTE. Shell ovate, thick, spire short, apex erect, papillary, first two whorls forming the papilla, third and fourth whorl plicately nodated, the folds gradually vanishing, interstices transversely striated, rest of the whorls smooth, rather swollen round the upper part, sometimes, but rarely, obsolete tubercled, columella six- to eight-plaited, upper plaits small, as if divided, aperture rather long, lip somewhat thickened within, running up a little towards the spire; flesh white, encircled throughout with linear chestnut dots, sometimes longitudinally painted with purple-brown streaks, base tinged with orange.

MARTYS, Universal Conchologist, vol. iv. pl. 127.

Voluta Indica, Sowerby.

Voluta Lapponea, Linnaeus, Lamarck.

Streaked variety. *Voluta undata*, Martyn.

Hab. Ceylon.

I quite agree with Mr. Sowerby in the propriety of abandoning the name *Lapponea* given to this species, indicating a country and climate in which such a mollusk could not by any possibility exist. Instead of inhabiting the arctic shores of Lapland, it is a native of the seas of tropical India. The error did not, however, originate with Linnaeus. The species was known before his time to Dutch naturalists, as the '*Lapphoora*' or '*Lapphoora*,' signifying the Flap-Ear or Dog's Ear Shell. This seems to have been then corrupted into '*Alce Lapponea*,' '*Doba Lapponea*,' '*Voluta Lapponea*,' and Meuschen and Rumphius compounded of the name, '*Laplandische Lapphoora*.' It only remains a matter of wonder, that, whilst Seba described the species as an exotic shell from India, the error should have remained so long unexplained.

Species 13. (Mus. Cuming.)

VOLUTA FULGUREA. *Vol. testâ subglobosâ-oblongâ, tenuiculi, spirâ erectâ, apice papillari, anfractibus duobus et tertio papillam simplicem formatibus, cæteris anfractibus striatis, albâ lobata versus subaperturâ, columellâ triplicatâ; labâ et rugoseculo-aurante; strigis gradatibus costarum conspicuè fulgentiâ, interribus cæteris reticulatâ et sparsim aurantâ.*

THE LIGHTNING-FLASH VOLUTE. Shell somewhat fusiformly oblong, rather thin, spire exerted, papillary at the apex, the first two or three whorls forming a large papilla, the rest very minutely striated, last whorl slightly angled towards the lip, columella three-plaited; yellow or reddish-orange, conspicuously lightning-marked with large chestnut streaks, sometimes delicately reticulated and here and there spotted.

BRODERIP, Zoological Journal, vol. ii. p. 35. Sowerby, Tankerville Catalogue, pl. 4 and 5.

Hab. South Australia.

This fine species was first described by Mr. Broderip from a specimen of rather large size in the celebrated Tankerville collection, now in the British Museum. Since that period, several specimens of smaller dimensions, but more richly marked, have been received from South Australia. The painting is somewhat variable, being sometimes represented by a fine net-work of delicate colouring with only a few spots. The spire commences in a large, rudely convoluted papilla, which is in no degree concealed as the shell advances in growth. Another peculiarity of the species is, that the animal distributes a copious deposit of enamel over the body-whorl, not thickened and callous, but of a thin semi-transparent substance, and of a milky aspect, by which the painting is only partially obscured.

Species 14. (Mus. Cuming.)

VOLUTA RUFIPERIS. *Vol. testâ fusiformi, basi contractâ, apice papillari, anfractibus duobus primis papillam elongatam formatibus, tertio quartoque transversis impresso-striatis, longitudinaliter subplicatoscostatis, papillam et albâ subangulatis, cæteris fere evanidis, obsolete nodosis, strigis in scelis subtilibus auratis, perisertâ versus basem, columellâ octo-plicatâ, plicis*

irregularibus, carneo-albicante, strigis nodatis costaeo-
capis nulyque fulguratâ.

THE BLASTED VOLUTE. Shell fusiform, contracted at the base, papillary at the apex, the first two whorls forming an ivory-like papilla, the third and fourth transversely impressly striated, longitudinally plicately ribbed, penultimate and last whorl slightly angled, with the ribs almost fading, obsoletely noded, striae turned into fine grooves, especially towards the base, columella eight-plaited, plaits irregular; warm flesh-white, marked throughout with waved chestnut-red streaks.

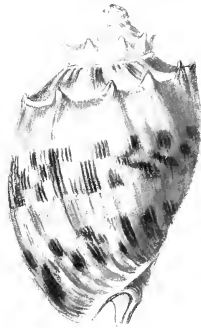
GMELIN, Syst. Nat. p. 3464.

Voluta fulminata, Lamarek.

Pulgoraria Chiuensis, Schumacher

Hab. China.

The *V. rupestris* varies considerably in size, but little in character. Its papillary apex has a peculiar rounded polished ivory appearance. The sculpture of the shell commences with regular longitudinal compressed ribs of rather a superficial character, and transverse impressed striae: the ribs become gradually noded, frequently obsolete, and the striae enlarge into the form of spiral linear grooves.



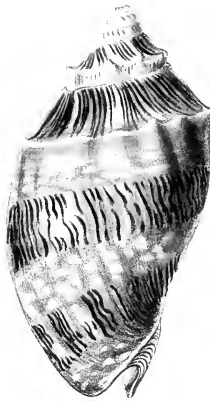
15.



16 a



16 b



17.

VOLUTA.

PLATE VII.

Species 13. (Mus. Cuming.)

VOLUTA NORRISII. *Vol. testâ, subquadrata-oratâ, ventricosa, spirâ brevi, apice obtusâ et nodulosa, anfractibus laevibus, superâe convexo-angulatis, ad angulâ spinesco-squamatis, columellâ subarenatâ, quadruplicatâ; floridâ et cirescente, lineis brevibus nigricantibus in aequalis olivaceo-irididans medio bifoveolâ et superâe tractâ, arcis later. fuscis olivaceo-iridid. umbulatis, aurculis lincisque niveis irregularibus sparsim floccatis, columellâ aurantiis-caracoidâ, aperturae fovee fuscescente-emerâ.*

NORRIS'S VOLUTE. Shell somewhat squarely ovate, ventricose, spire short, rather obtuse and noded at the apex, whorls smooth, concavely angled round the upper part, spinosely squamate at the angle, columella slightly arched, four-plaited; yellowish and greenish, two-banded round the middle and stained at the upper part with short blackish lines in olive-green blotches, arcs between the bands sparingly flaked with irregular snowy spots and hues, columella orange-caradion, interior of the aperture brown-ash.

OWERBY, Pro. Zool. Soc., 1844, p. 150; Thesaurus Conch. p. 201, pl. 51. f. 65.

Hab. Dampier's Island, Australia; Dring.

This species, which is not uncommon, differs constantly from *V. arcosa*, in being of a shorter and broader growth, ornamented with sharp spinose scales. It is also characterized by a more confused style of painting, of a peculiar sea-green tint of colouring. The open white flakes of *V. arcosa* are here represented by small broken opaque white lines. The shell is very similar in other respects, but in all the specimens I have seen, the peculiarities above noted are well marked, and apparently of specific importance.

Species 16. (Fig. n and b, Mus. Norris.)

VOLUTA PIPERATA. *Vol. testâ oblongo-oratâ, crassa, spirâ brevissimâ, apice subobtusâ et nodulosa, anfractibus laevibus, superâe convexo-declivibus, ad angulâ obsolete tuberculatis, columellâ quadruplicatâ; pallidâ convexo-circumscissâ, punctis auratis aurantio-fusca nudiq; creberrimâ pipematâ, strigis umbulatis stravos-nigricantibus, subdistansibus, longitudinaliter fulguratâ.*

fuscis tribus circumscissis partim abscentâ, columellâ, basi, et aperturae fovee circûe aurantiis-caracoidis.

THE PEPPERED VOLUTE. Shell oblong-ovate, thick, spire rather short, somewhat obsolete noded at the apex, whorls smooth, concavely slanting round the upper part, obsolete tubercled at the angle, columella four-plaited; light fleshy-ash, very closely peppered throughout with minute orange-brown dots, longitudinally lightning-marked with rather distant olive-black waved streaks, the colour being partially obscured with three bands of greenish-white, columella, base, and interior of the aperture bright orange-caradion.

OWERBY, Pro. Zool. Soc., 1844, p. 150; Thesaurus Conch. p. 199, pl. 51. f. 62.

Hab. — ?

The painting of this beautiful species in all its detail, is of too minute a character to be rendered in a figure. The entire surface of the shell is peppered, so to speak, with small orange-brown dots, and over this are a number of rather distant jagged olive-black streaks running in zigzag design from the sutures to the base. This being the design of the painting throughout, about one-half of it is partially obscured at intervals by three bands of greenish-white film, the pattern being seen through it.

The species is at present unique in the collection of Thomas Norris, Esq., to whom I am indebted for this opportunity of figuring it of the natural size.

Species 17 (Mus. Cuming.)

VOLUTA NIVOSA. *Vol. testâ orato-oblongâ, spirâ brevissimâ, apice subobtusâ et nodulosa, anfractibus laevibus superâe declivibus, subangulatis, ad angulâ plus minus absente convexo tuberculatis, inferâe subnucatis, columellâ quadruplicatâ; caradionis-plumbeâ, tuberculatis et umbulis pallidis, lineis nigris irregularibus confectis & saturis ad angulâ de seralibus, extra lineis nigris irregularibus tuberculatis utrob. bifoveolâ, arcis later. fuscis aequalis arcis sparsim floccatis, columellâ lincisque aurantio-caracoidis aperturae fovee subdâ fuscescente-emerâ.*

THE SNOWY VOLUTE. Shell ovately oblong, spire rather short, somewhat obtuse and noded at the apex, whorls smooth, slanting round the upper part, slightly

angled, more or less obscurely compressly tubercled at the angle, a little contracted towards the lower part, columella four-plaited; bluish lead-colour, tubercles and nodules paler, with irregular close-set black lines descending from the sutures to the angle, beneath neatly banded with irregular interrupted black lines, areas between the bands sparingly flaked with snowy spots, base and columella orange-carnelion, interior of the aperture dull brown-ash.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. 10, p. 389.

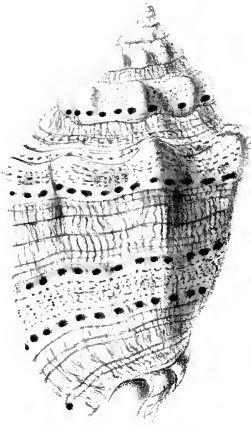
Hab. Swan River, Coast of Australia.

This species is frequently seen of a discoloured yellowish hue, instead of the rich lead-blue tint here represented, which is its true character. The tubercles are never absent; they are of an obtuse compressed growth, and not developed into spinose scales as in the *V. Norrisii* and *corona*.

It inhabits the shores of Garden Island, mouth of the Swan River, in great abundance.



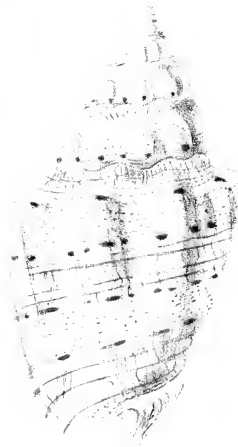
18.11



18.12



18.13



18.14

VOLUTA.

PLATE VIII

Species 18 (Fig. *a, b, c, d*, Mus. Cuming, and
Pl. IX, Fig. 18 *e*, Mus. Hudson.)

VOLUTA MUSICA. *Vol. testâ ovatâ, crassâ, basi pectiniter recurvâ, spirâ anac breviusculâ, anac exsertâ, apice subulnatâ; infractilibus lœvigatis, superâe angulato-denticulatis, fortiter tuberculatis, tuberculis in costis plus minus obsolete descendens; albidâ aut fulvescenti-cornuâ, aut castanea, aut cerulea, aut rosea, vel ornata lineâ et nebulatâ, lineâ fuscâ conspicuâ trifasciatâ, tuberculâ lineâ subulnatâ, e suturis descendens, longitudinaliter notatis, areas inter foveas creberrimè fuscopunctatis, maculis nigris subtergenter marginatis, apertura carnea-aurantia, labio nigro-umbilicâ.*

THE MUSIC VOLUTE. Shell ovate, thick, peculiarly recurved at the base, spire sometimes rather short, sometimes exserted, rather obtuse at the apex; whorls smooth, angularly slanting round the upper part, strongly tubercled, tubercles descending in more or less obsolete ribs; whitish or fulvous-flesh tint, stained and clouded with chestnut, or rose, or blue, or orange, conspicuously encircled with three bands of brown lines, marked longitudinally in the interstices with slightly waved lines descending from the sutures, areas between the bands very closely dotted with brown, and somewhat irregularly edged with black blotches, aperture flesh-orange, lip spotted with black.

LINÆUS, Syst. Nat. (12th. edit.) p. 1191
Varietates.

- Voluta chlorosina*, Lamarek.
- Voluta thiarella*, Lamarek.
- Voluta caraculata*, Lamarek.
- Voluta larigata*, Lamarek.
- Voluta sulcata*, Lamarek.
- Voluta nodulosa*, Lamarek.

- Voluta Guianica*, Lamarek.
- Voluta Guianensis*, Chemnitz.
- Voluta plicata*, Billwyn.

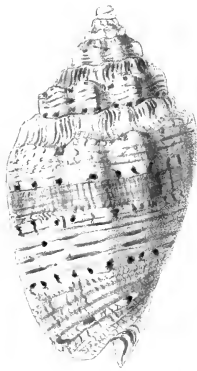
Hab. West Indies.

This very beautiful and well-known shell appears to have discoursed most eloquent music to the mind of Lamarek; for under it he has comprehended eight species, indicating so many varieties of one and the same. The richly-coloured specimen of broad and solid growth and prominent tubercles, Fig. 18 *b, c*, may be regarded as the type of the species. *V. chlorosina*, on the authority of M. Kiener, is the same in bad condition. *V. thiarella*, characterized by its elongated growth and pale colouring, is the variety Fig. 18 *d*. *V. Guianica*, distinguished by its rich violet and brown-clouded colouring, is represented by the variety Fig. 18 *a*. *V. caraculata*, known to collectors by its delicate pink colouring and smaller size, is figured at Pl. IX, Fig. 18 *e*. *V. sulcata* is a light fawn variety, approaching in size and appearance to the last, in which the ribs depending from the tubercles, more or less obsolete in all the varieties, are rather more prominent in this, whilst the shell is not unfrequently granulated. *V. larigata* is founded upon a state of the species the reverse of the preceding, having little indication of ribs or tubercles; and *V. nodulosa*, according to M. Kiener, is a variety in bad condition, probably granulated.

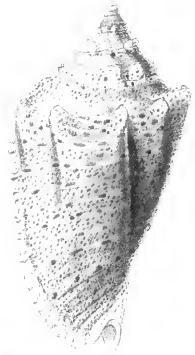
It is almost needless to particularize varieties, excepting truly to show of what these Lamarekian species are constituted, and of which the intermediate states may be seen in the Cumingian and other collections. The same design of painting, consisting of two broad bands of blotched lines, with intermediate areas of dots, pervades the whole; and the tubercles are only the more prominently developed as the shell is less narrowly elongated in growth, arising out of a more contracted plan of convolution.



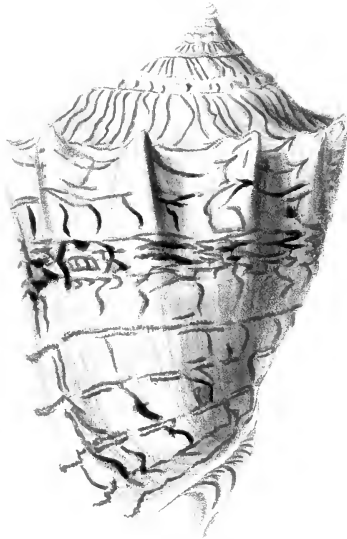
18 e



20 a



19



20 b

VOLUTA.

PLATE IV.

Species 19. (Mus. Cuming.)

VOLUTA VIRESCENS. *Fol. testâ conico-ovata, crassiusculâ, spirâ brevi, apice subacutâ, anfractibus transversis et lobis limbo-solatis, saperâ concaeco-angulatis, ut angulâ ventè tuberculatis, tuberculis in costis gradatim etanidis descenduntibus, columellâ multiplicatâ, plicis irregularibus, aperturâ angustâ, labro subreflexo; cervice, dense nigro-punctatâ, zonis amareosis equidistantibus angustis immaculatâ, nisi punctis per-purâcis nigris angustis, labro nigro-maculatâ.*

THE GREENISH VOLUTE. Shell conically ovate, rather thick, spire short, rather sharp at the apex, whorls transversely closely linearly grooved, concavely angled round the upper part, sharply tubercled at the angle, tubercles descending into gradually vanishing ribs, columella many-plaited, plait irregular, aperture narrow, lip slightly reflected; greenish, thickly black-dotted, with numerous equidistant narrow zones unspotted except by a few black dots of larger size, lip black-spotted.

SOLANDER, Dillwyn, Catalogue of Shells, vol. i. p. 562.

Murex insularis rivulâs, Martini.

Voluta polycaulis, Lamarek.

Voluta fulca, Lamarek.

Voluta pusio, Swainson.

Hab. West Africa.

Dr. Solander's manuscript name for this species was published in Dillwyn's 'Catalogue of Shells' during the progress of Lamarek's 'Animaux sans Vertèbres' two or three years before the appearance of genus *Voluta*, and therefore has priority. Mr. Swainson's *Voluta pusio*, which may be seen in the British Museum, is merely a worn, discoloured specimen of *V. virens*, so far as it is possible to judge by its similarity of form and the faint traces of marking that remain. Mr. Sowerby has published a figure of it in his 'Thesaurus Conchyliorum,' but the colouring is rather exaggerated. The specimen is in a condition in which no shell ought to be described, unless presenting some new typical peculiarity of form.

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

VOLUTA HEBREA. *Fol. testâ ovali vel oblongo-ovalâ, crassâ, ponderosâ, spirâ interdua brevi, interdua exertâ, apice subpapillari, anfractibus levibus aut transversis obscure latis, saperâ gibboso-angulatis, plerumque fortiter tuberculatis, columellâ fortiter quinqueplicatâ, saperâ plicis parvis amareosis aut obsolete; pallidâ fuscescente-varicâ, lineis irregularibus concentricis transversis et e suturis descenduntibus, aurantisque hieroglyphicis, intense nigro-aurantâ, varâ fasciatâ plicâ, interdua, antea raro, aurantio-rufo bifasciatâ, labro nigro-maculatâ.*

THE HEBREW VOLUTE. Shell ovate or oblong-ovate, thick, ponderous, spire sometimes short, sometimes exerted, apex somewhat papillary, whorls smooth or transversely obscurely ridged, gibbously angled round the upper part, generally strongly tubercled, columella strongly five-plaited with small plaits above, either numerous or obsolete; light brownish flesh-colour, variously painted in a banded style with irregular vein-like lines, transverse, also descending from the sutures, and hieroglyphic blotches, of very dark chestnut, sometimes but rarely encircled by two bands of orange-red, lip spotted with black.

LINNEUS, Syst. Nat. (12th. edit.) p. 1194.

Buccinaa carinata, Martyn.

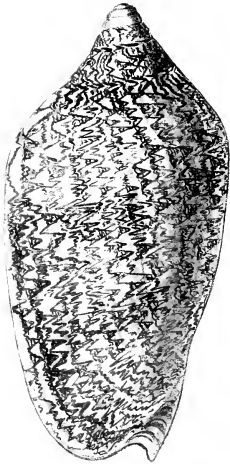
Pale red variety. *Voluta terbinata*, Kiener.

Hab. West Africa.

This fine species varies considerably, with the spire sometimes short, sometimes exerted, in which latter case the tubercles are so much the less prominently developed. It is the 'False Music Shell' of the old conchologists: the *Buccinaa insularis spuria* of Scha, *Murex insularis spuria* of Martini, *Thana insularis Hebraica* of Klein, and the *Wilde Muschel-hoorn* of the Dutch. None of the varieties have the bands of lines or dots of the true *V. insularis*.

Fig. 10 e. (Mus. Hudson.)

The red variety of *V. insularis*, referred to in the preceding plate as being Lamarek's *Voluta carinata*.



22 a



21



22 b



22

VOLUTA.

PLATE X.

Species 21. (Mus. Cuming.)

VOLUTA SOPHIA. *Fol. testâ subquadrato-ovata, basi æversus contractâ, spirâ brevi, apice obtusâ et nodulosa, anfractibus lævibus, superâe concavo-angulatis, ad angulum acutè spinoso-squamatis, columellâ quadruplicatâ, aperturâ subdivisatâ: fulvescente-alba, maculis periparicis parvis castaneo-rufis seriatim tractâ.*

THE SOPHIA VOLUTE. Shell somewhat squarely ovate, contracted towards the base, spire short, obtuse and noduled at the apex, whorls smooth, concavely angled round the upper part, sharply squamately spined at the angle, columella four-plaited, aperture somewhat dilated: light fulvous white, stained with rows of chestnut-red spots.

GRAY, Narrative of the Voyage of the Fly?

Hab. North Coast of Australia: Jukes.

Closely allied in form to *V. Norrisii*, it differs in being encircled with four rows of distant chestnut-red spots, of which there is no trace in that species.

Species 22. (Mus. Crotch.)

VOLUTA EXOPTANDA. *Fol. testâ cylindraceo-oblongâ, sub-Olivaformi, spirâ brevi, conicâ, apice papillari, anfractibus lævibus, superâe declivibus, deinde truncatis et gradatim attenuatis, columellâ fortiter quadruplicatâ, aperturâ subangustâ, labro parvo incrassato; pallidè roseo-aurantiâ, indistinctè bifasciatâ, lineis subtilibus acutè nodulatis castaneo-rufis adæque densè proniscentè pictâ, columellâ et aperturæ fauce rividè aurantio-corneolis.*

THE MUCH-DESIRED VOLUTE. Shell cylindrically oblong, somewhat Olive-shaped, spire short, conical, obtusely papillary at the apex, whorls smooth, slanting round the upper part, then rather swollen, and gradually attenuated, columella strongly four-plaited, aperture rather narrow, lip but little thickened; pale rose-orange, faintly two-banded, densely proniscently painted throughout with sharply waved fine chestnut red lines, columella and interior of the aperture rich orange-carilion.

SOWERBY, MS.

Hab. Port Lincoln, South Australia.

This very beautiful new Volute, from the collection of the Rev. W. R. Crotch, remarkably distinct from any species hitherto known, may be regarded as the type of a new section of the genus, partaking of the Cone and Olive form. It is of a delicate orange-roseate hue, crowded throughout with fine sharply zigzag chestnut-red marks, exhibiting two faint bands. The body-whorl is covered with an extremely thin deposit of enamel of a milky hue, by which the painting is only very slightly obscured, whilst the columella and interior of the aperture are of a rich orange-red carilion. Near the lip the painting suddenly assumes a more exact style of pattern, disposed in triangular reticulations of a darker bluish tint, as if the pencil, so to speak, of the animal had been labouring up to this time in a disturbed condition. It is the only specimen that has been yet seen.

Species 23. (Mus. Crotch.)

VOLUTA FERUSSACI. *Fol. testâ ovata, ventricosa, basi subtruncatâ, spirâ brevi, suturis rubibus, apice papillari, anfractibus lævibus, cel. liris incrementi rugatis, superâe rotundatis, columellâ subdepressa, quadruplicatâ, plievâ anticâ calidâ, posturâ subobsoletâ, aperturâ pulatâ; sordidè spadiceo-fuscescente.*

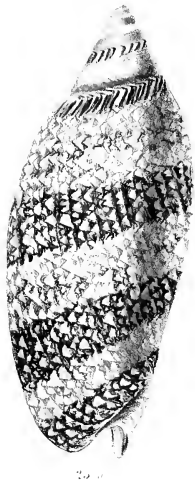
FERUSSAC'S VOLUTE. Shell ovate, rather ventricose, somewhat truncated at the base, spire short, sutures rude, apex papillary, whorls smooth, or roughened with ridges of growth, rounded at the upper part, columella rather depressed, four-plaited, front plait strong, hind plait nearly obsolete, aperture wide open; dull bay brown.

DONOVAN, Naturalist's Repository, vol. ii. pl. 67.

Folata rufis, Gray.

Hab. —?

An extremely rare species, described and figured some five and twenty years since by Mr. Donovan, from a polished specimen, which he states to have been treated for a long while previous in a private cabinet. It was supposed to have been received from the Strait of Magalhæns. The specimen here figured is from the collection of the Rev. W. R. Crotch, and there are two or three in the British Museum, of which the locality is equally unknown.



VOLUTA.

PLATE XI.

Species 24. (Mus. Cuming.)

VOLUTA VOLVA. *Vol. testâ elongato-ovata, utrinque attenuatâ, spirâ acuminatâ, papillari, apice subovata, anfractibus levibus, aëneolis, concoloris, superâ declivibus, columellâ obliquè quadruplicatâ, apertura subangustâ, labro vix incrassato; limbo-fuscovirescente-albâ, fuscovirescente obscure bifasciatâ, lineis subtilibus aequaliter indistinctè longitudinaliter notatâ, spirâ suturis castaneo-fusco partia lineis et punctatis.*

THE SHUTTLE VOLUTE. Shell elongately ovate, attenuated at each end, spire acuminate, papillary, rather sharp at the apex, whorls smooth, shining, convex, slanting round the upper part, columella obliquely four-plaited, aperture rather narrow, lip but slightly thickened; livid fulvous white, encircled with two obscure light-brown bands, and indistinctly longitudinally marked with fine waved lines, sutures of the spire partially stained and dotted with chestnut-brown.

CULMELITZ, Conch. Cab. vol. x. p. 113. pl. 148. f. 1389-90.
Voluta pallida, Gray.

Hab. Mouth of the Swan River, Australia.

I cannot doubt of this being the *Voluta volva*, founded by Lamarek with the *Voluta florivorus* under the name *V. volucæa*. The *V. Tanceri* of Mr. Gray, represented by Mr. Sowerby as a variety of this species, is certainly distinct, and the shell figured by Mr. Sowerby (Thes. Conch. pl. 53. fig. 94) as another variety, is the type of my *V. reticulata*. The very delicate waved lines of colour which characterize the *V. volva* are more frequently absent or obliterated than present, and are rarely more distinctly marked than in the accompanying figure.

Species 25. (Mus. Demisson.)

VOLUTA RETICULATA. *Vol. testâ elongato-ovata, spirâ subacuminatâ, papillari, apice aculeosculâ, anfractibus levibus, concoloris, superâ declivibus, columellâ quadruplicatâ; fuscovirescente-albâ, fusco-castaneo ad suturas lineâ et suturâ strigatâ, et aëdipe subtiliter trigonis reticulatâ, reticulâ ad basin et in fasciis duabus suturâ confusâ, columellâ et apertura fusce fusco-castaneis.*

THE RETICULATED VOLUTE. Shell elongately ovate, spire somewhat acuminate, papillary, rather sharp at the apex, whorls smooth, convex, slanting round the upper part, columella four-plaited; fulvous white,

stained and darkly streaked at the sutures, and finely triangularly reticulated throughout with fulvous chestnut, the net-work being darker and confused at the base and in two bands, columella and interior of the aperture fulvous chestnut.

REVEY, Pro. Zool. Soc. 1843. p. 144.

Hab. North of Swan River Settlement, Australia: Dring.

This fine shell, from the collection of Mr. Demisson, is the true type of the species under consideration, described by me on its arrival in the Beagle in 1843. Another specimen, equal in size and not much inferior in colour, is in the collection of Mr. Norris, and a third, of smaller size but richly coloured, in the Cumingian collection, figured inadvertently by Mr. Sowerby as a variety of the preceding species. Besides these, there are three specimens of a very distinct variety, if not specifically distinct, in the collections of Mr. Metcalf, Mr. Gibbs, and the British Museum, in which the shell is more ventricose and the net-work of rather a different character, figured by Mr. Sowerby (Thes. Conch. pl. 49. f. 47, 48) as *V. reticulata* true. The dark marks along the sutures are also somewhat different. The specimens are very much worn, but they present a peculiarity of character which may prove to be of some specific importance.

Species 26. (Mus. Cuming.)

VOLUTA UNDELATA. *Vol. testâ elongato-ovata, crassâ, basi subconvolutâ, spirâ breviusculâ, subacuminatâ, anfractibus levibus, superâ declivibus, deinde tumidiusculis, columellâ quadruplicatâ; ferruginoso-albâ vel obscureâ, lineis castaneis flexuosis conspicuè longitudinaliter partâ, columellâ et apertura fusce ricidè rufonuculis.*

THE WAVED VOLUTE. Shell elongately ovate, thick, slightly twisted at the base, spire rather short, somewhat acuminate, whorls smooth, slanting round the upper part, then a little swollen, columella four-plaited; rusty or ivory white, conspicuously longitudinally painted with flexuous chestnut lines, columella and interior of the aperture bright red-orange.

LAMAREK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 401.

Hab. Tasmania, and Gipp's Land, South Australia.

This well-known species varies from a polished-ivory white to a rusty red-brown, but is always characterized by the same design of longitudinal waved lines.



VOLUTA.

PLATE XII.

Species 27. (Mus. Cuming.)

VOLUTA TURNERI. *Vol. testâ oblongo-ovata, basi subtruncatâ, spirâ breviusculâ, apice papillari, cix acuminatâ, anfractibus lævibus, superâ declivibus, deinde tenuiusculis, columellâ quadruplicatâ; albâ, lineis obliquis subflexuosis castaneis conspicuè pictâ, maculis saturatioribus ad suturas, nunculis pallidioribus majoribus bifusciatâ.*

TURNER'S VOLUTE. Shell oblong-ovate, somewhat truncated, spire rather short, apex papillary and slightly acuminated, whorls smooth, slanting round the upper part, then rather swollen, columella four-plaited; white, conspicuously painted with slightly flexuous oblique chestnut lines, with darker spots at the sutures, and encircled by two bands of faint spots of larger size.

GRAY. Griffith's Cuvier's Animal Kingdom, Moll. Pl. 40. f. 1.

Hab. South Australia.

The oblique strong linear painting which characterizes this species must not be confounded with the faint longitudinal wavel lines which are sometimes present in the *V. colea* (*V. pallida*, Gray, of which Mr. Sowerby considers this a variety). The bands are formed of two rows of faint under-colour in blotches, not of riband-like painting, and the shell is uniformly of smaller size.

Species 28. (Fig. a. Mus. Crotch; Fig. b, c. Mus. Demisson.)

VOLUTA FESTIVA. *Vol. testâ ovato-fusiformi, tenuiculâ, atate crassiore, spirâ exsertâ, pyramidalî, apice rudè globoso-papillari, anfractibus lævibus, basi striatis, superâ angulatis, longitudinaliter costatis, costis inaequalibus, equidistantibus, juxta suturas obsolete, ad angulum compressè tuberculatis, columellâ prope basin rudè triplicatâ, quarum plicâ medianâ majore, plicis numerosis tenuibus filiformibus, partim obsolete, superâ, aperturâ oblongâ, labro subincrassato; corneo-albicante, coccineo-rafo eivide latifusciatâ, fuscis hic illic interruptis, atate gradatim evanidis, areis inter fuscis lineis brevibus guttisque fuscis irregulariter notatis, columellâ aurantiâ, basi et parte superiori in adultâ intus castaneo-nigris, aperturâ fuce aurantiâ lineatâ.*

THE HANDSOME VOLUTE. Shell ovately fusiform, rather thin, increasing thicker with age, spire exserted,

pyramidal, rudely globosely papillary at the apex, whorls smooth, striated at the base, angled round the upper part, longitudinally ribbed, ribs rather swollen, equidistant, obsolete next the sutures, compressly tubercled on the angle, columella rudely three-plaited near the base, of which the middle plait is the largest, with numerous fine thread-like plaits above, which are partially obsolete, aperture oblong, lip rather thickened; flesh-white, broadly banded with bright scarlet-red, bands here and there interrupted, gradually vanishing with age, areas between the bands irregularly marked with short brown lines and blotches, columella orange, base and upper part stained in the adult with deep chestnut-black, interior of the aperture tinged with orange.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 404. *Hab.* Africa (East Coast?)

This beautiful species has only been known hitherto by a worn imperfect specimen in the Muséum of the Jardin des Plantes, Paris. Lamarck, noting its specific peculiarities, undertook to describe it, about the year 1820, as new, observing that it "approaches *V. Magellanica*, but is very distinct and more ornamented." It will be seen from this observation, that Lamarck had little notion of the noble growth and bright scarlet colouring of the species, now exhibited in these magnificent specimens from the collections of the Rev. W. R. Crotch and Mr. Demisson; by which it is illustrated in its perfection and in different stages of growth. It will be observed totally to differ from *V. Magellanica*, and cannot be admitted into the same section of the genus. Its true place is with the *V. musica* and *Hebraea*. Mr. Demisson's richly painted specimen, of which the brightness of the colour is not in the least degree exaggerated in our figure, is of rather light structure, the spire forming an even pyramid of angular ribs. Before me is another specimen from the same collection more advanced in age, in which the colouring is of a paler scarlet hue, and commences to be broken up in large interrupted patches; and in the fine adult specimen from Mr. Crotch's collection, the scarlet painting is only partially distributed, the brown fragments of lines remaining here and there, whilst a rich dark chestnut-black layer of enamel is deposited at maturity about the base and upper extremity of the columella. The columellar plaits consist of three very prominent ones at the base, of

which the middle is the largest, and there are several fine thread-like plaits above, as in the *V. zansia* and its congeners, which are more or less obsolete.

Concerning the locality of this species Mr. Demison writes me:—"I met with these shells in Liverpool, and from inquiries made at the time, my impression is that they were from some part of the Eastern Coast of Africa." Mr. Crotch, in part confirming this opinion, writes:—"All that I can say of the locality of *Voluta festiva*, is, that it was brought to Liverpool by the captain of a ship from the coast of Africa, but whether east or west I know not."

M. D'Orbigny, confounding the *V. Magellanica* with this species, owing, probably, to Lamarek's erroneous comparison, says, "It is evident that the *Voluta festiva* was only known to Lamarek in a very young state, in which it is slightly ribbed and tubercled, but as the shell increases it loses the tubercles and becomes almost smooth. It inhabits the entire coast of Patagonia, from Bahía Blanca to the strait of Magalhaens. We have collected it to the south of the Rio Negro, and in all the tents of the Patagonians encamped on the Rio Santa Cruz we observed this shell in use as a drinking cup."

These interesting observations of M. D'Orbigny refer without doubt to the *Voluta Magellanica*. The *Voluta festiva* is a species from some part of Africa, of which only a few specimens have yet been seen, and in which the tubercles are more prominently developed as the shell advances in growth.

Species 29 (Mus. Cuning.)

VOLUTA PRIFENTA. *Vol. testâ subelongato-ovata, basi truncatâ, spirâ breviusculâ, apice papillari, subacuminatâ, anfractibus superne declivibus, deinde plano-convexis, columellâ triplicatâ, apertura subeffusâ, tubercis incessantibus; albâ, fulescente-fusca nudiq; nitidè subtiliter reticulatâ, anfractuâ margine laterali interne costano maculatâ, maculis flexuosis linearibus distantibus bifasciatâ, apertura fusca costano lineatâ.*

THE LACE VOLUTE. Shell somewhat elongately ovate, truncated at the base, spire rather short, papillary and slightly acuminate at the apex, whorls slanting round the upper part, then flatly convex, columella three-plaited, aperture slightly effused, lip scarcely thickened: whitish, neatly finely reticulated throughout, sutural edge of the whorls spotted with very dark chestnut, and encircled with two bands of distant flexuous linear spots, interior of the aperture tinged with chestnut.

Hab. North Coast of Australia: Jukes.

This little species belongs to that section of the genus comprising *V. volca*, *Turveri*, and *reticulata*, from which I have no hesitation in pronouncing it to be distinct. The net-work is not the net-work of *reticulata*, it is from a different loom, and the bands, composed of a few very characteristic flexuous streaks, have no affinity of design with those of the congeneric species, all of which are eminently distinct from each other though modelled on the same specific type.



31 a



30



31 b



32

VOLUTA.

PLATE XIII.

Species 30. (Mus. Cuming.)

VOLUTA MACULATA. *Vol. testâ subpapillari-oblongâ, crassiusculâ, spirâ brevi, apice papillari et obtusâ, anfractibus laevibus, politis, superâe declivibus, deinde tumulis, columellâ quadruplicatâ, aperturâ elongatâ, labro rix verrucosâ: cinctâ aurantio-luteâ, lineis irregularibus castaneis, carneo-ubulatis, fuscis.*

THE SPOTTED VOLUTE. Shell somewhat pyriformly oblong, rather thick, spire short, obtuse and papillary at the apex, whorls smooth, polished, slanting round the upper part, then swollen, columella four-plaited, aperture elongated, lip scarcely thickened: bright orange-yellow, banded with irregular blue-clouded chestnut lines.

SWAINSON, Exotic Conchology, p. 23. pl. 38.

Hab. Australia.

A delicate bright orange-yellow shell, of rather solid growth, banded with chestnut lines, clouded behind with blue, the lines not being parallel to each other, but straggling and at irregular intervals. Another specimen in the British Museum is of rather larger size, but less distinctly marked, than that here represented from Mr. Cuming's collection.

Species 31. (Mus. White.)

VOLUTA MARMORATA. *Vol. testâ oblongâ, tenuiculâ, ventricosâ, basiæ versus gradatâ attenuatâ, spirâ brevi, acuminatâ, apice subpapillari, anfractibus laevibus, superâe convexo-angulatis, ad angulâ subtiliter acutâ tuberculatis, deinde inflatis, columellâ fortiter quadruplicatâ, aperturâ elongatâ, labro subverrucosâ, effuso: fulvescente-aurantiâ, lineis subtilibus castaneis, latè undulatis, hic illic e suturis descendebantibus, in fasciis duabus concinâe carneo-ubulatis, columellâ et aperturae fance aurantio-carneis.*

THE MARBLED VOLUTE. Shell oblong, rather thin, ventricose, gradually attenuated towards the base, spire short, somewhat papillary at the apex, whorls smooth, concavely angled round the upper part, finely sharply tubercled at the angle, then inflated, columella strongly four-plaited, aperture elongate, lip slightly thickened, effused; fulvous orange, with fine broadly waved chestnut lines descending here and there from

the sutures, and prettily blue-clouded in two bands, columella and interior of the aperture orange-carnieon.

SWAINSON, Exotic Conchology, Pl. I.

Hab. Australia.

It was with this delicate and prettily marked species, that Swainson, a great admirer of the Volutes, commenced his 'Exotic Conchology.' Though differing materially from the preceding species in form, by its light inflated structure, it partakes somewhat of the colour and design of painting, the ground that being of a fulvous orange hue, while the bands are formed by a similar blue-clouded shading of the markings. The specimen here figured from the collection of Henry Hopley White, Esq., is about the ordinary size of the species, which varies considerably in this respect, as may be seen by one in the British Museum of nearly twice the dimensions.

Species 32. (Mus. Cuming.)

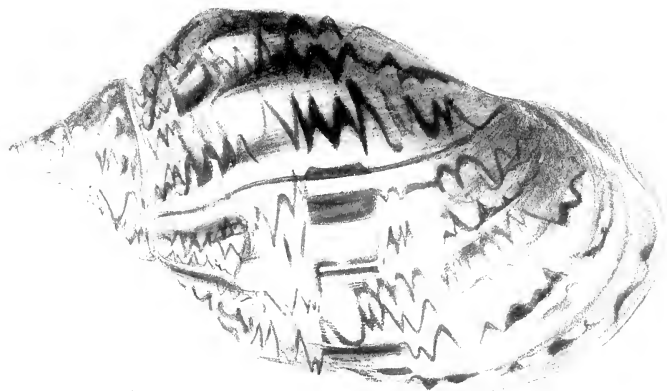
VOLUTA VEXILLUM. *Vol. testâ oblongo-acutâ, crassâ, spirâ breviusculâ, acuminatâ, apice erectâ, papillari, anfractibus laevibus, superâe angulatis, ad angulâ acutâ compressè tuberculatis, columellâ fortiter quadruplicatâ, plisâ perparvâ parvâ irregularibus supra, aperturâ scissâ, labro acuto, effuso; costæ-oblâ, locis angustis, rictu aurantiis, prope laberâ divisâ, natiqve singulatâ.*

THE FLAG VOLUTE. Shell oblong-ovate, thick, spire rather short, acuminated, erect and papillary at the apex, whorls smooth, angled round the upper part, sharply compressedly tubercled at the angle, columella strongly four-plaited, with a very few small irregular plaits above, aperture semioval, lip sharp, effused, pinkish-white, encircled throughout with narrow ribands of bright orange which become divided near the lip.

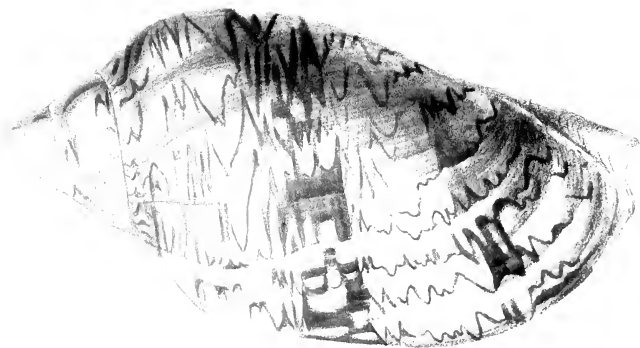
CHEMnitz, Conch. Cab. vol. x. p. 152.

Hab. Ceylon.

This eminent shell, the 'Pavillon d'Orange' and 'Orange Flag' of early writers, is still of rare occurrence, and unapproached by any other species of the genus. It is worthy of observation that the bright orange ribands of painting which characterize it, mostly become divided, on reaching maturity, into two shreds.



32 11



32 12

VOLUTA.

PLATE XIV

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

VOLUTA MAGELLANICA. *Vol. testâ ovato-oblongâ, ventricosâ, nunc tenuiculâ, hirsutâ, nunc crassiusculâ, obscure nodoso-tuberculatâ, spirâ brevi, acuminatâ, apice papillari, aufractibus superâ obtusè angulatis, deinde subinflatis, columellâ quadruplicatâ, subcallosâ, aperturâ patulâ, labro cir incrassato: foveoscutis albiâ, lineis castaneis undatis, e suturis promiscuè descendentes, interdum fasciatis undulatis, profusè pictâ, columellâ labrique subaurantiis*

THE MAGELLANIC VOLUTE. Shell ovately oblong, ventricose, sometimes rather thin, sometimes obscurely nodosely tubercled, spire short, acuminate, papillary at the apex, whorls obtusely angled round the upper part, then rather inflated, columella four-plated, rather callous, aperture wide open, lip but slightly thickened; brownish white, profusely painted with waved chestnut lines, descending promiscuously from the sutures, sometimes clouded into bands, lip and columella tinged with orange.

CHEMNITZ, Conch. Cab. vol. x. p. 139. pl. 118. f. 1313-4. Varieties.

Voluta subanhusa, Leach.

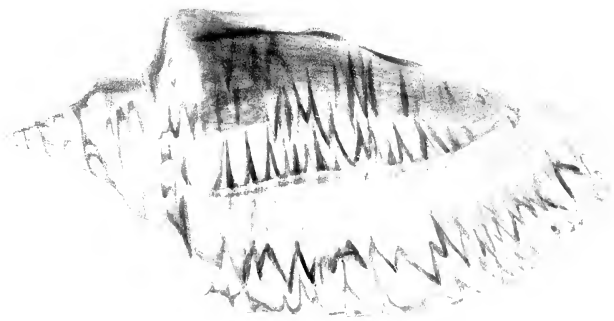
Voluta tuberculata, Swainson.

Voluta festiva, D'Orbigny (not of Lamarck).

Hab. Coast of Patagonia: D'Orbigny. Tierra del Fuego: Cuming.

In speaking of this species, it will be well to notice in the first instance that I follow Lamarck, D'Orbigny, and Deshayes in ascribing the broad shell under consideration, distinguished by its four- or five-plated columella, ventricose growth, and short acuminate spire, to the *Voluta Magellanica* of Chemnitz; while the elongated shell with a sharp exerted spire and only two to three columellar plait, referred to it by Kiener and Sowerby, is regarded by me, after the same authorities, as the *Voluta ancilla* of Solander in the Portland Catalogue.

The *Voluta Magellanica* is found abundantly on the coast of Patagonia from the Bay of San Antonio to the Straits of Magalhaens and Tierra del Fuego, and was observed by M. D'Orbigny to be in use among the natives as a drinking cup. As in most *Volutes*, the shell is not unfrequently tubercled, sometimes the first few whorls only are noduled, sometimes the nodular tubercle-like growth extends to the last whorl, in which state it is the *V. subanhusa* of Leach, then *tuberculata* of Swainson. In all conditions the painting consists of a promiscuous assemblage of undulated chestnut lines, waved with little regard to pattern or regularity, and occasionally clouded to about the middle, indicating a band. The shell taken by M. D'Orbigny for Lamarck's *Voluta festiva* is evidently a variety of this: the author of the 'Voyage dans l'Amérique Méridionale' having attached an importance to Lamarck's observations on that species, which does not belong to them.



VOLUTA.

PLATE XV.

Species 34. (Mus. Cuming.)

VOLUTA BRASILIANA. *Vol. testâ subglobose-oratâ, ventricosâ, spirâ brevissimâ, apice rix papillari, anfractibus lineis increpantibus radiatis, superâ gibboso-angulatis, ad angulum moloso-tuberculatis, columellâ triplicatâ, aperturâ patulâ; iatus celusque fulvescente, immoconcolâ.*

THE BRAZILIAN VOLUTE. Shell somewhat globose-ovate, ventricose, spire very short, apex scarcely papillary, whorls rudely marked with the lines of growth, gibbously angled round the upper part, moloso-tubercled at the angle, columella two-plaited, aperture wide open; light fulvous within and without.

SOLANDER, Catalogue of the Portland Museum, p. 186, no. 3958.

Voluta calceoguthis, Chemnitz.

Hab. Coast of Buenos Ayres; D'Orbigny.

This species was first made known by Favanne under the title of 'Le Coloquinte,' or 'Wild Gourd;' but before a Latin significance was given to this by Chemnitz, in the name *Voluta calceoguthis*, it was published by Dr. Solander in the Catalogue of the Portland Museum with the name *Voluta Brasiliana*, descriptive of its locality.

It is somewhat doubtful whether the species exists of so large a size in the present day as here represented. The specimen figured was found by Mr. Cuming at Buenos Ayres, buried with others in a bank composed of loose earth and worn shells, at a distance of about fifty miles from the sea. M. D'Orbigny relates having seen it in abundance, dead, upon the sandy points of the coast, from the mouth of the Rio de la Plata to Patagonia, where it is particularly common about the mouth of the Rio Negro, but much smaller; one he collected alive, and has figured, with the animal, in his magnificent work 'Voyage dans l'Amérique Méridionale,' Moll. Pl. 60. f. 4-6.

Species 35. (Mus. Rucker.)

VOLUTA ANGLATA. *Vol. testâ plano-fusiformi, subtrigona, spirâ brevi, acuminatâ, apice acutiusculâ, anfractibus levibus, superâ depresso-angulatis, columellâ ampliter triplicatâ, aperturâ patulâ, luteo simpliciter, fulvescente-spiculâ, lineis constantibus sarpe raris, distantibus, e suturis prorsus ac desceudentibus.*

THE ANGLED VOLUTE. Shell flatly fusiform, somewhat triangular, spire short, acuminated, rather sharp at the apex, whorls smooth, depressly angled round the upper part, columella largely three-plaited, aperture wide open, lip simple; light fulvous bay, with waved chestnut lines, often few and distant, descending prominently from the sutures.

SWAINSON, Exotic Conchology, Pl. 3 and 4.

Voluta Dufrenoyi, Donovan.

Voluta nasirei, Shubert and Wagner.

Volutella angulata, D'Orbigny.

Hab. Buenos Ayres and Patagonia; D'Orbigny.

This species is chiefly remarkable from the circumstance, that the animal, which is beautifully spotted all over like a leopard, has a lobe extending from the mantle on the left side over the shell, after the manner of a Cowry. It does not, however, secrete a vitrified enamel, but a milky glazed coating, like *Cyathina*, through which the zigzag marking is mostly visible. In a specimen before me from Mr. Dennison's collection, the shell is entirely covered with this glazed coating, flowing beyond the apex even, and the marking is obliterated, whilst the columella and interior of the aperture is of a rich carnelian colour.

M. D'Orbigny observed this species to inhabit the coast of South America from the mouth of the Rio de la Plata, north of Buenos Ayres, to the Bay of San Blas in Patagonia, where it lives buried in the sand. Having captured a specimen that was advancing from its hiding-place into the water, he kept it alive for several days in a glass vessel, during which time it walked about enveloped by the lobe of its mantle.



VOLUTA.

PLATE XVI.

Species 36. (Mus. Rucker.)

VOLUTA IMPERIALIS. *Vol. testâ oblongo-turbinatâ, crassissimâ, ponderosâ, spirâ brevi, apice obtusè papillari, anfractibus superâ concavo-angulatis, spinis grandibus erectis squamatis ad angulum carinalis, columellâ quadruplicatâ, apertura subaoplâ, tuba rix incrassata; fulvescente-spadicèâ, nunctis lineisque castaneis nublatis et angulatis, hic illie fasciatim dispositis, ornatâ, columellâ et apertura fauce aurantio-carucolis.*

THE IMPERIAL VOLUTE. Shell oblong-turbinated, very thick, ponderous, spire short, obtusely papillary at the apex, whorls concavely angled round the upper part, crowned with large erect squamate spines at the angle, columella four-plaited, aperture rather large, lip scarcely thickened; pale fulvous bay, ornamented with waved and zigzag chestnut spots and lines, disposed here and there in bands, columella and interior of the aperture orange-carneol.

LAMARCK. *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 385. *Hab.* Philippine Islands; Cuming.

This noble species was originally named *Murex Spenglerianus* by Martini, in honour of an eminent amateur of the last century, and it would have been well, notwithstanding the irregular nomenclature of the 'Conchylien Cabinet,' had Lamarck adopted that name. It was called the 'Grand Fondre Chinois de M. Spengler,' also the 'Chinese Emperor's Crown,' *Corona Imperatoris Chinesium*, and 'Die Mogolskron,' 'The great Mogul's Crown.' It presents little variation of growth and is always more or less prominently coronated.

Species 37. (Mus. Cuming.)

VOLUTA SCAPHIA. *Vol. subquadrato-turbinatâ, crassissimâ, ponderosâ, spirâ brevissimâ, apice obtusè papillari, anfractibus lævibus, superâ declivibus, deinceps gibboso-angulatis, ad angulum interdum antea rarissimè tuberculatis, columellâ fortiter quadruplicatâ, callosâ, præcipuè ad partem superiorem, apertura subaoplâ, labra simpliciter, supra subulata; fulvescente-spadicèâ, nunctis nublatis lineisque angulato-flexuosis castaneis variegatâ, columellâ carulescente-albâ, apertura fauce cinereo-fulvescente liacta.*

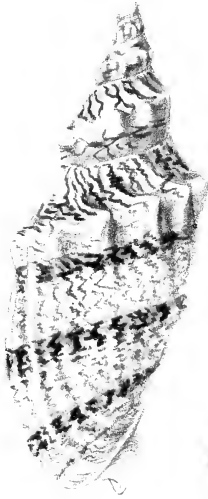
THE SKIFF VOLUTE. Shell somewhat squarely ovate, very thick, ponderous, spire very short, obtusely papillary at the apex, whorls smooth, slanting round the upper part, then gibbously angled, sometimes, but very rarely, tubercled at the angle, columella strongly four-plaited, callous, especially at the upper part, aperture rather large, lip simple, slightly winged above; light fulvous bay, variously painted with angularly flexuous lines and clouded blotches, columella bluish white, interior of the aperture tinged with ash-brown.

GMELIN, *Syst. Nat.* p. 3468.

Variety. *Voluta fasciata*, Schumber and Wagner.

Hab. Singapore (on the reefs); Cuming.

There is little variation of growth in this well-known species, and the painting, though more or less disposed in lines or blotches, is much of the same character. It has been long known as the 'Skiff' or 'Boat Volute'; *Cymbina Cypilis Bonæ Spei* of Martini, and *Gombolo mammitaire* of Davila.



38 a



38 b



39



40 a



40 b

VOLUTA.

PLATE XVII.

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

VOLUTA PACIFICA. *Vol. testâ oblongo-fusiformi, subcastrata, spirâ plus minusve exertâ, apice vix papillari, angustibus lœvibus, superiè tuberculatis, tuberculis vix prominens, nunc ferè obsolete, columella quatuor ad quinqueplicatâ, lamina expansâ saepe effluante, apertura oblongâ, labâ subreflexâ; costis brevibus, acutis costarum hieroglyphicis trifurcatâ, interstitiis strigis nudatis pallidioribus prominè pictis, aperturae fovea aurantiis-auriculatâ.*

THE PACIFIC VOLUTE. Shell oblong-fusiform, rather ventriose, spire more or less exerted, scarcely papillary at the apex, whorls smooth, tubercled round the upper part, tubercles sometimes rather prominent, sometimes almost obsolete, columella four- to five-plaited, often forming an expanded lamina, aperture oblong, lip slightly reflected; light flesh-brown, encircled with three bands of chestnut hieroglyphic spots, the interstices being prominently painted with wavy streaks of lighter brown, interior bright flesh-orange.

SOLANDER, Cat. Portland Museum, p. 190, no. 1039.

Buccinaa Aethiopa, Martyn.

Voluta Aethiopa, Gmelin.

Variety, *Voluta elongata*, Swainson.

Hab. Van Diemen's Land. New Zealand.

The light ventriose variety of this species, constituting the *V. elongata* of Swainson, is of much more common occurrence than that which is strongly tubercled. The latter variety, always more richly marked, was distinguished by Favanne with the name of "*La robe Torgne*." Most specimens have a thin lamina expanded over the columella,

Species 39. (Mus. Cuning.)

VOLUTA ANCILO. *Vol. testâ elongato-oblongâ, subfusi-
formi, tenuiâ, spirâ exertâ, apice peculiariter em-
turtâ, plicâ papillari, angustibus convexis, heriscentis,
columellâ bi- tri- plicatâ, apertura subangustâ, labâ
supplici, fulvescente, strigis fuscis, longitudinaliter nu-
dulatis, hinc illic pictâ.*

THE CAPTIVE VOLUTE. Shell elongately oblong, somewhat fusiform, rather thin, spire exerted, peculiarly twisted and but little papillary at the apex, whorls convex, rather smooth, columella two- three-plaited, aperture rather narrow, lip simple; pale fulvous, painted here and there with longitudinally wavy brown streaks.

SOLANDER, Portland Catalogue, no. 1873; Lamarek, Ann. sans Vert. (Deshayes' edit.) vol. x. p. 398.

Voluta spectabilis, Gmelin.

Voluta Magellanica, Sowerby (not of Chemnitz).

Hab. Bay of Good Success; Tierra del Fuego; Cuning Coast of Patagonia; D'Orbigny.

This species inhabits the coasts of Patagonia and Fuego with the *V. Magellanica*, from which it may be readily distinguished by its more sharply elongated growth and twisted apex.

Species 40. (Mus. Cuning.)

VOLUTA GRACILIS. *Vol. testâ oblongo-fusiformi, spirâ exertâ, apice papillari, angustibus heribus, superne denticulatis, deinde lamina-costatis, costis gradatâ erantibus, columellâ quadruplicatâ, apertura oblongâ, labâ subincrassato; fulvis seculis, lineis costarum nudatis longi-
tudinaliter pictis, lœvis trifurcatâ saturetoaribus.*

THE SLENDER VOLUTE. Shell oblong-fusiform, spire exerted, papillary at the apex, whorls smooth, slanting round the upper part, then ribbed in a swollen manner, ribs gradually fading, columella four-plaited, aperture oblong, lip rather thickened, pale fulvous colour, painted longitudinally with wavy chestnut lines.

SWAINSON, Journal of Science, vol. xvii. p. 32.

Hab. Australia.

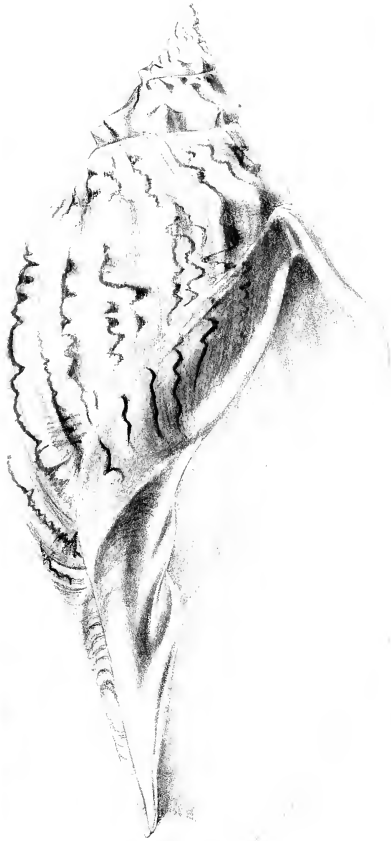
By exhibiting this species and the *V. Pacifica* in juxtaposition, each of the natural size, their distinctive character may be readily understood. The *V. gracilis* is uniformly of much smaller size, the tubercles have the form of swollen ribs, and there is no expanded columellar lamina.



41 a



41 b



42.



43 a



43 b

VOLUTA.

PLATE XVIII

Species 11. (Mus. Cuming.)

VOLUTA NIGELLUS. *Vol. testâ ovata, spirâ brevi, apicè acutâ, anfractibus longitudinaliter crebriusculatis, costis parvis, gradatim irregularibus et vcaudis, anfractu ultimo saepe hic illic evanesco, columella biplicatâ, plicis parvioribus vniatis obsolete superâ; caraco-fuscescente, fovea hic illic irregulari et punctata, variegata tubaque nigripunctatis.*

THE KERNEL VOLUTE. Shell ovate, spire short, sharp at the apex, whorls longitudinally closely ribbed, ribs small, gradually irregular and fading away, last whorl often varicose here and there, columella two-plaited, with a few minute obsolete plaits above; flesh-brown, here and there variegated and dotted with brown, lip and varices black-dotted.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. v. p. 405.
Voluta perdiciana, Megerle.

Hab. North Australia; Jukes

The irregular varicose growth of the last whorl appears to be characteristic of the species.

Species 12. (Mus. Brit.)

VOLUTA BECKII. *Vol. testâ fusiformi-oblongâ, spirâ sub-arcuata, apicè papillari, anfractibus transversim striatis, superâe emarginato-denticulatis, deinde plicato-tuberculatis, columella arcuata, fortiter triplicatâ, apertura ovato-oblongâ, labro simpliciter fusciscente, lineis costaceis nudatis hic illic longitudinaliter pictis.*

BECK'S VOLUTE. Shell fusiformly oblong, spire somewhat acuminate, papillary at the apex, whorls transversely striated, concavely slanting round the upper part, then plicately tubercled, columella arched, strongly three-plaited, aperture ovately oblong, lip simple; fawn, painted longitudinally here and there with waved chestnut lines.

BRONN, Pro. Zool. Soc. 1847. p. 43.

Hab. ———?

This is the largest species of the genus known, the accompanying figure being reduced more than a third from the original specimen.

Species 13. (Mus. Cuming.)

VOLUTA ZEBRA. *Vol. testâ ovato-oblongâ, Marguella-formâ, crassa, spirâ brevi, apicè subpapillari, anfractibus laticibus, superâe imbricatissimis, medianis obsolete plicato-nodulosis, columella fortiter quadruplicatâ, apertura subangustâ, labro incrassato, non reflexo; chorois, ad ferruginam lineâ, strigis anarcticis costaceis subflexosis nudique lineata.*

THE ZEBRA VOLUTE. Shell ovate-oblong, Marguella-shaped, thick, spire short, apex rather papillary, whorls smooth, rather swollen round the upper part, middle whorls obsoletely plicately noduled, aperture rather narrow, lip thickened, not reflected; ivory-white or rust-stained, lineated throughout with numerous slightly flexuous chestnut streaks.

LEACH, Zoological Miscellany, vol. i. pl. 12. C. 1.

Marguella rotata, Lamarck.

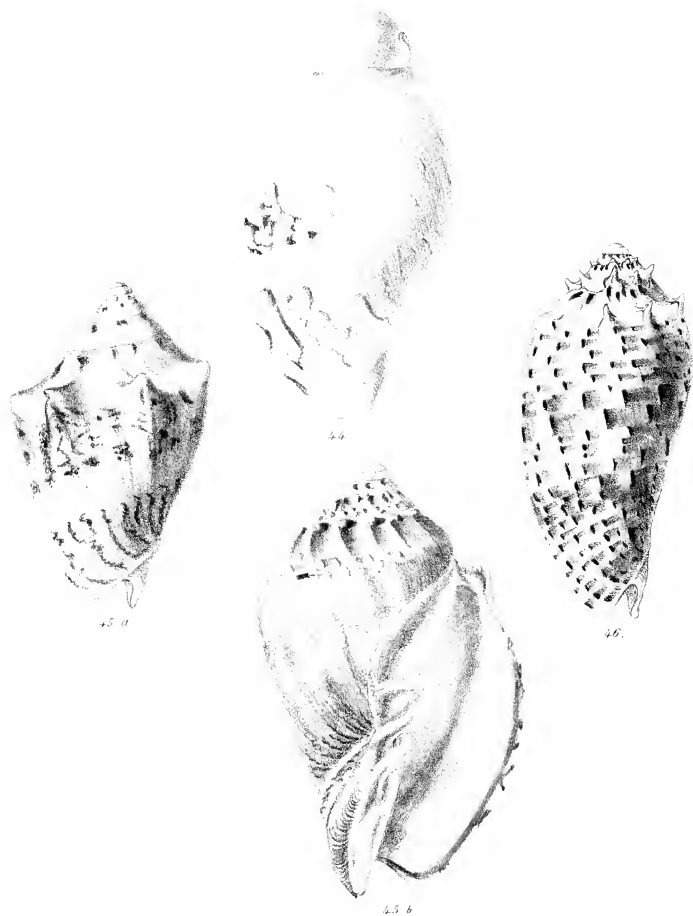
Voluta rotata, Kiener.

Voluta stragiplata, Megerle.

Eadem var., *Voluta lineata*, Leach.

Hab. Australia.

Two states of this species, differing immaterially from each other, were described some five and thirty years since by Dr. Leach, in his Zoological Miscellany under the names *V. zebra* and *lineata*. Eight years subsequent to this Lamarck describes it among the *Marguella* with the name *M. rotata*, from a specimen communicated to him by Mr. Alexander Mackay, Botanist and Secretary of the Linnean Society, who afterwards settled in Australia. It was then described by Megerle under a fourth name *V. stragiplata*, and published by Schubert and Wagner in their Supplement to the Conchylien Cabinet of Martini and Chemnitz.



VOLUTA.

PLATE XIX.

Species 44. (Mus. Brit.)

VOLUTA MAMILLA. *Fol. testâ ovata, tenui, ventricosa, spirâ brevi, in mamilla amplâ tumida distortâ, angustibus levibus, columellâ triplicatâ, aperturâ sub-amplicâ; foliâ, strigis natis longitudinaliter reticulatâ, fuscâ maculatâ medio intervallente.*

THE NIPPLE VOLUTE. Shell ovate, thin, ventricose, spire short, distorted into a large swollen nipple, whorls smooth, columella three-plaited, aperture rather large; fulvous, reticulated longitudinally with wavy streaks, leaving an unspotted band in the middle.

GRAY: *Sowerby, Thesaurus Conch. p. 297, pl. 50. f. 37, 58.*
Hab. Australia.

This shell is in a very immature state, and there can be little doubt of the swollen apex being a malformation. No importance can be attached to this, and I adopt the species only because the painting with its light central band does not agree with any other.

Species 45. (Mus. Cumîng.)

VOLUTA FLAVICANS. *Fol. testâ ovata, col oblongo-ovata, basi pedunculâ, cœvasâ, spirâ brevissimâ, apice obtusâ, angustibus levibus, aut longitudinaliter minutissimè striatis, superâ tumidissimè, interduâ squamato-tuberculatis, columellâ fortissimè quadruplicatâ, aperturâ subangustâ, labro superâ sianato; flavicantè, circum-fuscâ infra suturas maculatâ et medioque nebulatâ.*

THE YELLOWISH VOLUTE. Shell ovate or oblong-ovate, produced at the base, thick, spire rather short, obtuse at the apex, whorls smooth or longitudinally very minutely striated, rather swollen round the upper part, sometimes squamately tubercled, columella very strongly four-plaited, aperture rather narrow, lip sinuated round the upper part; yellowish, blotched beneath the sutures, and mottled throughout with greenish brown.

GMELIN: *Syst. Nat. p. 3464.*

Pyræa Mollkianana, Martini.

Voluta coleræa, pars, Lamarek.

Voluta punctata, Kiener (not of Swainson).

Var. elongata. Voluta signifer, Broderip.

Hab. Australia.

There is no species in which the columellar plaits are so strongly developed as in the *V. flavicans*. In some specimens they are raised nearly a quarter of an inch above the surface of the body-whorl, and are always more or less distinctly continued outwardly round the base. The shell is of very solid growth, coloured with an obscure mottled blue or greenish-red, and was known to the early Dutch conchologists by the name of the 'Bergamot Pear.'

The shell presented to Mr. Cumîng by Dr. Dalen of Rotterdam, and described by Mr. Broderip as a new species (*Pro. Zool. Soc. 1847, p. 232*), under the name *V. signifer*, is an elongated form of *V. flavicans* in which the lip is not quite mature.

Species 46. (Mus. Demîsson.)

VOLUTA CYMBOIA. *Fol. testâ oblongo-pyriformi, spirâ brevi, apice obtusè papillari, suturis sublevibus, subtiliter spinoso-squamatis, angustibus superâ cuneo-declivibus, deinde peculiariter spinoso-squamatis, squamis brevibus, acutis, erectis, substantibus, columellâ quadruplicatâ, aperturâ oblongâ, labro circum-incurvato, circum-circoscule, punctis lineisque fuscis brevibus, fulco-nubritatis, asperâ, suturis nigro-fuscâ lineatis, aperturâ fuscâ olivaceo-cinereâ.*

THE LITTLE BOAT VOLUTE. Shell oblong-pear-shaped, spire short, obtusely papillary at the apex, obtusely somewhat rude, finely spinosely squamate, whorls concavely slanting round the upper part, then peculiarly spinosely squamate, the scales being short, sharp, erect, and rather distant, columella four-plaited, aperture oblong, lip scarcely thickened; ash-green, sprinkled with brown fulvous shaded dots and short lines, sutures lineated with black-brown, interior of the aperture olive-ash.

CHEMINY: *Conch. Cab. vol. x. p. 141, pl. 148. f. 1385, b.*

Voluta coronata, Kiener

Hab. Moluccas.

This species differs remarkably from any other: there is a great peculiarity in the style of painting, as well as in the short erect spine-scales with which it is coronated.



VOLUTA.

PLATE XX.

Species 47. (Mus. Brit.)

VOLUTA LUTEOSTOMA. *Fol. testâ subquadrato-ovata, crassa, spirâ brevi, apice obtusâ, anfractibus longitudinaliter striatis, superâe angulatis, ad angulum tuberculatis et acutè squamatis, columellâ fortissimè quadruplicatâ, apertura oblongâ, labro intus incrassato, subreflexo; lacteâ, intusè fuscâ trigono-reticulatâ, apertura fuscâ rictûs totâ.*

THE YELLOW MOUTH VOLUTE. Shell somewhat squarely ovate, thick, spire short, obtuse at the apex, whorls longitudinally striated, angulated round the upper part, tubercled and sharply squamate at the angle, columella very strongly four-plaited, aperture oblong, lip thickened within, slightly reflected; cream-colour, triangularly reticulated with very deep brown, interior of the aperture bright yellow.

CHEMnitz, Conch. Cab. vol. ii. pl. 177. f. 1707. 8.

Murex luteostomat, Meuschen.

Voluta resperellii, ear., Martini.

Voluta lapparentis, ear., Billwyn.

Voluta cheysnauti, Swainson.

Hab.

The *V. luteostoma* is very distinctly characterized by its square thickened growth, squamate tubercles, and pattern of colouring, consisting externally of a very dark brown transverse network, and internally of a bright saffron yellow. Martini's figure of the species, Conch. Cab. vol. iii. pl. 97. f. 938, appears to have escaped observation.

Species 48. (Mus. Brit.)

VOLUTA LYRIFORMIS. *Fol. testâ fusiformi-laricè, spirâ acuminatâ, calicè prolato, apice gibbosopapillari, anfractibus convexis, undique longitudinaliter crebriusculis, costis interstitiisque longitudinaliter striatis, anfractu ultimo basi transversim sulcato-carrugato, columellâ multiplicatâ, plicis inferioribus unguibus, ceteris parvis, apertura parvisculâ, oblongâ, labro subincrassato, costis ciliatis; pallide carnea; anclis lineisque costalis castaneis et infuscescentibus fuscatis pictâ.*

THE LYRE-SHAPED VOLUTE. Shell fusiformly turreted, spire acuminated, very much produced, gibbously papillary at the apex, whorls convex, longitudinally closely ribbed throughout, ribs and inter-ribes longi-

tudinally striated, last whorl transversely grooved in a wrinkled manner at the base, columella many-plaited, lower plaits larger, the rest small, aperture rather small, oblong, pale flesh-colour, painted in a banded manner with blue, chestnut and reddish spots and lines.

BRODERIP, Zoological Journal, vol. iii. p. 83. pl. 3. f. 3.

Murex lyreformis, Swainson.

Hab. East Coast of Africa.

This beautiful shell in our national collection, the only one of the species at present known, is remarkable for its elongated growth, ribbed sculpture and richly variegated painting.

The shell figured by M. Kiener for *Voluta lyreformis* appears to be the *V. neospira* which follows.

Species 49. (Mus. Cuming.)

VOLUTA MEGASPIRA. *Fol. testâ fusiformi, laricè, truncatâ, spirâ elongatâ, costâ, apice gibbosopapillari, anfractibus transversim, subtiliter striatis, longitudinaliter plicato-costatis, costis apertura versus gradatim evanidis, columellâ quinquaplicatâ, plicis superioribus parvis, subobsoletis, apertura oblongâ, parvisculâ, labro ex incrassato; carneo-fuscescente, infuscescente castaneâ irregulariter maculatâ et fulguratâ.*

THE LARGE SPIRE VOLUTE. Shell fusiform, turreted, rather thin, spire elongated, exserted, apex gibbously papillary, whorls transversely finely striated, longitudinally plicately ribbed, ribs gradually fading towards the aperture, columella five-plaited, upper plaits small, somewhat obsolete, aperture oblong, rather small, lip scarcely thickened; light flesh-brown, irregularly blotched and waved with reddish chestnut

SOWERBY, The Sauros Conch., p. 298. pl. 48. f. 31. 32.

Hab. Japan; Siebold.

This elegant fusiform species is of rather light growth, delicately plicately ribbed, the ribs being sharp and compressed, and nearly obliterated on the last whorl. The specimen here figured from Mr. Cuming's collection, was brought from Japan by Dr. Siebold. There is a specimen in the collection of M. Delessert in Paris, figured erroneously by Kiener for the *V. lyreformis*, and another in the Museum at Leyden.

Species 50. (Mus. Brit.)

VOLUTA JUNCOSA. *Vol. testā fusiformi-ovata, spirā brevi, apice obtusa, angustibus lacinis, vel utanti decussatim striata, superiorē linealinsculis, columellā fortiter quadruplicata, apertura longiusculā, labro simpliciter; lactea, aurantiis intus rufis serialita regulariter pictā.*

THE PEACOCK-TAIL VOLUTE. Shell fusiformly ovate, spire short, obtuse at the apex, whorls smooth or minutely decussately striated, rather swollen round the upper part, columella strongly four-plaited, aper-

ture rather long, lip simple; cream-colour, regularly painted with rows of deep-red spots.

CHREMNITZ, Conch. Cab. vol. xi. pl. 177. f. 1703. 1.

Hab. Gulf of Mexico.

The spots in the shell here figured from the British Museum are arranged in double transverse rows, but it is not a character of the species.

The habitat of this very rare Volute is supposed to be on the northern shores of the Gulf of Mexico, near the mouth of the Appalachicola River.



51



52 a



52 b



53



54 a



54 b



55

VOLUTA.

PLATE XXI

Species 51. (Mus. Brit.)

VOLUTA COSTATA. *Fal. testâ oblongo-ovata, spirâ brevisculâ, torrita, apice subarantâ, anfractibus laticibus, vel minutissimè decussatâ striatis, basi corrugato-sulcatis, ad salutas depresso-pluvis, dentale longitudinaliter costatis, costis regularibus, cuneatis, superâ univariatis, columellâ multiplicitâ, pleris tribus inferioribus distinctis, cæteris parvis, fere obsolete; alia, erocum-rufescente promiscuè sparsa unculatâ et lineatâ.*

THE RIBBED VOLUTE. Shell oblong-ovate, spire rather short, torreted, rather sharp at the apex, whorl-smooth, or very minutely decussately striated, corrugately grooved at the base, depressly flattened at the sutures, then longitudinally ribbed, ribs regular, rounded, pointed at the upper extremity, columella many-plaited, the three lower plaits distinct, the rest small, almost obsolete; white, promiscuously sparingly spotted and lined with light saffron red.

SWAINSON, Journal of Science, vol. 17, p. 33.

Voluta aum. Lesson.

Harpula harpa. Swainson (in Exotic Conch.)

Voluta harpa. Deshayes (not of Barnes).

Voluta lycata. Sowerby.

Hab. Mollusca.

The depressly flattened structure of the upper part of the whorls forms a characteristic angular shelf next the sutures, upon the edge of which the ribs terminate each in a point.

Species 52. (Mus. Brit.)

VOLUTA PUNCTATA. *Fal. testâ ovata, crassiusculâ, spirâ brevi, apice obtusâ, anfractibus superâ convexo-declivibus, dentale subobscure tuberculatis, columellâ fortiter quadruplicatâ, et promiscuè punctatâ.*

THE DOTTED VOLUTE. Shell ovate, rather thick, spire short, obtuse at the apex, whorls convexly slanting round the upper part, then somewhat obscurely tubercled, columella strongly four-plaited; light fulvous rose, marked with square spots and promiscuously dotted of a darker colour.

SWAINSON, Zoological Illustrations, 1st Series, pl. 161.

Hab. — ?

This shell is not in very good condition, but has sufficient character to distinguish it from any other species.

There is nothing remarkable in the form; the pattern and colouring are peculiar, and not so much faded as to prevent an easy recognition of the species should a second specimen be found.

Species 53. (Mus. Brit.)

VOLUTA CONCINNA. *Fal. testâ fusiformi, subgenicili, spirâ exsertâ, apice papillari, anfractibus transversâ subtilissimè elevato-striatis, superâ angulatis, et tuberculato-pluvis, columellâ quadruplicatâ, apertura subangustâ, fulcâ, lineis chestnutis unculatis, erocum-rufâ longitudinaliter pictâ.*

THE SLAT VOLUTE. Shell fusiform, rather slender, spire exserted, papillary at the apex, whorls transversely very finely elevately striated, angulated round the upper part, and tubercularly plaited, columella four-plaited, aperture rather narrow; fulvous, very closely longitudinally painted with wavy chestnut lines.

BRODERICK, Proc. Zool. Soc. 1836, p. 43.

Hab. — ?

An elegantly formed species, of which this is the only specimen that has been seen. It is of a light fulvous colour, densely longitudinally striped throughout with slightly waved chestnut lines.

Species 54. (Mus. Brit.)

VOLUTA PULCHRA. *Fal. testâ ovato-oblongâ, spirâ subexsertâ, apice obtusâ et vixantè unculatâ, anfractibus laticibus, superâ convexo-declivibus, angulatis, ad angulâ tuberculatis, tuberculis promiscuè, subcompressis, erectis, univariatis, columellâ quadruplicatâ, salicâ trifurcatâ, unculis triquis numerosis albis intercalentè, fasciis punctis grandibus linearibus intrasè fasciis punctulatis dispersis, columellâ bilobata crentè univariataevolis.*

THE BEAUTIFUL VOLUTE. Shell ovately oblong, spire somewhat exserted, obtuse and minutely noduled at the apex, whorls smooth, convexly declining round the upper part, angled, tubercled at the angle, tubercles prominent, somewhat compressed, erect, pointed, columella four-plaited, aperture oblong, lip scarcely thickened; fulvous bay, darker in three bands, leaving numerous white triangular spots, bands peculiarly

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sprinkled with very deep brown large linear dots, lip and columella bright orange carnelion.

SOWERBY, Tankerville Cat. App. p. 28, pl. 1, f. 2.

Hab. Australia; Macgillivray.

When Mr. Sowerby named this shell 'The Beautiful,' he little anticipated so complete a verification of the term as we find in the specimen before us. The species has only been known, hitherto, in a worn, discoloured state; in the shell here figured, collected in Australia by Mr. Macgillivray, and presented to the British Museum by the Earl of Derby, the painting is in its perfection, and a more beautiful object it is not easy to conceive.

The *Voluta pulchra* is nearest allied to *V. vesperilio*, but may be readily distinguished by its different style of net-work colouring and the sprinkling of dark oblong blotches, over the tubercles, around the middle, and at the base.

Species 55. (Mus. Brit.)

VOLUTA BULLATA. *Vol. testâ oblongo-cylindraceâ, tenuicula, spirâ brevi, obtusâ, apicè papillari, contractibus lœvibus, tumidiusculis, superiù contractis, columellâ biplicatâ, plievâ basalibus, apertura angustâ, prope ad spiram ascendente, labro cir incrassato, fulcè, lineis undulatis confusis aequalisque castaneis promiscuè pictâ.*

THE BUBBLE-LIKE VOLUTE. Shell oblong-cylindrical, rather thin, spire short, papillary at the apex, whorls smooth, rather swollen, contracted at the upper part, columella two-plaited, plaits basal, aperture narrow, ascending nearly to the spire, lip scarcely thickened; fulvous, promiscuously painted with confused waved lines and chestnut blotches.

SWAINSON, Zoological Illustrations, Second Series.

Hab. Algoa Bay, South Africa.

A very remarkable species, the most abnormal form of the genus, of which there are two specimens in the British Museum.

57 a



58

57 b



59 a



59 b



59 c



60 a



61



60 b

VOLUTA.

PLATE XXII.

Species 56. (Mus. Cuming.)

VOLUTA GUTTATA. *Vol. testâ pyriformi-oblongâ, crassâ, basi subconcreâ, spirâ obovata, apice subacutâ, anfractibus plicato-costatis, costis gradatim evadens, columellâ multiplicatâ, plicis duabus tribusve inferioribus distinctis, ceteris minutis, apertura parvisculâ, labro incrassato, varicoso, luto obsolete denticulato; rosaceo-âllâ, guttis rufo-fuscis hic illic irregulariter pictâ.*

THE SPOTTED VOLUTE. Shell pyramidally oblong, thick, a little recurved at the base, spire acuminate, rather sharp at the apex, whorls plicately ribbed, ribs gradually fading away, columella many-plaited, two or three lower plaits distinct, the rest minute, aperture rather small, lip thickened, varicose, obsoletely denticulated within; pinkish-white, painted irregularly with blotches of red-brown.

Hab. Honduras; Dyson.

An interesting new species of which two examples were collected, belonging to the same type as the little *V. Guildingii*.

Species 57. (Mus. Metcalf.)

VOLUTA CYLLENIFORMIS. *Vol. testâ ovali, crassissimâ, basi recurvâ, spirâ conicâ, apice acutâ, anfractibus superne depresso-sulcatis, longitudinaliter acutè plicato-costatis, iris subtilibus plus minus obsoletè decessatis, columellâ anticè rugulosâ, triplicatâ, plicis parvis, acutis, apertura parvâ, labro incrassato, varicoso; allâ, guttis aurantio-fuscescentibus hic illic prœmissè pictâ.*

THE CYLLENE-SHAPED VOLUTE. Shell ovate, rather thick, recurved at the base, spire conical, sharp at the apex, whorls depressly grooved round the upper part, longitudinally sharply plicately ribbed, more or less obsoletely decessated with fine ridges, columella rugulose in front, three-plaited, plaits small, sharp, aperture small, lip thickened, varicose, white, promiscuously painted here and there with light orange-brown spots.

SOEWERY, Thesaurus Conch. p. 214. pl. 55. f. 112, 113.

Hab. ——— ?

This interesting little species, so nearly resembling a *Cyllene* in general aspect, is at present unique in the collection of William Metcalf, Esq.

Species 58. (Mus. Taylor.)

VOLUTA ABYSSICOLA. *Vol. testâ pyriformi, tenui, spirâ brevi, subtricitâ, apice acutâ, anfractibus superne depresso-canaliculatis, iris annularis acutis longitudinalibus et transversis undique cerebrariâ subprofundè canaliculatis, iris superne uniconatis, columellâ quadruplicatâ, apertura subangustâ, labro tenui; fulvescente-âureâ, fasciis rufo-fuscis angustis tribus vel quatuor cingulatâ.*

THE DEEP-INHABITING VOLUTE. Shell pear-shaped, thin, spire short, somewhat turreted, sharp at the apex, whorls depressly channelled round the upper part, rather deeply very closely canaliculated throughout with numerous sharp ridges, which are pointed at the upper part, columella four-plaited, aperture rather narrow, lip thin; fulvous-ash colour, encircled with three or four narrow red-brown bands.

ADAMS and KEEVE, Moll. Voy. Samarang, pl. 7. fig. 6.

Hab. Cape of Good Hope (dredged from a bank of dead shells and rounded iron-stones, at the depth of 132 fathoms); Belcher.

This elaborately curved species is one of considerable interest, from the circumstance of its being the first living representative of a group of highly-sculptured fossil species, abounding in the Eocene portion of our Tertiary beds. The principal of these *V. linea, elevata, excavata*, and *digitalium*, are well known to geologists and were distinguished as a subgenus by Mr. Swainson, under the name *Volutitelles*.

The *Voluta abyssicola*, under consideration, is not identical with any of the fossil species, the surface being characterized by a closer and more sharply defined pattern of lattice-work, comprising as many as thirty transverse and forty longitudinal ridges in a whorl. The upper edge of the whorls is depressly flattened at the sutures, forming a narrow ascending channel. The ridges are slightly nodulous at the point of crossing, and round the upper extremity impart a coronated aspect to the shell. The columellar plaits, four in number, are sharp and delicate. The outer lip is thin and does not appear to be mature.

Species 59. (Mus. Delessert.)

VOLUTA DUBIA. *Vol. testâ obovato-fusiformi, spirâ apicis*

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versus papillari, anfractibus transversim tenuissimè striatis, longitudinaliter subplicatis, columellâ vic plicatâ; flavicante, nuceis quadratis fulco-rafs serialim tessellatâ.

THE DOUBTFUL VOLUTE. Shell ovately fusiform, spire papillary towards the apex, whorls transversely very finely striated, longitudinally slightly plicated, columella scarcely plaited; yellowish, tessellated with rows of square filvaceous-red spots.

BRODERIP, Zool. Soc. vol. iii. p. 81. pl. 3. f. 1.

Fusus tessellatus, Schubert and Wagner.

Hab. — ?

The columellar plaits of this species, which is unknown to me, are so faintly developed, that some doubt has been entertained of its genus. Shortly after the publication of it as a *Volute* in the *Zoological Journal*, from a specimen brought to this country by M. Roussel which Mr. Sowerby mentions having had in his possession, a second specimen was figured by Schubert and Wagner in their Supplement to the 'Conchylic Cabinet' as a *Fusus*. M. Kiener published a third specimen in his monograph of the same genus, in which the columellar plaits are not indicated at all. In my monograph of *Fusus* I introduced a copy of this (Conch. Icon. *Fusus*. Pl. XIV. Fig. 53). Mr. Sowerby has, however, kindly drawn my attention to its identity with the figure of *Volute dubia* of the *Zoological Journal*, and from the papillary structure of the apex there can be little doubt that the true position of this very rare and interesting species is in the genus to which Mr. Broderip first assigned it.

Species 60. (Mus. Sheepmaker.)

VOLUTA CASSIDULA. *Vol. testâ ovati, rotundati, spirâ brevi, apice acutâ, anfractibus convexis, imbricatis, multiple concentricè crebrilatis, columellâ multiplicatâ, plicis tribus inferioribus distinctis, cæteris minutis, anterosio, irregularibus, apertura oblongâ,*

labro peculiariter effuso; carneo-lactâ, lineis purpureo-fuscis subtilibus transversis guttisque prominèntè pictâ, columellâ labroque pallidè crocis.

THE LITTLE HELMET VOLUTE. Shell ovate, somewhat inflated, spire short, sharp at the apex, whorls convex, rather swollen, concentrically closely ridged throughout, columella many-plaited, the three lowest plaits sharp and distinct, the rest minute, numerous, irregular, aperture oblong, lip peculiarly effused; flesh-tinted cream-colour, prominently painted with purple-brown spots and fine transverse lines, lip and columella light saffron yellow.

Hab. Japan.

An interesting new species from the collection of Mr. Sheepmaker of Amsterdam, of which two or three specimens of similar character are known.

Species 61. (Mus. Cuning.)

VOLUTA GULDINGII. *Vol. testâ pyramidal-oblongâ, basi recurvâ, spirâ acuminatâ, anfractibus concentricè obtusè costatis, interstitiis liris subtilibus clathratis, columellâ multiplicatâ, plicis duabus tribus inferioribus distinctis, cæteris minutis, apertura parviscutâ, labro incrassato, carinico, iatus obsolete denticulato; rosaceo-albâ, guttibus rufo-fuscis hic illic irregulariter pictâ.*

GULDING'S VOLUTE. Shell pyramidally oblong, recurved at the base, spire acuminate, whorls concentrically obtusely ribbed, interstices latticed with fine ridges, columella six-plaited, the three lower plaits distinct, aperture small, lip thickened, varicose, minutely denticulated within; dark purple-brown, prominently painted with a few red spots.

SOWERBY, Thesaurus Conch. p. 214. pl. 55. f. 110, 111.

Hab. St. Vincent's, West Indies.

The concentric ribs of this little species range somewhat obliquely, the interstices being finely latticed with small ridges.

VOLUTA.

	Year	Species	Plate	Species	
abyssiola, Adams & Reece	XXII.	58	imvexa, Reece	IV.	9
ameilla, Sahlender	XXIII.	39	interpuncta, Martyn	VI.	12
angulata, Swainson	XV.	35	Junonia, Chevrolt	XX.	50
anona, Latreille	XXI.	51	leucipata, Lamarek	VIII.	18
arabica, Guenée	XXVII.	38	Lappinaeva, Linnaeus	VI.	12
arctica, Sahlender	II.	4	lavata, Latrèch	XVIII.	43
Beckii, Boudierip	XXVIII.	42	luteo-stoma, Chevrolt	XX.	47
Brasiliana, Sahlender	XV.	34	lyraeformis (Mitrea), Swains	XX.	48
bullata, Swainson	XXI.	55	lyrata, Sowerby	XXI.	51
caesia, Latreille	VIII.	18	maculata, Swainson	XIII.	30
caesiola, Reece	XXII.	60	Magellanica, Chevrolt	XIV.	33
Chalcidiana, Lamarek	VIII.	18	maugolica, Chevrolt	I.	2
Chrysothorax, Swainson	XX.	47	manilla, Gray	XIX.	14
Cyathodes, Chevrolt	XV.	34	mariorata, Swainson	XIII.	31
caecima, Boudierip	XXI.	53	megaspura, Sowerby	XX.	49
caesia, Kiener	XIX.	46	metis, Lamarek	V.	11
caesiata, Swainson	XXI.	51	Mitreaformis, Latreille	III.	7
Cinogon, Boudierip	I.	1	multistriolata, Boudierip	III.	7
Cylichiformis, Sowerby	XXII.	43	musica, Linnaeus	VIII.	18
cyathoides, Chevrolt	XIX.	46	musica, Schultze	XV.	35
Poliopterna, P. G. B.	III.	5	nivosa, Latreille	VII.	17
D. fessana, Donovan	XV.	35	nodulosa, Lamarek	VIII.	18
diana, Boudierip	XXII.	59	Norrisii, Sowerby	VII.	15
disagata, Swainson	XXVII.	38	nucleus, Latreille	XXIII.	41
exoptanda, Sowerby	X.	22	Pacificia, Sahlender	XVII.	38
fasciata, Schultze	XXI.	37	pallida, Gray	XI.	24
Ferrissaci, Donovan	V.	23	papillaris, Sowerby	IV.	10
festiva, Latreille	XII.	28	pellissieripalis, Lamarek	V.	11
flaviventris, Wood	XIX.	46	perliciana, Mezerle	XVIII.	41
flavivans, Guenée	XIX.	45	piperrata, Sowerby	VII.	16
fulgetrum, Sowerby	VI.	13	pluvialis, Dillwyn	VIII.	18
fulviventris, Lamarek	VI.	14	polycaentis, Lamarek	IX.	19
fulva, Lamarek	IX.	19	practexta, Reece	XII.	29
fusiformis, Swainson	III.	6	pulchra, Sowerby	XXI.	54
gracilis, Swainson	XVII.	40	punctata, Swainson	XXI.	52
Gaëlingii, Sowerby	XXIII.	61	postea, Swainson	IX.	19
Gaëlaina, Lamarek	VIII.	18	radiata, Kiener	XVIII.	43
Gaëlacensis, Chevrolt	VIII.	18	reticulata, Reece	XI.	25
guttata, Reece	XXII.	56	rubris, Gray	X.	23
harpa, Barnes	I.	3	rupestris, Guenée	VI.	14
Hebraea, Linnaeus	IX.	20	rutila, Boudierip	IV.	8
imperialis, Latreille	XXI.	36	scapha, Guenée	XXI.	37
Indica, Sowerby	VI.	12	serpentina, Lamarek	V.	11

INDEX.

	Plate.	Species.		Plate.	Species.
<i>vignifer</i> , Broderip	XIX.	15	<i>Arctioides</i> , Kiener	IX.	20
<i>Sophia</i> , Gray	X.	21	Turneri, Gray	XII.	27
<i>Sowerbyi</i> , Kiener	III.	6	umbulata, Lamarck	XI.	26
<i>spectabilis</i> , Gmelin	XVII	39	vespertilio, Linnaeus	V.	11
<i>strigulata</i> , Megerle	XVIII	43	vexillum, Chevrolt	XIII.	32
<i>subulosa</i> , Leach	XIV	33	viridescens, Solander	IX.	19
<i>sulcata</i> , Lamarck	VIII.	18	volva, Chevrolt	XI.	24
<i>thiarella</i> , Lamarck	VIII	18	rubra, Lamarck	XIX.	45
<i>tuberculata</i> , Swainson	XIV	33	zebra, Leach	XVIII.	43

ERRATA.

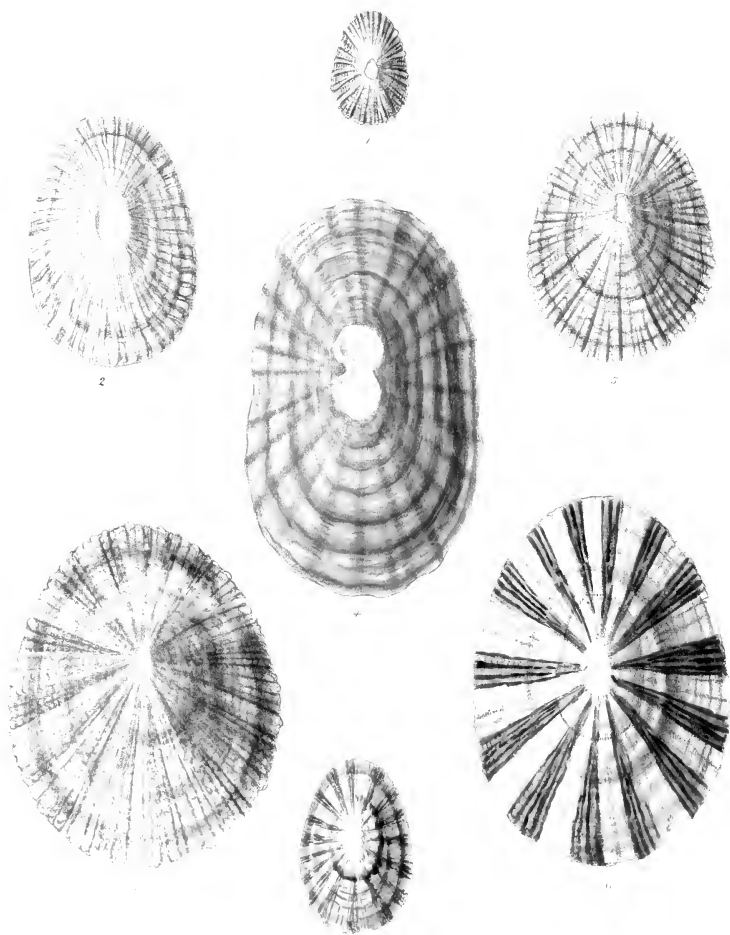
PL. XIX, Sp. 36. To *C. cyathoides*, add as synonymus *C. thrausoides*, Wied.

MONOGRAPH

OF THE GENUS

F I S S U R E L L A .

Art's finest pencil could but scarcely show
The painted Limpets hatched on a rock,
And those gay watery greens he would explain
Small excavations on a rocky shore
That seem like fairy lofts or gnomie wells,
Richly embossed with words and choicest shells—
As if her trinkets Nature chose to hide
Where nought revealed but the flowing tide — *Taglio.*



FISSURELLA.

PLATE I.

GENUS FISSURELLA. Bruguière.

Testa depresso-conica, orata vel oblongo-orata, clypeiformis, plerumque anticè attenuata, radiatum striata vel costata, sinuante perforata, orificio oblongo, vel suborbiculari, lateribus nunc coarctata, nunc excavato, sapsissimè anticè inclinato.

Shell depressly conical, ovate or oblong-ovate, shield-shaped, generally attenuated anteriorly, radiately striated or ribbed, perforated at the summit, orifice oblong, or nearly orbicular, sometimes contracted, sometimes excavated at the sides, most frequently inclined anteriorly.

The *Fissurellæ*, or Key-hole Limpets, constitute an attractive group, distinguished rather for their beauty and variety of painting, than for any remarkable development of sculpture. The orifice at the summit of the shell, which constitutes the principal character of the genus, is mostly inclined anteriorly, that is, in the direction of that portion of the shell covering the head of the mollusc, and which is generally more or less attenuated. The orifice varies characteristically in form in different species, but not in individuals of the same species. It is mostly oblong, sometimes a little excavated at the sides, but more frequently contracted in the middle, in such a manner as to give a denticulated character to the margin. In one species, *F. aperta*, the orifice is considerably larger than in any other, and the animal, as figured by M. D'Orbigny, is seven or eight times longer than the shell; in another, *F. unicosclisua*, the orifice is stretched, so to speak, nearly to the anterior basal edge. The sculpture consists of ribs or ridges radiating from the dorsal orifice to the base, and an agreeable pattern is sometimes produced by the development of concentric ridges, which are squamæ at the point of crossing.

The largest and most brilliantly painted *Fissurellæ* are from the western coast of South America. During Mr. Cuming's sojourn in that country, he collected several species on exposed rocks, at low water, larger and finer than any before known. At the Philippine Islands, on the contrary, Mr. Cuming observed only a few species of small size; nor were any collected during the voyage of the Samarang among the Islands of the Eastern Seas at all approaching in size to those of Chili and Peru.

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

FISSURELLA CHEMNITZII. *Fiss. testâ oratâ, anticè attenuatâ, depressiâcellâ, lateribus peculiariter compressis, excavatilibus levatis; radiatum costatâ, costis rubris, inequalibus, obsolete nodosis, hic illic truncatisculis, orificio ovali, amplo; olivaceo-citrilli et purpureo-roseo lineâ et radiatâ.*

CHEMNITZ'S FISSURELLA. Shell ovate, attenuated anteriorly, rather depressed, peculiarly compressed at the sides, lifted at the extremities; radiately ribbed, ribs rugged, unequal, obsoletely nodose, rather swollen here and there, orifice oval, large; stained and rayed with olive green and purple-rose.

SOWERBY, *Proc. Zool. Soc.*, 1834, p. 126. *Conch. Illus.* f. 55.

Hab. Benguela, W. Africa; Dr. Tams.

There can be no impropriety in dedicating this species to the author of the latter volumes of the 'Conchylion Cabinet'; but it is not identical with the figure of his predecessor (Martini, vol. i. pl. 11. f. 100), to which Mr. Sowerby refers it. The ribs are fewer in number and more unequal, whilst the orifice is totally different. To the specimen formerly in the Tankerville collection, is here added a figure of a smaller one in finer condition collected at Benguela by Dr. Tams.

For Species 2 see Plate IV.

Species 3. (Mus. Cuming.)

FISSURELLA NEGLECTA. *Fiss. testâ oratâ, anticè attenuatâ, medio posticè levatâ, radiatum costatâ, costis rugosis, inequalibus, obsolete nodosis, sinuante recessu erimicè cancellatis, margine basali bifidè crenulatâ, orificio oblongo-orato, lateribus subcoarctato; cinerascete, fuscis concentricis nigricantibus radiisque olivaceis subobscuris variegatâ.*

THE NEGLECTED FISSURELLA. Shell ovate, attenuated anteriorly, raised posteriorly in the middle, radiately ribbed, ribs rugged and unequal, obsoletely nodose, delicately cancellated towards the summit, basal margin crenulated in a bifid manner, orifice oblong-ovate, slightly contracted at the sides; pale ash colour, somewhat obscurely variegated with blackish concentric bands and olive rays.

August, 1849.

DESHAYES, Enc. Méth. vers. vol. ii. p. 138. Anim. sans vert. vol. vii. p. 601.

Fissurella Mediterranea, Gray.

Hab. Mediterranean.

The shell in this species is lifted up in the centre behind the orifice, which is situated on the anterior declining slope, and has a corresponding depression in the interior. About twenty of the radiating ridges are more prominent than the rest, and the basal margin is finely crenulated in a bifid manner.

Until the species was distinguished by M. Deshayes, in the *Encyclopédie Méthodique*, it was probably confounded with the *F. Græca*.

Species 4. (Mus. Cuming.)

FISSURELLA CRASSA. *Fiss. testâ oblongo-ovatâ, depresso-concavâ, ad utrumque latas subattenuatâ, crassâ, concentricè rufè striatâ, marginè inæquali, orificio oblongo, limbo penitentialiter excavato, lateribus valdè convexis, quasi dentatis; flacido-fuscâ, obscure nigricante radiatâ, iatus corangatâ et pallidè rosacâ.*

THE THICK FISSURELLA. Shell oblong-ovate, deeply convex, slightly attenuated at the sides, thick, concentrically rudely striated, uneven at the margin, orifice oblong, peculiarly excavated round the edge, very much contracted at the sides, as if toothed; yellowish brown, obscurely rayed with black, wrinkled and pinkish in the interior.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. 7. p. 592.

Fissurella clypeiformis, Sowerby.

An endemic? *F. depressa*, Lamarck.

Hab. Valparaiso (on rocks at low water); Cuming.

M. Deshayes has some doubt of this being Lamarck's *F. crassa*, but it answers with remarkable accuracy to his description of that species.

Species 5. (Mus. Cuming.)

FISSURELLA LATA. *Fiss. testâ orbiculari-ovatâ, anticè vix attenuatâ, elevatissimâ, radiatim obtusè liratâ, liris inæqualiter nodosis, orificio parvo, lateribus subexcavato; olivaceo-cinerascente, intusè purpureo-roseo radiatâ.*

THE BROAD FISSURELLA. Shell orbicularly ovate, very slightly attenuated anteriorly, rather elevated, radiately obtusely ridged, ridges unqually nodose, orifice small, a little excavated at the sides; olive-ash, rayed with dark purple-rose.

OWERBY, Pro. Zool. Soc., 1834, p. 124. Conch. Illus. f. 63.

Hab. Island of St. Mary, Chili, (in exposed places on the rocks at low water); Cuming.

This approaches rather to the *F. maxima* than to *F. picta*, with which Mr. Sowerby compares it, but may be readily distinguished from either.

Species 6. (Mus. Cuming.)

FISSURELLA PICTA. *Fiss. testâ ovatâ, elevatissimâ, radiatim liratâ, liris rufibus angustis, interdua nodosis, interdua ferè obsolete, orificio oblongo-ovato, subangusto, lateribus vix excavatis; cinerascente-albâ, purpureo-nigro lineari-radiatâ, circa aperturam cretaceo-albâ.*

THE PAINTED FISSURELLA. Shell ovate, rather elevated, radiately ridged, ridges rude, narrow, sometimes nodose, sometimes almost obsolete, orifice oblong-ovate, rather narrow, sides slightly excavated; ash-white, radiated with lines of purple-black, chalk-white around the aperture.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. 7. p. 590.

Patella picta, Gmelin.

Hab. Strait of Magalhães; Falkland Islands.

It is not improbable that two or three species have been referred by different authors to the *Patella picta* of Gmelin. Lamarck's description of its purple-violet colouring may have been taken from a worn specimen, to which the rich dark painting of the specimen here represented would no doubt have turned upon exposure to the weather.

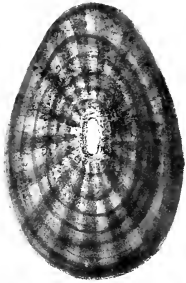
Species 7. (Mus. Cuming.)

FISSURELLA DARWINI. *Fiss. testâ ovali, anticè subattenuatâ, luniculâ, infra summitatem leviter compressâ, radiatim liratâ, liris tenuibus, crebris, subundatis, orificio oblongo-ovali; superiè albâ, basin versus intusè cinerè, nigro lineari-radiatâ, fuscis albis aut perpartis aut pluribus radiatâ.*

DARWIN'S FISSURELLA. Shell ovate, a little attenuated anteriorly, rather thin, slightly compressed below the summit, radiately ridged, ridges thin, close-set, slightly waved, orifice oblong-oval; white at the upper part, dark ash towards the base, radiated with black lines, and more or less with white bands.

Hab. Straits of Magalhães; Darwin.

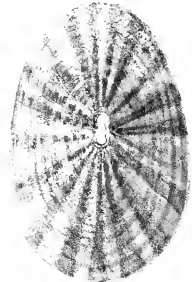
An interesting new species of which several specimens were collected by Mr. Darwin in the above-named locality.



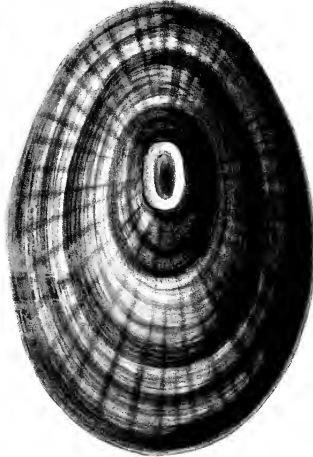
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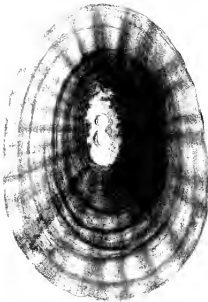
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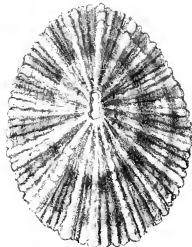
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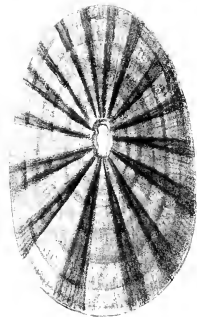
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FISSURELLA.

PLATE II.

Fig. 8.

An interesting variety of Sp. 3. *F. neglecta*, in which the shell is delicately tinged with pink in the absence of the olive-green colouring.

For Sp. 8. see Pl. IV.

Species 9. (Mus. Cuming.)

FISSURELLA PULCHRA. *Fiss. testâ oblongo-ovatâ, anticâ attenuatâ, crassiusculâ, convexo-depressâ, concentricè lemnistriatâ, orificio oblongo, lateribus medio excavatis; purpureo-cinereis, purpureo-rufo circa orificium leutiginosâ, radiis rufo-purpureis subobscurè pictâ.*

THE BEAUTIFUL FISSURELLA. Shell oblong-ovate, attenuated anteriorly, rather thick, convexly depressed, concentrically finely striated, aperture oblong, sides excavated about the middle; purple-ash, spotted with purple-red around the orifice, and obscurely painted with rays of the same colour.

SOWERBY, *Proc. Zool. Soc.*, 1834, p. 124.

Hab. Valparaiso (on the rocks); Cuming.

The purple-red freckled painting around the orifice is a very characteristic feature in this species.

Species 10. (Fig. 10 and 12, Mus. Cuming.)

FISSURELLA LIMBATA. *Fiss. testâ oblongo-ovatâ, anticâ eiv attenuatâ, depressiusculâ, lateribus interdum parvulata compressâ, levigatâ, lineis concentricis incrassantibus minus distinctis, orificio oblongo, lateribus medio subconcretatis; cinereis-fulvâ, purpureo-roseo radiatâ, interdum purpureo-cinereâ, obscurè radiatâ, nigro circa aperturam lineatâ, limbo basali purpureo-nigro.*

THE MARGINED FISSURELLA. Shell oblong-ovate, slightly attenuated anteriorly, rather depressed, sometimes a little compressed at the sides, smooth, concentric lines of growth more or less distinct, orifice oblong, sides slightly contracted in the middle; ash-white, rayed with purple-rose, sometimes purple-flesh colour stained with black around the aperture, basal margin purple-black.

SOWERBY, *Proc. Zool. Soc.*, 1834, p. 123.

Hab. Valparaiso (on the rocks); Cuming.

Although the two specimens figured present such a different aspect, they are varieties of the same species.

Species 11. (Mus. Cuming.)

FISSURELLA NIGRA. *Fiss. testâ ovali, elevatiusculâ, crassâ, concentricè striatâ, liris obsolete radiatâ, orificio ovali, margine excavato; purpureo-nigrâ, fasciis concentricis, lineisque numerosissimis subtilibus radiantibus, saturatè lineatâ, limbo basali cinereiscente.*

THE BLACK FISSURELLA. Shell oval, rather elevated, thick, concentrically striated, and radiated with obsolete ridges, orifice oval, with the edge excavated; purple-black, stained with dark concentric bands and numerous fine radiating lines, basal margin pale-ash.

LESSON, *Voy. de la Coquille*, p. 412.

Fissurella cinerea, Eschscholtz.

Fissurella grandis, Sowerby.

Hab. Valparaiso and Island of Chiloe (attached to the under surface of stones on the shore); Cuming.

The colouring of this fine species is of a purplish inky hue, nearly black.

For Species 12. see Pl. IV.

Species 13. (Mus. Cuming.)

FISSURELLA ORIENS. *Fiss. testâ oblongo-ovatâ, depressiusculâ, radiatâ multiridatâ, liris angustis, crebris, subobscuris, orificio oblongo, lateribus medio excavatis; cinereiscente, purpureo-nigro radiatâ.*

THE RISING SUN FISSURELLA. Shell oblong-ovate, rather depressed, radiately many-ridged, ridges narrow, close-set, rather obscure, orifice oblong, sides excavated in the middle; pale ash, rayed with purple-black.

SOWERBY, *Proc. Zool. Soc.*, 1834, p. 124.

Hab. Valparaiso (attached to rocks); Cuming.

This species approaches certain varieties of the *F. limbata* in general aspect, but may be readily distinguished by its more depressed growth, and obscure sculpture of ridges; and the orifice is broader.

M. D'Orbigny very erroneously quotes this as a synonym of *F. picta*.

August, 1849.

FISSURELLA.—PLATE II.

Species 14. (Mus. Cuming.)

FISSURELLA COSTATA. *Fiss. testâ suborbiculari-oratâ, antice attenuatâ, radiatus rugoso-liratâ, liris obtusè nodosis, orificio parvisculo, oblongo, lateribus medio paululum recurvatis; flavido-cinerascente, fusco-olivaceo radiatâ.*

THE RIBBED FISSURELLA. Shell somewhat orbicularly ovate, attenuated anteriorly, radiately roughly ridged, ridges obtusely nodose, orifice rather small, oblong,

sides a little excavated in the middle; yellowish-ash. rayed with brownish-olive.

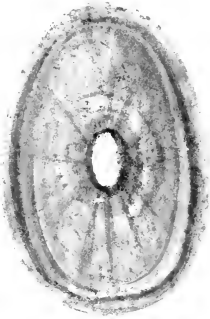
LESSON. Voy. de la Coquille, p. 419; Illus. Zool. pl. 12.

Fissurella Chilensis, Sowerby.

An eadem? *Fissurella rudis*, Deshayes.

Hab. Valparaiso (in exposed situations on the rocks at low water); Cuming.

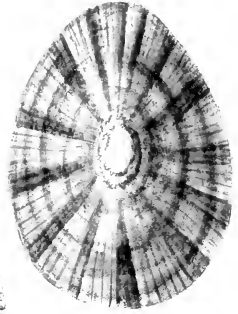
The orifice inclines somewhat anteriorly in this species. It is very abundant on the coast of Chili.



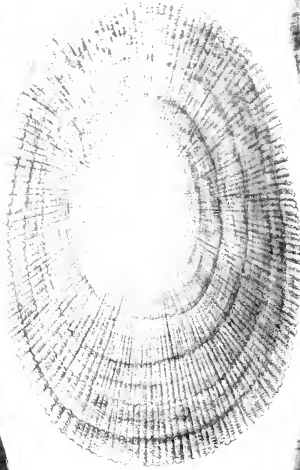
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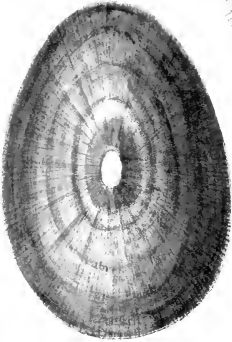
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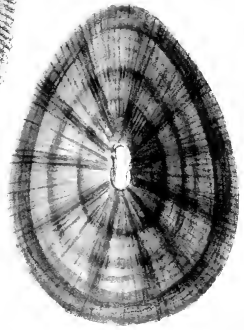
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FISSURELLA.

PLATE III

Species 15. (Mus. Cuming.)

FISSURELLA NATALENSIS. *Fiss. testâ oblongo-ovata, antice attenuatâ, subcompressâ, radiatim costatâ, costis inaequalibus, subobsoletè anulosis, orificio oblongo, subangusto, lateribus medio paulatim excavatis: albidâ, radius cost. con-angustatus pictâ.*

THE NATAL FISSURELLA. Shell oblong-ovate, attenuated anteriorly, rather compressed, radiately ribbed, ribs uneven and rugged, somewhat obsolete nodose, orifice oblong, rather narrow, sides a little excavated in the middle; whitish, painted with violet-black rays.

KRAUSS, Sudafrick. Moll. p. 60. pl. f. f. s.

Hab. Port Natal, South Africa.

The concentric lines of growth have very much the appearance, here and there, of festooned ridges. The species is frequently of a rather darker greyish or greenish hue than the specimen here represented.

Species 16. (Mus. Cuming.)

FISSURELLA BRIDGESII. *Fiss. testâ ovata, antice subattenuatâ, crassiusculâ, depressâ, concentricè subtilissimè striatâ, orificio oblongo, latiusculo, lateribus medio excavatis: fusco-purpureo et cinereo-angustate concentricè fasciatâ, obscure albicantâ, marginè basali latissimo, purpureo.*

BRIDGES' FISSURELLA. Shell ovate, slightly attenuated anteriorly, rather thick, depressed, concentrically very finely striated, orifice oblong, rather wide, sides excavated in the middle; concentrically banded with brownish purple and ashy black, obscurely white-rayed, basal margin very broad, purple.

Hab. Quintero, Chili (on the rocks); Bridges.

This fine species approaches the *F. latimarginata* in general aspect, but will be found to differ materially on comparison. It is of thicker growth, not radiately striated, the orifice differs in being larger and excavated at the sides, and the painting is of a lighter purple-ash.

Species 17. (Mus. Cuming.)

FISSURELLA CUMINGII. *Fiss. testâ ovata, antice attenuatâ, depressâ, radiatim costatâ, costis obtusis, inaequalibus, obscure squamato-anulosis; periparsente-cinereâ et fer-*

rugatâ, obscure purpureo radiatâ, cinere viridina albâ, obscure sparsim punctatâ, marginè basali latissimo, fulvo-cinereoscente, purpureo concentratâ.

CUMING'S FISSURELLA. Shell ovate, attenuated anteriorly, depressed, radiately ribbed, ribs obtuse, unequal, obscurely squamately nodose: purple-ash or rust-colour, rayed with deep purple, white around the orifice, sprinkled with a few obscure dots, basal margin very broad, fulvous ash, blotched with purple
Hab. Quintero, Chili; Bridges.

Another interesting new species, collected by Mr. Bridges in the same locality with the preceding, in which the coloured margin of the base is as broad as in the *F. latimarginata*. I have the pleasure of naming it after Mr. Cuming in honour of his productive researches in this genus along the Western Coast of South America, which have been so successfully followed up by Mr. Bridges.

Species 18. (Mus. Cuming.)

FISSURELLA CRENULATA. *Fiss. testâ oblongo-ovata, subirregulari, depresso-convexâ, radiatim subtiliter et creberrimè levata, liris transversis subtilissimè obsolete squamato-striatis, orificio amplo, subobliquatâ, marginè basali crenulato: roseo-fulcâ.*

THE CRENULATED FISSURELLA. Shell oblong-ovate, somewhat irregular, deeply convex, radiately finely and very closely ridged, ridges transversely very finely striated with obsolete scales, orifice large, nearly orbicular, basal margin crenulated; pinkish fulvous-colour.

SOWERBY, Tankerville Catalogue, App. p. vi.

Hab. Monterey, Upper California.

This remarkable species stands alone, no other having been discovered with which it would profit to constitute any comparison.

Species 19. (Mus. Cuming.)

FISSURELLA LATIMARGINATA. *Fiss. testâ ovata, antice attenuatâ, depressâ, medio chertivisculâ, radiatim multistriatâ, orificio oblongo-ovato: lateus purpureo-brunneo, marginè basali latissimo, purpureo-brunneo.*

THE WIDE-EDGED FISSURELLA. Shell ovate, attenuated

anteriorly, depressed, rather elevated in the middle, radiately many-striated, orifice oblong-ovate; very dark purple-brown, basal margin very broad, purple-brown.

SOWERBY. *Pro. Zool. Soc.* 1834, p. 126. *Conch. Illus.* f. 69.
Hab. Valparaiso and Iquiqui, Peru (on the rocks);
Cuming.

Distinguished by its deep purple-brown or chocolate colouring, and broad dark-coloured base.

Species 20. (Mus. Cuming.)

FISSURELLA BIRADIATA. *Fiss. testā ovatā, antice acuminato-atteuata, depressā, medio elevatiusculā, radiatum profuse striatā, striis tenuiusculis, orificio oblongo, lateribus medio coarctatis; intus cinereo-purpureā, radius pallidus, quorū uno ad utrunque latus magis conspicuo, obscure notatā, margine basali latiusculo, intus cinereo-purpureo.*

THE TWO-RAYED FISSURELLA. Shell ovate, acuminately attenuated anteriorly, depressed, rather elevated in the middle, radiately profusely striated, striae somewhat swollen, orifice oblong, sides contracted in the middle; dark ash-purple, obscurely marked with light rays, one of which on each side is more conspicuous than

the rest, basal margin rather broad, very dark ash-purple.

FREMBLY, *Sowerby, Pro. Zool. Soc.* 1834, p. 124.

Hab. Valparaiso and Iquiqui, Peru (under stones on the shore); Cuming.

The rays of this species are very obscure, with the exception of one on each side diverging from the denticulated edge of the orifice.

Species 21. (Mus. Cuming.)

FISSURELLA BELLA. *Fiss. testā depresso-converā, medio elevatiusculā, antice acuminato-atteuata, radiatum obscure sulcatū, margine basali angusto; cinereo-fuscā, saturatē et pallidē alternatim concentricē fasciatā, purpureo-lacoe circū radiatā.*

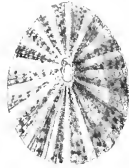
THE PRETTY FISSURELLA. Shell deeply convex, rather elevated in the middle, acuminately attenuated anteriorly, radiately obscurely grooved, basal margin narrow, orifice oblong; ash-brown, banded concentrically alternately lighter and darker, rayed with bright crimson lake.

Hab. Cape Horn; Darwin.

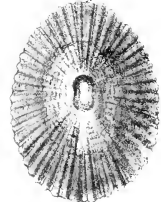
A comparatively smooth species, conspicuously painted with thirteen purple-lake rays.



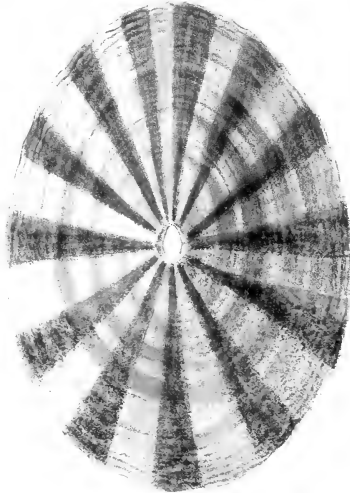
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FISSURELLA.

PLATE IV.

Species 2. (Mus. Cuming.)

FISSURELLA VOLCANO. *Fiss. testā orato-conicā, anticārie attenuatā, radiatim costatā, costis rudibus, inequalibus, hic illic majaribus, orificio oblongo; albidā, rosam radiatā, radius nigropunctatis, interduā rosā, purpureo-radiatā, circa orificium nigropunctatā.*

THE VOLCANO FISSURELLA. Shell ovately conical, slightly attenuated, anteriorly rather thick, radiately ribbed, ribs rude, uneven, here and there larger, orifice oblong; whitish, rayed with rose, rays dotted with black, sometimes rose, rayed with purple, black-dotted around the orifice.

Hab. Santa Barbara, California: Hinds.

An elevated conical shell varying somewhat in colour, but similarly designed, collected by Capt. Sir Edward Belcher, and his assistant-surgeon Mr. Hinds, during the voyage of the Sulphur.

Species 8. (Mus. Cuming.)

FISSURELLA NIGROPUNCTATA. *Fiss. testā oratā, subconicā, crassā, radiatim costatā, costis rudibus, inequalibus, subacutis, marginē basali acutē crenulato, orificio oblongo, lateribus cœrcelato; cirescente-albidā, interruptē intensē anthracinā.*

THE BLACK-DOTTED FISSURELLA. Shell ovate, somewhat conical, thick, radiately ribbed, ribs rude, uneven, rather sharp, basal margin sharply crenulated, orifice oblong, contracted at the sides; greenish-white, ribs painted in an interrupted manner with very dark coal-black.

SOWERBY, Pro. Zool. Soc., 1831. p. 125.

Hab. Gallapagos and Lobos Island, (under stones on the shore); Cuming.

The interior of the shell is also of a sea-green colour, and it is mostly eroded on the outside in the vicinity of the orifice.

Species 12. (Mus. Cuming.)

FISSURELLA VIRESCENS. *Fiss. testā ovatā, elevatiusculā, radiatim costatā, costis subirregularibus, basi versus unidiagonalis, orificio latē oblongo, aëria pantalina cœrcelato; carulescente-cicidi, circa orificium albidā, rosæ sparsim tractā, intus cirescente.*

THE GREENISH FISSURELLA. Shell ovate, rather elevated, radiately ribbed, ribs somewhat uneven, rather swollen towards the base, orifice broadly oblong, a little contracted in the middle; bluish-green, white around the orifice, sparingly pink-stained, interior greenish.

SOWERBY, Pro. Zool. Soc. 1831. p. 125.

Hab. Panama (in exposed situations on rocks at low water); Cuming.

The orifice is rather broad in this species, and characterised by a small denticular contraction on each side.

Species 22. (Mus. Cuming.)

FISSURELLA MAXIMA. *Fiss. testā oratā, depressiusculā, crassā, radiatim tractā, liris subulobis, a latē subulobulatis, marginē basali undulato, orificio rotundato-ovato; cirescente-albidā aut fulvescente, purpureo-lucce conspicuē radiatā.*

THE VERY LARGE FISSURELLA. Shell ovate, rather depressed, thick, radiately ridged, ridges slightly nodose, somewhat obsolete with age, basal margin undulated, orifice rotundately ovate; greenish-white or light fulvous, conspicuously rayed with purple-lake.

SOWERBY, Pro. Zool. Soc. 1831. p. 123.

Hab. Valparaiso (on exposed rocks and under stones at low water); Cuming.

In addition to the magnificent specimen here figured from Valparaiso, Mr. Cuming possesses one of smaller size from Cape Horn, in which the radiating ridges are more prominently developed and obscurely noduled.

Species 23. (Mus. Cuming.)

FISSURELLA BAREADENSIS. *Fiss. testā oblongo-ovatā, subconicā, lateribus interduā subcompressā, radiatim costatā, costis inequalibus, acutiusculis, squamoso-asperis, decem ad duodecim prominentioribus, orificio suborbiculari; intus albidā, aërialis irregularibus nigris radiatā, interduā rosā, intus cirescente.*

THE BAREADOES FISSURELLA. Shell oblong-ovate, rather conical, sometimes a little compressed at the sides, radiately ribbed, ribs uneven, rather sharp, bristled with scales, ten to twelve ribs more prominent than

August, 1849.

the rest, orifice nearly orbicular: yellowish-white, rayed with irregular black spots, sometimes pinkish, interior greenish.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. vii. p. 595.

Patella Barbadosensis, Gmelin.

Hab. West Indies.

This is the ordinary type of the species, which is extremely variable in colour, sometimes rose or purple.

Species 24. (Mus. Cuming.)

FISSURELLA NODOSA. *Fiss. testâ ovato-conicâ, lateribus subcompresâ, radiatâ costatâ, costis squamato-nodosis, nodis conspicuis, caldè elevatis, orificio oblongo, latinsculo, medio contracto, circumscissâ.*

THE NODOSE FISSURELLA. Shell ovately conical, a little compressed at the sides, radiately ribbed, ribs squamately nodose, nodules conspicuous, very elevated, orifice oblong, contracted in the middle: greenish-white.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. vii. p. 593.

Patella nodosa, Born.

Patella spinosa, Gmelin.

Patella Jamaicensis, Gmelin.

Hab. West Indies.

Readily to be distinguished from all other species of the genus by its very prominent erect squamate nodules.

Species 25. (Mus. Cuming.)

FISSURELLA VIRIDULA. *Fiss. testâ ovali, subconicâ, antice inclinatâ, costis subparallelis lirisque obsolete nodulosis radiatâ, interstitiis in adolescentiâ cancellatis, orificio oblongo, medio contracto, marginè basali circumscissâ; cirrâ, costis albis, orificii limbo cœruleo.*

THE GREEN FISSURELLA. Shell ovate, rather conical, inclined anteriorly, rayed with somewhat rude obscurely noduled ribs and ridges, interstices in the young shell cancellated, orifice oblong, contracted in the middle, basal edge crenulated; green, ribs white, edge of the orifice blue.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. vii. p. 596.

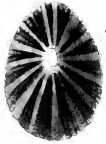
Testa juvenis. *Fissurella bicolor*, Adams.

Hab. Nevis, West Indies (attached to stones); Power.

The sculpture of this species, which in the young state is noduled and finely cancellated, becomes nearly obliterated with age.



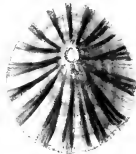
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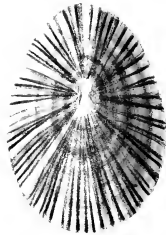
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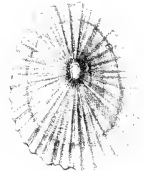
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FISSURELLA.

PLATE V.

Species 26. (Fig. a, b, c, d. Mus. Cuming.)

FISSURELLA PERUVIANA. *Fiss. testâ ovato, antice attenuatâ, elevatissimâ, interribra emicâ, radiatâ lirati, liris squamato-nodosis, interribra obsolete, orificio ovato, parvo; albâ, aut ecidib. roseâ, aut purpureo-fuscescente, fusca vel purpureo-nigrivante radiatâ, et circa orificium variâe latitudinis.*

THE PERUVIAN FISSURELLA. Shell ovate, attenuated anteriorly, rather elevated, sometimes conical, radiately ridged, ridges squamately nodose, sometimes obsolete, orifice ovate, small; whitish or bright rose, or light purple brown, rayed with brown or purple-black, and delicately freckled around the orifice.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vii. p. 599.

Fissurella affinis. Gray, Sow. Phy.

Fissurella subrotunda. Deshayes.

Hab. Lobos Island, Valparaiso and Iquiqui, Peru, Cuming.

So variable is this species in colouring it is almost in vain to describe it, yet there is a marked affinity of design in all the varieties, four of which are selected for illustration.

Species 27. (Mus. Cuming.)

FISSURELLA ALABASTRITES. *Fiss. testâ ovatâ, depresso-conicâ, radiatâ costatâ, costis inaequalibus, subnatis, orificio oblongo, latiusculo, umbra subconstrictâ; albâ, lineâ intense caruleâ circa orificium intus retusâ, orificio limbo cirescente.*

THE ALABASTER FISSURELLA. Shell ovate, depressly conical, radiately ribbed, ribs uneven, rather large, orifice oblong, rather broad, slightly contracted in the middle; white, with a dark blue line around the orifice within and without, edge of the orifice greenish.

Hab. Cape de Verd Islands.

A pure white rudely ribbed shell, in which the orifice is large, and of a pale sea-green colour around the edge, bordered by a very deep indigo blue line.

Species 28. (Mus. Cuming.)

FISSURELLA GLAUCCOPIS. *Fiss. testâ ovatâ, depresso-conicâ, radiatâ costatâ, costis subnatis, obsolete nodosis, liris parvâ intermediâ, orificio parvo, ovali; albâ, orificio limbo intense caruleo.*

THE OWL-EYED FISSURELLA. Shell ovate, depressed, conical, radiately ribbed, ribs rather flattened, obsoletely nodose, with a small intermediate ridge, orifice small, oval; white, edge of the orifice deep indigo blue.

Hab. Cape de Verd Islands.

The similarity between this and the preceding species, both from the same locality, is remarkable; yet they differ materially in the shape and size of the dorsal orifice, and Mr. Cuming possesses several specimens of both, without any intermediate modification of a character which appears to be always constant in the same species.

Species 29. (Mus. Cuming.)

FISSURELLA NIMBOSA. *Fiss. testâ ovatâ, elevatâ, decliviter conicâ, radiatâ liratâ, liris inaequalibus, orificio oblongo, umbra constrictâ; cirescente-âllâ, nigrescenterividi costatâ.*

THE RAINY FISSURELLA. Shell ovate, elevated, steeply conical, radiately ridged, ridges uneven, orifice oblong contracted in the middle; greenish-white, rayed with very dark green.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vii. p. 591.

Patella niabona. Lamarck.

Hab. West Indies. Venezuela; Dyson.

The colouring of this species varies from brown to green.

Species 30. (Mus. Cuming.)

FISSURELLA ASPERA. *Fiss. testâ ovatâ, subconicâ, antice inclinatâ, cibericâ radiatâ costellatâ, costellis liris emarginatis squamatis emicâ clathratâ, orificio sub-oblucatori; fulvo-nigrâ, liris cinereo-nigrâ.*

THE ROUGH FISSURELLA. Shell ovate, somewhat conical, inclined anteriorly, very closely radiately ribbed, ribs delicately latticed with concentric squamate ridges, orifice nearly orbicular; light fulvous ash, ridges cinder-black.

SOWERBY, Proc. Zool. Soc., 1831. p. 127.

Hab. Pecosmyo, Peru.

Delicately sculptured, the transverse ridges passing over radiating ones in squamate festoons.

August, 1849.

Species 31. (Mus. Cuming.)

FISSURELLA MACROTREMA. *Fiss. testā ovatā, interdum elevatusculā, radiatim striato-sulcatā, orificio elongato-oblongo, medio coarctato; virescente, rufo, fusco, vel purpureo-nigro radiatā, intus virescente.*

THE LONG-SLIT FISSURELLA. Shell ovate, sometimes rather elevated, radiately striately grooved, orifice elongately oblong, contracted in the middle; greenish, rayed with red, brown, or purple black, interior pale green.

SOWERBY, Pro. Zool. Soc., 1834. p. 125.

Hab. Gallapagos Islands; Cuming.

Exceedingly variable in colouring, but with always more or less of red and green.

Species 32. (Mus. Cuming.)

FISSURELLA COARCTATA. *Fiss. testā ovatā, anticè attenuatā, radiatim creberrimè striatā, orificio oblongo, medio valde coarctato; virescente-albā, circa orificium lineis nigris creberrimè radiatā.*

THE CONTRACTED FISSURELLA. Shell ovate, attenuated anteriorly, radiately very closely striated, orifice oblong, very much contracted in the middle; greenish white, very closely rayed with black lines around the orifice.

KING, Zoological Journ. vol. v. p. 339.

Hab. Benguela, West Africa.

The chief peculiarity of this species consists in the orifice being more than usually contracted on each side. The painting is also peculiar.

Fissurella . P. W.



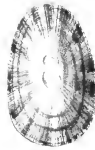
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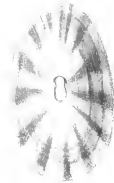
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FISSURELLA.

PLATE VI.

Species 33. (Mus. Cuming.)

FISSURELLA SCUTELLA. *Fiss. testâ trapeziformi-ovata, cavâ depressâ, lateribus medio subcompressis, extremitatibus levatiusculis, concentricè elevato-striatâ, interstitiis incisâ, orificio oblongo, subaaplo; spaldiceo-albâ, purpureo-fuscescente radiatâ.*

THE LITTLE PLATTER FISSURELLA. Shell trapeziformly ovate, very depressed, sides slightly compressed in the middle, extremities a little lifted, concentrically elevately striated, interstices engraved, orifice oblong, rather large: fawn white, rayed with light purple-brown.

GRAY, Brit. Mus., Sowerby, Cat. *Fissurella*, No. 42. Conch. Illus. f. 34.

Fissurella trapezina, Sowerby (Pro. Zool. Soc., 1834).

Hab. Raines' Island, Torres Straits: Inc.

A singular little broad flatted species with a rather large orifice.

Species 34. (Mus. Cuming.)

FISSURELLA SAGITTATA. *Fiss. testâ ovata, depressiusculâ, lateribus subcompressâ, radiatâ silicatâ, orificio oblongo, viciâ rosaceo et albo radiatâ, radiis albis punctis nigricantibus sagittatis notatis.*

THE ARROW-MARKED FISSURELLA. Shell ovate, rather depressed, a little compressed at the sides, radiately grooved, orifice oblong: rayed with bright pink and white, the white rays being marked with blackish arrow-head dots.

Hab. Cape of Good Hope.

A pretty pink-rayed shell in which the uncoloured interstitial rays are marked with dark arrow-head spots.

Species 35. (Mus. Cuming.)

FISSURELLA DUBIA. *Fiss. testâ ovata, anticè attenuatâ, depressâ, radiatâ costatâ, liris tenuibus concentricis numerosis fimbriatâ, orificio oblongo, latiusculo, medio coarctatâ; olivaceo-cinereo irregulariter tinctâ et radiatâ.*

THE DOUBTFUL FISSURELLA. Shell ovate, attenuated anteriorly, depressed, radiately ribbed, and frilled with numerous fine concentric ridges, orifice oblong,

rather broad, contracted in the middle; irregularly stained and variegated with olive-ash.

Hab. Port Natal.

Very closely allied to *F. Natalensis*, but of much more depressed growth.

Species 36. (Mus. Cuming.)

FISSURELLA HIANTULA. *Fiss. testâ ovata, lateribus peculiariter compressâ, extremitatibus levatis, radiatâ rugoso-liratâ, interstitiis subobsoletè cancellatis, orificio aaplo, oblongo, latiusculo; albâ, pallidè spaldiceo tinctâ, cinereo-nigricante prope marginem subobscurè radiatâ.*

THE GAPING FISSURELLA. Shell ovate, peculiarly compressed at the sides with the extremities lifted up, radiately roughly ridged, interstices somewhat obscurely cancellated, orifice large, oblong, rather broad: whitish, stained with light fawn colour, rather obscurely rayed near the margin with ashy-black.

LAMARCK, Anim. sansvert. (Deshayes' edit.) vol. vii. p. 597

Fissurella Javanicensis, Sowerby (not of Lamarck.)

Hab. Cape of Good Hope; Hannah.

There can be little doubt, as suggested by M. Deshayes, that this species, which Mr. Sowerby assigns to Lamarck's *F. Javanicensis*, belongs to *F. hiantula* of the same author, and not that which is figured for it in the Conchological Illustrations.

Species 37. (Mus. Cuming.)

FISSURELLA NIGRA. *Fiss. testâ oblongo-ovata, anticè subattenuatâ, depressâ, lateribus subcompressâ, radiatâ costatâ et liratâ, costis lirisque rugosis, subacutis, striis concentricis clathratis, orificio oblongo; purpureo-nigrâ, orificii limbo albo.*

THE BLACK FISSURELLA. Shell oblong-ovate, slightly attenuated anteriorly, depressed, a little compressed at the sides, radiately ribbed and ridged, ribs and ridges rugose, rather sharp, latticed with concentric striae, orifice oblong: purple-black, edge of the orifice white.

PHILIPPI, Abbild. und Besch. *Fissurella*, pl. 2. f. 2.

Hab. Southern Chili.

The colouring becomes slightly mottled at the basal edge.

Species 38. (Mus. Cuming.)

FISSURELLA GRISEA. *Fiss. testā ovatā, depressiusculā, laevigatā, lineis concentricis incrementi subirregularibus, orificio parviusculo, oblongo; cinereo-griseā, basia recens violaceā, obscurè radiatā.*

THE GREY FISSURELLA. Shell ovate, rather depressed, smooth, concentric lines of growth somewhat irregular, orifice rather small, oblong, ash grey, violet towards the base, obscurely rayed.

Hab. — ?

This species has no sculpture to characterise it, but the colouring is peculiar.

Species 39. (Mus. Cuming.)

FISSURELLA APERTA. *Fiss. testā ovatā, crassā, depressiusculā, concentricè creberrimè elevato-striatā, interstitiis laevibus, orificio ovato, porcupa; violaceo-cinereosecete, violaceo-nigricante irregulariter radiatā, basi albi-mar-ginata.*

THE OPEN FISSURELLA. Shell ovate, thick, rather depressed, concentrically very closely elevately striated, interstices engraved, orifice ovate, very large; pale violet ash, rayed irregularly with violet-black, edged with white at the base.

SOEWERY. Tankerville Catalogue, App. p. vi. Conch. Illus. f. 10. (sub nom. *F. hiantula*).

Papillata aperta, Gray.

Fissurellidea negatrenna, D'Orbigny.

Hab. Ensenada de Ros, Coast of Patagonia; D'Orbigny.

Notwithstanding that Lamarck refers to Born's vignette of this species for his *F. hiantula*, it is certainly distinct from that which served for his description. Lamarck's *F. hiantula* is the species which Mr. Sowerby assigns to *F. Javanicensis*, and is well characterised by the remark:—"étant posée sur son ouverture, elle ne s'appuie que sur ses deux côtes."

Mr. Sowerby's original view of this species appears to be the correct one; and his remark that "the depressed white margin is probably caused by the mantle of the animal overlapping the edge of the shell" is confirmed by M. D'Orbigny's figure, Voyage dans l'Amér. Mérid. Moll. pl. 63 showing that the animal is of very large size, with the shell only occupying a small portion of the back, into the flesh of which it is imbedded to the depth of the uncoloured edge.

Species 40. (Mus. Cuming.)

FISSURELLA MEXICANA. *Fiss. testā oblongo-ovatā, depressā, lateribus compressiusculā, radiatim salentā, liris intermediis incrementi lineis concentricis decussatis, orificio oblongo, latiusculo, medio subcontracto; purpureo-rufā, subobscurè nigro radiatā, orbā circa orificium.*

THE MEXICAN FISSURELLA. Shell oblong ovate, depressed, a little compressed at the sides, radiately grooved, intermediate ridges decussated with concentric lines of increase, orifice oblong, rather broad, slightly contracted in the middle; purple red, somewhat obscurely rayed with black, white round the orifice.

SOEWERY. Conch. Illus. *Fissurella*, Cat. p. 8. no. 67. f. 61. *Hab.* Real Llejos, Mexico; Cuming.

The orifice of this species is characterised externally by a very decided white border.

Species 41. (Mus. Cuming.)

FISSURELLA NIGRITA. *Fiss. testā ovatā, depressiusculā, lateribus compressā, extremitatibus levatā, radiatim subtiliter liratā, concentricè striatā, orificio ovali, porcupa; intense cinereo-fuscā, obscurè nigro radiatā.*

THE DINGY FISSURELLA. Shell ovate, rather depressed, compressed at the sides, lifted at the extremities, radiately finely ridged, concentrically striated, orifice oval, very large; dark ash brown, obscurely black-rayed.

SOEWERY. Pro. Zool. Soc., 1834, p. 127.

Hab. — ?

Closely allied to *F. hiantula*, but the orifice is larger and not contracted at the sides.

Species 42. (Mus. Cuming.)

FISSURELLA FULVESCENS. *Fiss. testā oblongo-ovatā, antice subattenuatā, depressā, subtilissimè radiatim et concentricè striatā, orificio oblongo; viridè fuscā, laeco putcherrius radiatā.*

THE FULVOUS FISSURELLA. Shell oblong-ovate, slightly attenuated anteriorly, depressed, very finely radiately and concentrically striated, orifice oblong; bright yellow, beautifully rayed with lake.

SOEWERY. Pro. Zool. Soc., 1834, p. 127.

Hab. Valparaiso (under stones on the shore); Cuming.

From the bright yellow colouring of this shell, the rays have very much the appearance of sun-beans.



42 A



43 a



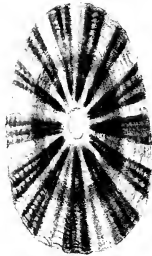
44



45



46



47



48



49



50



51

FISSURELLA.

PLATE VII.

Species 43. (Fig. *a* and *b*, Mus. Cuming.)

FISSURELLA MUTABILIS. *Fiss. testā ovatā, antice sub-
attenuatā, medio elevatā, lateribus subcompressō, ro-
ditiā impresso-striatis, striis concentricis deessenti,
orificio oblongo-ovato; cinerō aut virescente, interioribus
roseo-radiatā, radiā unica albicante plus minus obscuro
atringue notatā.*

THE CHANGEABLE FISSURELLA. Shell ovate, somewhat attenuated anteriorly, elevated in the middle, a little compressed at the sides, radiately impressly striated, crossed with concentric striae, orifice oblong-ovate; ash-colour or greenish, sometimes rayed with pink, and marked on both sides with a more or less obscure whitish ray.

SOWERBY, *Proc. Zool. Soc.*, 1834, p. 126; *Conch. Illus.* f. 67, 70.

Hab. Cape of Good Hope.

Of rather compressed growth, variously coloured, but mostly characterized by a white ray on either side of the orifice.

Species 44. (Mus. Cuming.)

FISSURELLA MICROTREMA. *Fiss. testā ovatā, antice sub-
attenuatā, depressiusculā, rugosā, radiatiā tenuilicetā,
teris nonnullis subpinnatilibus, orificio minuto; fuscā,
maculis porporicis albidis aspersā, teris purpureo-rufois,
circa orificiū nigricante-iridi, intus virescente.*

THE SMALL SLIT FISSURELLA. Shell ovate, somewhat attenuated anteriorly, rather depressed, rough, radiately thinly ridged, some of the ridges rather prominent, orifice minute; brown, sprinkled with a very few whitish spots, ridges purple-red, dark green around the orifice, interior greenish.

SOWERBY, *Proc. Zool. Soc.*, 1834, p. 125; *Conch. Illus.* f. 50.

Hab. Real Llejos, Central America (under stones at low water); Cuming.

This species has little character to distinguish it beyond the smallness of the orifice.

Species 45. (Mus. Cuming.)

FISSURELLA JÜCKEII. *Fiss. testā subquadrato-ovata, antice
inclinatā, costis terisque pulcherrimē squamatis
radiatā. interstitiis profunde, crasse clathratis, ori-*

ficio parvo, quadrato-ovato, marginē basali bidentato; albicante, subpellucidā, intus circa orificiū nigricante-iridi.

JÜCKE'S FISSURELLA. Shell somewhat squarely ovate, inclined anteriorly, ribs and ridges very beautifully squamate, radiated, interstices deep, and delicately latticed, orifice small, squarely ovate, basal margin bidentate; whitish, somewhat transparent, very dark green around the orifice in the interior.

Hab. Coast of Australia.

The most beautifully sculptured shell I remember having seen, rayed with numerous ribs and ridges, surmounted with thickly-set vaulted scales, and so deeply carved in the interstices that the ground surface is quite thin and transparent.

Species 46. (Mus. Cuming.)

FISSURELLA OESURA. *Fiss. testā ovatā, medio depressi-
usculā, radiatiā costatā et striatā, costis latis, obtusis,
distantibus, subcorrugatis, orificio oblongo, lateribus
subcontracto; purpureo-rufosecente, costis pallide cice-
ribus, circa orificiū nigro luctis, intus virescente.*

THE OBSCURE FISSURELLA. Shell ovate, slightly depressed in the middle, radiately ribbed and striated, ribs broad, obtuse, distant, somewhat corrugated, orifice oblong, a little contracted at the sides; purplish-red, ribs light green, stained with black around the orifice, interior greenish.

SOWERBY, *Proc. Zool. Soc.*, 1834; *Conch. Illus.* f. 27.

Hab. Gallapagos Islands (under stones at low water); Cuming.

The ribs of this species are rather superficial, being little raised above the surface; they are rather distant from each other and have a swollen straggling appearance.

Species 47. (Mus. Cuming.)

FISSURELLA EDITITIA. *Fiss. testā ovatā, antice sub-
attenuatā, radiatiā costatā, costis fortibus, irregularibus,
brevisquamatis, orificio parviscuto, rotundato-ovato;
purpureo-roseo et albi, intus virescente.*

THE SELECTED FISSURELLA. Shell ovate, somewhat attenuated anteriorly, radiately ribbed, ribs strong, irregular, shortly scaled, orifice rather small, rotundately ovate; purple-rose and white, interior greenish.

Hab. —? ?

Rayed with strong rugose ribs, sculptured with irregular blunted scales.

Species 48. (Mus. Cuming.)

FISSURELLA HONDURASSENSIS. *Fiss. testâ oblongo-ovata, depressiusculâ, anticè rix attenuatâ, radiatim superficialiter costatâ, costis obtusè squamato-corrugatis, orificio oblongo-ovato; luteo-vel-albâ, rufa pallidè radiatâ, circo orificioa olivaceâ et nigripunctatâ.*

THE HONDURAS FISSURELLA. Shell oblong-ovate, rather depressed, but little attenuated anteriorly, radiately superficially ribbed, ribs obtusely squamately wrinkled, orifice oblong-ovate; yellowish-white, rather faintly rayed with red, olive and black dotted around the orifice.

Hab. Honduras; Dyson.

This species is distinguished by the superficial wrinkled character of the spreading ribs, and the dark olive and black dotted marking around the orifice.

Species 49. (Mus. Cuming.)

FISSURELLA PICA. *Fiss. testâ oblongo-ovata, anticè inclinatâ, medio levatâ, radiatim tenuiteratâ, lris striis tenuibus corrugatis concentricis nudique crassè densatis, orificio antico, parvo, rotundato-ovato; cinereo-vel-â, alba varioratâ.*

THE MAGPIE FISSURELLA. Shell oblong-ovate, inclined anteriorly, lifted in the middle, radiately finely ridged, ridges delicately crossed throughout with fine wrinkled concentric striae, orifice anterior, small, rotundately ovate; ash-black, marbled with white.

SOWERBY, *Pro. Zool. Soc.*, 1834, p. 126; *Conch. Illus.* f. 32, 33.

Hab. St. Elena, West Columbia (on dead shells at a depth of from six to eight fathoms); Cuming.

Very delicately sculptured, and marked with dark rusty black and white.

Species 50. (Mus. Cuming.)

FISSURELLA INÆQUALIS. *Fiss. testâ oblongo-ovata, anticè attenuatâ et medio inclinatâ, medio elevatâ, lateribus subcompressis, radiatim tenuiteratâ, striis concentricis subtiliter clathratâ, orificio parvisculo, oblongo, medio leviter contracto; nigricante, circo orificioa cinereo-albicante.*

THE UNEQUAL FISSURELLA. Shell oblong-ovate, attenuated and much inclined anteriorly, raised in the middle, slightly compressed at the sides, radiately thinly ridged, finely latticed with concentric striae, orifice rather small, oblong, a little contracted in the middle; rusty black, ash-white around the orifice.

SOWERBY, *Pro. Zool. Soc.*, 1834, p. 126; *Conch. Illus.* f. 45.

Hab. Gallapagos Islands (under stones at low water); Cuming.

The sculpture of this species approaches that of the preceding in character, except in that the concentric striae have not the same wrinkled appearance.

Species 51. (Mus. Cuming.)

FISSURELLA CANCELLATA. *Fiss. testâ ovata, depressiusculâ, radiatim costatâ, costis parvisculis, univocis, striis concentricis, costis super nodosis, nudique cancellatâ, orificio rotundato-ovato, latiusculo; fuscescente-albâ, punctis nigricantibus tessellatim radiatâ, orificio cavento marginato.*

THE CANCELLED FISSURELLA. Shell ovate, rather depressed, radiately ribbed, ribs rather small, numerous, cancellated throughout with concentric striae, which are nodulous upon the ribs, orifice rotundately ovate, rather broad; brownish white, rayed in a tessellated manner with rusty black, orifice edged with blue.

SOWERBY, *Tankerville Catalogue*, No. 802; *Conch. Illus.* f. 29.

Patella cancellata, Solander.

Formicella Sowerbii, Gùilding.

Lucapina elegans, Gray.

Hab. St. Vincent's, West Indies; Gùilding. Honduras; Dyson.

Frequently of a delicate flesh-tinge, and always more or less strongly characterized by the blue colouring of the border of the orifice.

52 a



52 b



57



58



54



56



59



53



55



51

FISSURELLA.

PLATE VIII.

Species 52. (Fig. *a* and *b*, Mus. Cuming.)

FISSURELLA PUSTULA. *Fiss. testâ rotundato-ellipticâ, plano-depressâ, anticâ subtruncatâ, radiatâ obtusè costatâ, costellis striis concentricis elevatissimis deussatis; orificio subovato, oblongo, angustâ, lateribus medio excavatis; pallidè stramineis, circum orificium roseis, interdum roseo radiatis.*

THE PUSTULE FISSURELLA. Shell rotundately elliptic, flatly depressed, slightly truncated anteriorly, radiately obtusely ribbed, ribs deussated with slightly raised concentric striae; orifice somewhat anterior, oblong, narrow, sides excavated in the middle; pale straw-colour, pink round the orifice, sometimes rayed with pink.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. vii. p. 597.

Patella pustula, Linnæus.

Hab. West Indies; Gosse.

A peculiarly broad depressed species, faintly ribbed and very delicately coloured.

Species 53. (Mus. Cuming.)

FISSURELLA OBTUSA. *Fiss. testâ ovatâ, anticâ elevatiusculâ, radiatâ corrugato-costatâ, costis irregularibus, interstitiis subcompressis, apertura parvisculâ, oblongâ, lateribus subarcuatis; rosacea et albo radiatâ, radiis albis angustis, conspicuis, radiis rosaceis latioribus, prope basin cinescentibus.*

THE OBTUSE FISSURELLA. Shell ovate, rather elevated in the middle, radiately ribbed in a somewhat wrinkled manner, ribs irregular, interstices slightly impressed, aperture rather small, oblong, with the sides excavated; rayed with pink and white, white rays narrow, conspicuous, pink rays broader, fading into light green near the margin.

SOWERBY, *Conch. Illus. Cat. Fiss.* p. 7. f. 39.

Hab. Cape of Good Hope; Humphrey.

The pink colouring which forms the radiating bands of this species, appears only in the grooves of the sculpture, and has the appearance of fine lines.

Species 54. (Mus. Cuming.)

FISSURELLA RUPPELLI. *Fiss. testâ ovatâ, anticâ elevatâ, anticâ inclinatâ, radiatâ costatâ, costis ru-*

undatis, alterantia majoribus, interstitiis peculiariter et conspicue clathratis, orificio parvo, anticâ, quadrato-oblongo; fuscescente-rufâ, versus orificium albi, radiis ad vultu intusæ nigris ovatis.

RUPPELL'S FISSURELLA. Shell ovate, much raised in the middle and inclined anteriorly, radiately ribbed, ribs rounded, alternately larger, interstices peculiarly and conspicuously latticed, orifice small, anterior, squarely oblong; brownish red, white towards the orifice, ornamented with about eight intusæly black rays.

SOWERBY, *Pro. Zool. Soc.* 1834, p. 128.

Hab. Red Sea; Ruppell.

A very elaborately sculptured and characteristic species.

Species 55. (Mus. Cuming.)

FISSURELLA EQUALIS. *Fiss. testâ oblongo-ovatâ, tenuiculi, depressâ, striis concentricis et radiatibus, obtusâ, distinctibus, deussatis, orificio ovato, subamplo; cinereo-nigricante, albiradiatâ.*

THE EQUAL FISSURELLA. Shell oblong-ovate, rather thin, depressed, deussated with distant obtuse radiating and concentric striae, orifice ovate, rather large; ash black, rayed with white.

SOWERBY, *Pro. Zool. Soc.* 1834, p. 127.

Hab. St. Elena, West Columbia (on dead shells at a depth of from six to ten fathoms); Cuming.

Unusually thin and depressed, with a rather large orifice.

Species 56. (Mus. Cuming.)

FISSURELLA RUGOSA. *Fiss. testâ suboblongo-ovatâ, anticâ attenuatâ, depressâ, costis vultu laevibus rugosis radiatâ, interstitiis rugoso-licatis et striatis, marginè laevi simato et dentato, orificio parvisculo, oblongo-ovato; fuscâ et roseante, rosæ hic illic parvulatâ, costis hic illic albicantibus, intus cinescentibus.*

THE ROUGH FISSURELLA. Shell somewhat oblong-ovate, attenuated anteriorly, depressed, rayed with eight rough swollen ribs, interstices roughly ridged and striated, basal margin sinuated and dentated, brown and greenish, here and there pink-dotted, ribs here and there whitish, interior pale green.

SOWERBY, *Conch. Illus. Cat. Fiss.* p. 8. f. 54.

Hab. Callagagos Islands (under stones at low water); Cuming.

December, 1849.

This shell is of very depressed growth, the sculpture having an exaggerated rough and swollen appearance.

Species 57. (Mus. Belcher.)

FISSURELLA CLATHRATA. *Fiss. testā ovatā, medio gradatim conico-acuminatā, radiatim costatā, costis rotundatis, lirā intercurrente, liris concentricis costas super nodosis fortiter clathratis, margine basali dentato, dentibus binis, orificio parvisculo, orbiculari; albida, virescente-olivaceo obscure radiatā, colore basiu versus saturatiore.*

THE LATTICED FISSURELLA. Shell ovate, gradually conically acuminated in the middle, radiately ribbed, ribs rounded, with a ridge running between them, strongly latticed with concentric ridges which are nodulous upon the ribs, basal margin toothed, teeth in pairs, orifice rather small, orbicular, whitish, obscurely rayed with greenish olive, the colour being darker towards the base.

Hab. China Seas.

This elaborately carved species is remarkable for its high conical form, of which the rounded orifice is the summit.

Species 58. (Mus. Cuming.)

FISSURELLA ASPERELLA. *Fiss. testā ovatā, anticē suboblongatā, depressiusculā, radiatim striatā et obsolete costatā, punctis elevatis nodisque asperatā, orificio oblongo-ovato; olivaceo rubroque variā, anticē albi radiatā.*

THE ROUGH FISSURELLA. Shell ovate, somewhat attenuated anteriorly, rather depressed, radiately striated and obsolete ribbed, roughened throughout with raised dots, orifice oblong-ovate; variegated with olive and red, rayed anteriorly with white.

SOWERBY, *Proc. Zool. Soc.* 1834, p. 127. *Couch. Illus.* f. 71. *Hab.* Lobos Island, Peru: Cuming.

Distinguished by a finely roughened surface.

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

FISSURELLA FASCICULARIS. *Fiss. testā ovatā, superne suboblongatā, depressiusculā, lateribus compressis, radiatim costatā, costis aequalibus, rotundatis, nodulosis, prope marginem obsolete squamatis, orificio oblongo, lateribus medio excavatis; virescente, olivaceo fasciatā, interdum albicante, costis vicide rubris.*

THE FASCICULATED FISSURELLA. Shell ovate, slightly attenuated anteriorly, rather depressed, compressed at the sides, radiately ribbed, ribs equal, rounded, nodulous, obsolete squamate near the margin, orifice oblong, sides excavated in the middle; greenish, banded with olive, sometimes whitish, with the ribs very deep red.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. vi. p. 598. *Hab.* West Indies.

This species is very closely allied to the *F. pustula*, from the same locality, and they are the only two at present known of that particular type.



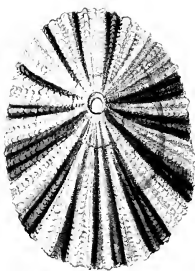
60 a



60 b



61



62



63



64



65

FISSURELLA.

PLATE IX.

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

FISSURELLA COMPRESSA. *Fiss. testâ oblongo-ovata, antice attenuata, elevatiusculâ, lateribus subcompressis, radiatim squamato-iridatâ, liris unicaribus subrudibus in interstitiis, orificio ovali, parvisculo; variceo-reflexo aut variceo-ciridâ, vie radiatâ.*

THE COMPRESSED FISSURELLA. Shell oblong-ovate, attenuated anteriorly, rather elevated, slightly compressed at the sides, radiately squamately ridged, with smaller rather rude ridges in the interstices, orifice oval, rather small; light flesh-red or blue-green, scarcely rayed.

Hab. — ?

The two specimens figured in the accompanying plate are differently coloured, but marked by a peculiarity of form and sculpture, in which they exactly agree.

Species 61. (Mus. Cuming.)

FISSURELLA OLIVACEA. *Fiss. testâ ovata, antice vie attenuata, subconica, radiatim subirregulariter rugosolirata, liris obsolete nodosis, orificio oblongo-ovato, medio subcontracto; albidi, olivaceo nitide radiatâ.*

THE OLIVE FISSURELLA. Shell ovate, scarcely attenuated anteriorly, rather conical, radiately somewhat irregularly roughly ridged, ridges obsolete nodose, orifice oblong-ovate, slightly contracted in the middle; whitish, neatly rayed with olive.

GRAY, Sowerby, Conch. Illus. *Fiss.* Cat. p. 5. f. 57.

Hab.

The olive rays are characteristic and well defined.

Species 62. (Mus. Belcher.)

FISSURELLA LINCOLNI. *Fiss. testâ ovata, medio subconica, vertice antice leviter inclinata, liris radiatibus compressis angustis, attenuatis majoribus, lirisque concentricis eleganter clathratâ, orificio subrotundo; albâ, cinereo-purpureo irregulariter radiatâ.*

LINCOLN'S FISSURELLA. Shell ovate, rather conical in the middle, top slightly inclined anteriorly, elegantly latticed with narrow compressed radiating ridges, which are alternately larger, orifice nearly round; white, rayed irregularly with ash-purple.

GRAY, Sowerby, Conch. Illus. *Fiss.* Cat. p. 7. f. 14.

Hab. Monterey, California.

This interesting species, named by Mr. Gray after the late Mr. Lincoln, from a specimen in that gentleman's cabinet, was collected by Capt. Sir E. Belcher during the voyage of H.M.S. Sulphur.

Species 63. (Mus. Cuming.)

FISSURELLA FUMATA. *Fiss. testâ ovata, antice subattenuatâ, elevatiusculâ, lateribus subcompressâ, radiatim lenicostolâ, costis anaraxis, subsquamatis, confertis, margine subacule denticulatis, vertice antice leviter inclinato, orificio oblongo-ovato, medio contracto; albidi, olivaceo-cinereo radiatâ, circa orificium varicoscule.*

THE SMOKED FISSURELLA. Shell ovate, slightly attenuated anteriorly, rather elevated, a little compressed at the sides, radiately finely ribbed, ribs numerous, subsquamate, cbesset, rather sharply denticulated at the margin, top slightly inclined anteriorly, orifice oblong-ovate, contracted in the middle; whitish, rayed with olive-ash, bluish around the orifice.

Hab. — ?

The bluish colouring around the orifice of this species is characteristic.

Species 64. (Mus. Cuming.)

FISSURELLA DENSILATHRATA. *Fiss. testâ ovata, medio elevata et antice inclinata, liris concentricis et radiatibus antice dense clathratâ, orificio subrotundo; albidi aut fusciculi, olivaceo radiatâ.*

THE THICKLY-LATHICED FISSURELLA. Shell ovate, elevated and inclined anteriorly in the middle, thickly latticed throughout with radiating and concentric ridges, orifice nearly round; whitish or yellowish, rayed with olive.

Hab. — ?

A very closely latticed species, raised and inclined anteriorly in the middle.

Species 65. (Mus. Cuming.)

FISSURELLA FIMBRIATA. *Fiss. testâ ovata, antice attenuatâ, elevato-conica, vertice antice inclinata, liris*

FISSURELLA.—PLATE IX.

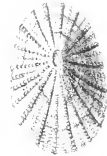
obtusis concentricis et radiantibus undique creberrimè gemmato-cancellatâ, orificio subrotundo; albidâ, ferrugineo-olivaceo pallidè radiatâ, faucibus fusco-olivaceo articulatis hic illuc radiatâ.

THE CORDED FISSURELLA. Shell ovate, attenuated anteriorly, elevately conical, inclined anteriorly at the top, very closely gemmately cancellated throughout with obtuse radiating and concentric lines, orifice

nearly round: whitish, rayed with faint olive-rust, and here and there with cords articulated with olive-brown.

Hab. Kurrachee, Mouth of the Indus.

The sculpture of this species is finely carved, and the colouring is remarkable for the dark articulated cords which radiate from the orifice.



FISSURELLA.

PLATE X.

Species 66. (Mus. Cuming.)

FISSURELLA BALANOIDES. *Fiss. testâ oratâ, anticæ sub-attenuatâ, subconicâ, levigatâ, radiatim leviter sulcatâ, orificio oblongo-ovato, medio subcontracto; flaccidule, rosæ interdum fuscâ, olivaceo et intense viridi radiatâ, radiis lavis saturatioribus notatis, virescente-albâ circa orificium.*

THE BALANUS-LIKE FISSURELLA. Shell ovate, a little attenuated anteriorly, rather conical, smooth, radiately slightly grooved, orifice oblong-ovate, a little contracted in the middle; yellowish, sometimes faintly tinged with rose, rayed with olive and dark green, rays marked with lines of the colour darker, greenish-white around the orifice.

Hab. — ?

The painting of this species somewhat resembles that of *F. niulosa*.

Species 67 (Mus. Cuming.)

FISSURELLA INDUSICA. *Fiss. testâ oratâ, elevatiusculâ, subconicâ, vertice anticæ inclinato, lavis radiatibus irregularibus et concentricis undique subobtusè clathratâ, orificio oblongo, medio leviter contracto; virescente-albâ, olivaceo-viridi radiatâ.*

THE INDUS FISSURELLA. Shell ovate, rather elevated, subconical, with the top inclined anteriorly, rather obtusely latticed throughout with concentric and irregular radiating ridges, orifice oblong, slightly contracted in the middle; greenish-white, rayed with olive-green.

Hab. Kurrachee, Mouth of the Indus.

Very similar to the following well-known species of our own shores in form, sculpture, and colouring.

Species 68. (Mus. Metcalf.)

FISSURELLA RETICULATA. *Fiss. testâ oratâ, subconicâ, medio levatiusculâ, vertice anticæ inclinato, radiatim levitè, lavis angustis, alternatim majoribus, lavis concentricis lamelliformibus, plus minus distinctibus, squamato-reticulatâ, orificio ovali, ætate reticulatâ; virescente aut squalidè albâ, olivaceo-viridi hic illic obscurè radiatâ.*

THE RETICULATED FISSURELLA. Shell ovate, subconical, slightly lifted in the middle, top inclined anteriorly, radiately ridged, ridges narrow, alternately larger, reticulated with more or less distant concentric lamelliform lines, orifice oval, rounded with age, greenish or dirty white, obscurely rayed here and there with olive-green.

Patella Græca, Pennant, Brit. Zool. ed. 1, vol. iv. p. 111. pl. 89, f. 153.

Patella reticulata, Donovan.

Fissurella reticulata, Recluz.

Fissurella cucullata, Gray.

Fissurella Europæa, Sowerby.

Eadem. *Fissurella apertura*, Montagu.

Sipho rubata, Brown.

Hab. Britain and the Mediterranean.

So many species have been confounded together under the common appellation of *Fissurella Græca*, that it is necessary the name should disappear from the nomenclature. D'Orbigny enumerates three species, from Peru, Patagonia, and the West Indies, the last-named being the *F. Græca* of Lamarek, and the preceding species show how distinctly this type is represented in the East.

Species 69. (Fig. a, Mus. Metcalf. Fig. b, Mus. Cuming.)

FISSURELLA INCHI. *Fiss. testâ oblongo-ovata, levatiusculâ medio subconicâ, anticæ inclinatâ, radiatim costatâ, costis alternatim majoribus, lavis concentricis lamelliformibus undique nitidè levitè clathratâ, orificio rotundato-ovato; albâ, costis majoribus squalidè, interstitiis interdum nigripunctatis.*

INCH'S FISSURELLA. Shell oblong-ovate, rather thin somewhat conical in the middle, and inclined anteriorly, radiately ribbed, ribs alternately larger, neatly and finely latticed throughout with concentric lamelliform lines, orifice retundately oval; white, the larger ribs fawn-coloured, interstices between the ribs sometimes black-dotted.

Hab. Raine's Island, North Australia; Inch.

The fawn-coloured ribs, which radiate from the orifice at about equal distances, are very characteristic in this species.

Species 70. (Mus. Cuming.)

FISSURELLA HONDURASENSIS. *Fiss. testā oblongo-ovali, subdepresso-convexā, radiatim costatā, costis annuosis, confertis, æqualibus, lineis concentricis subadatis undoso-cancellatis, orificio ovali, ovaplo, antice inclinato, lateribus leviter contracto; rosæo-albicante, recessu marginis circum-fuscescente linctā, pone orificium subæmbrā.*

THE HONDURAS FISSURELLA. Shell oblong-oval, rather depressly convex, radiately ribbed, ribs numerous, close-set, equal, nodosely cancellated with rather obtuse concentric lines, orifice oval, large, inclined anteriorly, slightly contracted at the sides; pinkish-white, light ash-brown towards the margin, bluish behind the orifice.

Hab. Honduras; Dyson.

Of a delicate flesh-pink white, with the ribs equal, not varying alternately, and finely nodose, where crossed by the concentric lines.

In *F. Listeri*, and other species, distinguished by blue colouring around the orifice, the colour mostly prevails in front, in this it is situated posteriorly.

Species 71. (Mus. Cuming.)

FISSURELLA LISTERI. *Fiss. testā subquadrato-ovatā, depressiusculā, costis concentricis et radiantibus factiter nodoso-striatā, intersitiis profunde excavatis, orificio oblongo, subaplo, antice inclinato; circum-ventrali, intus viridi plus minusve linctā et variegatā, circa orificium verubescente.*

LISTER'S FISSURELLA. Shell somewhat squarely ovate, rather depressed, strongly nodosely latticed with concentric and radiating ribs, the interspaces being deeply excavated, orifice oblong, rather large, inclined anteriorly; greenish-white, more or less stained and variegated with dark green, bluish around the orifice.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 476.

Fissurella Græca, Lamarck.

Hab. West Indies.

Named anew by D'Orbigny, for the reasons given under the head of *F. reticulata*, from which it differs principally in having the sculpture so much more strongly latticed, and nodose, rather than squamate, at the point of crossing.



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FISSURELLA.

PLATE XI.

Species 72. (Mus. Cuming.)

FISSURELLA EGIS. *Fiss. testâ oblongâ, depressâ, parva elevatâ, liris radialibus subequalibus anarosis confertis, lirisque concentricis antice squamato-cancellatâ, orificio oblongo, subcapto, antice inclinato; albi, rirescenti-olivaceo subolivaceo laticulatâ.*

THE EGIS FISSURELLA. Shell oblong, depressed, but little raised, neatly squamately cancellated with numerous close-set nearly equal ridges and concentric lines, orifice oblong, rather large, inclined anteriorly; white, rather obscurely broadly rayed with greenish-olive.

Hab. — ?

A beautifully-sculptured species, having very much the form of a *Paranophorus*.

Species 73. (Mus. Cuming.)

FISSURELLA ATRATA. *Fiss. testâ ovatâ, antice attenuatâ, depressâ-planâ, medio elevatâ, obsolete liri-radiatâ, liris marginatâ coras obscure nodulosâ, orificio oblongo, lateribus subcontractis; intus purpureo-atrâ, circa orificium albi, atro radiatâ, marginâ interno latè purpureo-atro.*

THE INKY FISSURELLA. Shell ovate, attenuated anteriorly, depressly flattened, slightly raised in the middle, obsolete rayed with ridges, which are obscurely nodulous towards the margin, orifice oblong, slightly contracted at the sides; deep purple-black, white, rayed with black around the orifice, internal margin broadly purple-black.

Hab. — ?

Belonging to the Peruvian type with broad inner margin, *F. latimarginata*, *Bridgesii*, &c., but specifically distinct.

Species 74. (Mus. Cuming.)

FISSURELLA EXQUISITA. *Fiss. testâ ovatâ, antice sic attenuatâ, tenui, depressâ, medio elevatâ, radiatâ creberrimatâ, liris subregularibus, corrugatis, obscure nodulosâ, orificio percapto, lateribus contracto; flavirescenti-albâ, purpureo-nigricante conspicuè et regulariter radiatâ, marginâ interno tessellatâ.*

THE EXQUISITE FISSURELLA. Shell ovate, scarcely attenuated anteriorly, thin, rather depressed, raised in the middle, radiately closely ridged, ridges somewhat irregular, corrugate, obscurely nodulous, orifice very large, contracted at the sides; yellowish-white, conspicuously regularly rayed with purple-black, internal margin tessellated.

Hab. Strait of Magallanic.

A very characteristic species, in which the orifice of true key-hole form is unusually large.

Species 75. (Mus. Metcalf.)

FISSURELLA METCALFII. *Fiss. testâ oblongo-ovatâ, depressâ, medio levatâ, radiatâ liri-radiatâ, liris anarosis confertis, subangulatis, liris concentricis antice exbecerrimè depressatis, orificio oblongo-ovatâ, medio subexcavato, antice inclinato, marginâ denticulatâ, denticulis hic illic bifidis; circumscissâ-albâ, olivaceo interruptè laticulatâ.*

METCALFE'S FISSURELLA. Shell oblong-ovate, rather depressed, raised in the middle, radiately ridged, ridges numerous, close-set, slightly angled, very closely decussated throughout with concentric striae, orifice oblong-ovate, slightly excavated in the middle, inclined anteriorly, margin denticulated, denticles here and there bifid; greenish-white, interruptedly broadly rayed with olive.

Hab. — ?

The ridges, which are very numerous and close-set, are slightly angular, and very closely festooned throughout with concentric striae.

Species 76. (Mus. Cuming.)

FISSURELLA CLYPEUS. *Fiss. testâ ovatâ, crassiusculâ, depressâ, obscure radiatâ liri-radiatâ, liris distinctibus, obsolete muricato-nodulosâ, orificio oblongo-ovatâ, parvisculâ; albâ, ustulato-nigra peculiariter reticulato-radiatâ, marginâ interno tessellatâ.*

THE SHIELD FISSURELLA. Shell ovate, rather thick, depressed, obscurely radiately ridged, ridges distant, obsolete prickly nodose, orifice oblong-ovate, rather small; whitish, peculiarly rayed in a reticulated manner with burnt-black, internal margin tessellated.

June, 1850.

SOWERBY, Pro. Zool. Soc. 1834, p. 128.

Hab. St. Elena, West Columbia; Cuming.

Mr. Cuming only collected a single specimen of this very characteristic species, and it still remains unique in his cabinet.

Species 77. (Mus. Cuming.)

FISSURELLA GALERICULUM. *Fiss. testâ ovatâ, antice radice attenuatâ, crassiusculâ, lateribus compressâ, radiatâ multistriatâ, orificio oblongo, subamplo, lateribus medio leviter excavatis; intense rufa-purpureâ, utriusque orificium albiradiatâ, margine interno latiusculo, rufa-purpureo.*

THE BONNET FISSURELLA. Shell ovate, very much attenuated anteriorly, rather thick, compressed at the sides, radiately many-striated, orifice oblong, rather large, sides slightly excavated in the middle; deep red-purple, white-rayed on each side of the orifice, internal margin rather broad, red-purple.

Hab. — ?

Distinguished by its attenuately compressed form, and deep crimson-purple colouring.

Species 78. (Mus. Cuming.)

FISSURELLA SALEBROSA. *Fiss. testâ suborbiculari-ovatâ, depressâ, radiatâ radice costatâ, costis subaequalibus, laminais concentricis undique conspicuè fimbriato-squamatis, orificio rotundato; albidiâ, fusca hic illic tinctâ et lineari-ovata.*

THE RUGGED FISSURELLA. Shell somewhat orbicularly ovate, depressed, radiately ridged, ribs nearly equal, conspicuously fimbriately squamate throughout with concentric laminae, orifice rounded; whitish, stained and linearly marked here and there with brown.

Hab. Kurraheec, Mouth of the Indus.

The ribs of this species are surmounted throughout with rough erect furled-downed scales.



FISSURELLA.

PLATE XII.

Species 79. (Mus. Cuming.)

FISSURELLA ROTA. *Fiss. testâ ovatâ, depressiusculâ, radiatâ obscure obtuse liratâ, iris sulcis concentricis deussatis, orificio elongato-oblongo, lateribus subconvexis; olivaceo-fuscâ, conspicuè albidiradiatâ, radiis prope marginem fusco-punctatis, circa orificium roseo.*

THE WHEEL FISSURELLA. Shell ovate, rather depressed, radiately obscurely obtusely ridged, ridges deussated with concentric grooves, orifice elongately oblong, a little contracted at the sides; olive-brown, conspicuously white-rayed, rays blotched near the margin with brown, pink round the orifice.

Hab. Cape of Good Hope.

The white rays have a raised appearance in this species and are very characteristic.

Species 80. (Mus. Cuming.)

FISSURELLA STELLATA. *Fiss. testâ oratâ, depressâ, medio clavatiusculâ, obscure liriradiatâ, iris obsolete nodulosis, orificio oblongo, subangusto, lateribus medio excavatis; albidâ, rufescente radiatâ, radiis nigricante-purpureo maculatis, margine interno latè tessellatè.*

THE STARRED FISSURELLA. Shell ovate, depressed, rather elevated in the middle, obscurely rayed with ridges, which are obsolete nodulous, orifice oblong, rather narrow, sides excavated in the middle; whitish, rayed with light red, the rays being blotched with blackish purple, internal margin broadly tessellated.

Hab. Valparaiso (attached to dead shells at a depth of from six to twelve fathoms); Cuming.

A very prettily rayed species, distinguished internally by the broad tessellated painting of the margin.

Fig 81. (Mus. Cuming.)

The shell here represented proves to be a smooth variety of *F. rota* described above, and is from the same locality.

For Sp. 81 see Pl. XV.

Species 82. (Mus. Cuming.)

FISSURELLA CAYENNENSIS. *Fiss. testâ oratâ, convexo-convatâ, lateribus subcompressâ, radiatâ multiliratâ,*

iris tenuibus, striis concentricis annuosis deussatis margine subtiliter crenulato, orificio oblongo, lateribus medio excavatis, radiis inclavatis; albidâ, fusco crenulatâ, circa orificium cerealescente.

THE CAYENNE FISSURELLA. Shell ovate, convexly conical, rather compressed at the sides, radiately many-ridged, ridges fine, deussated with numerous concentric striae, finely crenulated at the margin, orifice oblong, sides excavated in the middle, inclined anteriorly; whitish, variegated with brown, bluish around the orifice.

LAMARCK. *Ann. sans vert.* (De-l'Hayes' edit.) vol. vii. p. 591.
Hab. Cayenne, Guiana.

The close-set radiating ridges, which form at their extremity the finely crenulated margin, are about eighty in number.

Species 83. (Mus. Cuming.)

FISSURELLA CRENIFERA. *Fiss. testâ oblongo-oratâ, impressâ, radiatâ costatâ et striatâ, costis angustissimis, striis concentricis obsolete squamato-deussatis, margine ex crenulato, orificio elongato-oblongo, lateribus medio excavatis; albo et fusco-rufa latè cadula.*

THE CRENLATED FISSURELLA. Shell oblong-ovate, depressed, radiately ribbed and striated, ribs minutely nodose, obsolete squamately deussated with concentric striae, margin scarcely crenulated, orifice elongately oblong, sides excavated in the middle, broadly rayed with white and brown-red.

SOEWERY, *Proc. Zool. Soc.* 1834, p. 125.

Hab. Real Llojo, Central America.

This species is not sufficiently crenulated to be entered to the specific name which has been applied to it.

Species 84. (Mus. Cuming.)

FISSURELLA ALTERNATA. *Fiss. testâ oblongo-oratâ, subquadratâ, elevatâ, lateribus subcompressâ, radiatâ costatâ, radiis angustis, iris tribus purpureis in orbiculatis, lamina annuosis fibrinatis concentricis angustis, squamato-obtusâ, orificio subquadrate-oblongo, medio inclavato, lateribus medio excavatis; albidâ, fusco olivaceo punctatè squamata et orbiculatè radiatè, circa orificium cerealescente.*

June, 1850.

THE ALTERNATE FISSURELLA. Shell oblong-ovate, subquadrate, raised, a little compressed at the sides, radiately ribbed, ribs narrow, with three rather small ridges in the interstices, squamately deussated throughout with numerous concentric furbelowed laminae, orifice subquadrate oblong, inclined anteriorly, sides excavated in the middle; whitish, faintly spotted and rayed with ash-olive, bluish in front of the orifice.

SAY, Gould, MS.

Hab. — ?

The ribs of this species are rendered prickly by the delicate squamate growth of the concentric furbelowed laminae.

Species 85. (Mus. Cuming.)

FISSURELLA HUMPHREYI. *Fiss. testā oratā, crossiusculā, valvā conicā, Balanusformi, radiatim fortiter costatā, costis nodosis et corrugatis, circa orificium alternantibus eruvitis, orificio oblongo-orato, subaequali, medio contracto; albi.*

HUMPHREY'S FISSURELLA. Shell ovate, rather thick, very conical, Balanus-shaped, radiately strongly ribbed, ribs nodose and corrugate, fading alternately around the orifice, which is oblong-ovate, rather large, and contracted in the middle; white.

Hab. Cape de Verd Islands.

Belonging to the same type as *F. glaucopsis* and *alabasrites* from the same locality, but remarkably distinguished specifically by its elevated conical form. I dedicate this species to the memory of the late Mr. Humphrey, in remembrance of an admirable figure of it drawn and published by him in his 'Conchology, or Natural History of Shells,' pl. 7. f. 7.

Species 86. (Mus. Cuming.)

FISSURELLA DYSONI. *Fiss. testā oratā, acuminato-conicā, lateribus compressi, radiatim squamato-costatā, costis elevatis, interstitiis nitidē cancellatis, orificio subquadrate-oblongo, lateribus medio subexcavatis; carnes-cretae-albi, intus nigro radiatā.*

DYSON'S FISSURELLA. Shell ovate, acuminately conical, compressed at the sides, radiately squamately ribbed, ribs elevated, interstices neatly cancellated, orifice

somewhat squarely oblong, slightly excavated at the sides; bluish-white, rayed with deep black.

Hab. Honduras; Dyson.

A beautifully sculptured species, allied in form to *F. Ruppellii*.

Species 87. (Mus. Cuming.)

FISSURELLA PANAMENSIS. *Fiss. testā rotundato-orati, lateribus subcompressi, radiatim leucicostatā, interstitiis subtilissimē cancellatis, orificio parvo, rotundato; albū, fuscō maculatū et fulguratū.*

THE PANAMA FISSURELLA. Shell rotundately oval, a little compressed at the sides, radiately thinly ribbed, the interstices being very finely cancellated, orifice small, rounded; white, blotched and lightning-marked with brown.

SOWERBY, Pro. Zool. Soc. 1834, p. 127.

Hab. Panama (on dead shells at a depth of from six to ten fathoms); Cuming.

Of a more rounded form than the preceding species, with a smaller and rounder orifice.

Species 88. (Mus. Cuming.)

FISSURELLA CALYCEATA. *Fiss. testā oratā, anticē subattenuatā, medio acuminato-conicā, tenuissimā, pellucidā, lateribus compressi, radiatim costatā, costis fimbriato-squamatis, tribus posticis nullis majoribus, costarum interstitiis pulcherrimē fimbriato-clathratis, orificio parvo, rotundato-orato, intus posticē calyculato; pellucido-albū, roseo tinctū.*

THE CHAMBERED FISSURELLA. Shell ovate, slightly attenuated anteriorly, acuminately conical in the middle, very thin, pellucid, compressed at the sides, radiately ribbed, ribs fimbriately squamate, the three posterior ribs much the larger, interstices between the ribs very beautifully fimbriately latticed, orifice small, rotundately ovate, posteriorly chambered within; transparent white, tinged with rose.

SOWERBY, Genera of Shells, No. 21. f. 4.

Hab. — ?

It may be doubted whether the inner chamber posterior to the orifice is a character of the species. The larger size and squamate growth of the three posterior ribs may be regarded of more importance.

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Am. Mus. Nat. Hist.

FISSURELLA.

PLATE XIII.

Species 89. (Mus. Cuming.)

FISSURELLA CANDIDA. *Fiss. testâ suboblongato-ovata, concavo-elevata, lateribus subcompressis, crassiusculâ, liris parvis concentricis et radiatibus nudique decussatis, orificio parvo, antice valde inclinato, lateribus medio excavatis; albâ, immaculatâ.*

THE WHITE FISSURELLA. Shell somewhat elongately ovate, concavely raised, somewhat compressed at the sides, rather thick, decussated throughout with small radiating and concentric ridges, orifice small, very much inclined anteriorly, sides excavated in the middle; white, unspotted.

SOWERBY, Couch. Illus. Fiss. Cat. p. 7. f. 58.

Hab. — ?

The truncated growth of the posterior basal edge, described by Mr. Sowerby, appears to be accidental.

Species 90. (Mus. Cuming.)

FISSURELLA EXQUISITA. *Fiss. testâ ovata, medio elevato-conico, viz antice inclinata, liris radiatibus et concentricis nudique eximie profunde clathratâ, liris radiatibus alternis minoribus, prope orificinâ ecanidis, orificio orbiculari-ovato, parvisculo; pellucido-albâ.*

THE EXQUISITE FISSURELLA. Shell ovate, elevately conical in the middle, scarcely inclined anteriorly, delicately and deeply latticed throughout with radiating and concentric ridges, of which the alternate are smaller and disappear near the orifice, orifice orbicularly ovate, rather small; transparent white.

Hab. — ?

The latticed sculpture of this species is extremely delicate and well-defined.

Species 91. (Mus. Cuming.)

FISSURELLA CATILLES. *Fiss. testâ oblongo-ovata, crassiusculâ, lateribus subcompressâ, obscure decussatâ lirate, liris subradiatis, fere ecanidis, orificio ovato, subamplo; rosacâ, albido-radiatâ.*

THE LITTLE DISH FISSURELLA. Shell oblong-ovate, rather thick, a little compressed at the sides, obscurely decussately ridged, ridges somewhat rude, almost faded, orifice ovate, rather large; pinkish, rayed with dull white.

Hab. Java.

This specimen is uncoloured round towards the base, which is not likely to be a character of the species.

Species 92. (Mus. Cuming.)

FISSURELLA DIGITALE. *Fiss. testâ orbiculari-ovata, gibboso-conica, antice valde inclinata, liris elevatis radiatibus et concentricis nudique echebriacè decussatis, orificio parvo, suborbiculari; intense cinerâ, prope basim fuscâ, circa orificinâ cærulescente.*

THE THIMBLE FISSURELLA. Shell orbicularly ovate, gibbously conical, very much inclined anteriorly, very closely decussated throughout with raised concentric and radiating striae, orifice small, nearly orbicular; deep ash-colour, brown near the base, bluish around the orifice.

Hab. — ?

An extremely characteristic species, having very much the appearance of a small *Pulella*.

Species 93. (Mus. Cuming.)

FISSURELLA DACTYLOSA. *Fiss. testâ ovata, subconicâ, liris radiatibus et concentricis antice deorsu clathratâ, liris radiatibus alternatis majoribus et prominentibus, orificio ovato, parvo; albida, ferruginoso-fusca pallidè latiradiatâ.*

THE FINGERED FISSURELLA. Shell ovate, rather conical, sharply thickly latticed with radiating and concentric ridges, which are alternately larger and prominent, orifice ovate, rather small; whitish, faintly broadly rayed with rust-brown.

Hab. Kurrachee, Mouth of the Indus.

In this species every other alternate ridge is larger and more prominent than the rest.

Species 94. (Mus. Cuming.)

FISSURELLA AUSTRALIS. *Fiss. testâ ovata, medio valde elevata, antice ecanidè inclinata, costis costellisque compressis, acutis, radiatibus, liris concentricis nudique profunde umbroso-clathratâ, orificio parvo, ovato; albida, pallidè ferruginoso subobscurè aciculato-radiatâ.*

THE SOUTHERN FISSURELLA. Shell ovate, much raised in the middle, rather concave anteriorly, deeply nodosely

lattice throughout with radiating sharp compressed ribs and riblets, and concentric ridges, orifice small, ovate; whitish, somewhat obscurely blotch-rayed with light rust-brown.

KRAUSS, Sudafrie. Moll. p. 67. pl. 4. f. 10.
Hab. Natal, South Africa.

A characteristic species of the same type as our British *F. reticulata*.

Species 95. (Mus. Cuming.)

FISSURELLA CONIODES. *Fiss. testâ ovatâ, elevato-conicâ, crassâ, radiatim corrugato-costatâ, costis valdè irregularibus et rugosis, orificio ovato, centrali; albâ, circa orificium cinereo-nigrescente, intus viridescente.*

THE CONIA-LIKE FISSURELLA. Shell ovate, elevated conical, thick, radiately corrugately ribbed, ribs very irregular and rugose, orifice ovate, central; white, ashy black around the orifice, greenish in the interior.

Hab. Cape of Good Hope.

Closely allied to the *F. glaucopsis* and *alabastrites* from the Cape de Verd Islands.

Species 96. (Mus. Cuming.)

FISSURELLA CRUCIATA. *Fiss. testâ oblongo-ovatâ, antice inclinatâ, lateribus subcompressâ, liris radiantibus striisque concentricis elevatis nitidè clathratâ, liris alteris minoribus, prope orificium crassis, orificio orbiculato-ovato; albâ, radiis quatuor ferrugineis interruptis basiâ versus notatâ.*

THE CROSS-MARKED FISSURELLA. Shell oblong-ovate, inclined anteriorly, rather compressed at the sides, neatly latticed with radiating ridges and raised concentric striae, alternate ridges smaller and fading near the orifice, orifice orbicularly ovate; white, marked towards the base with four interrupted rust-brown rays.

KRAUSS, Sudafrie. Moll. p. 67. pl. 4. f. 9.
Hab. Natal, South Africa.

The cross-marked painting, which is more defined in the specimen represented by Dr. Krauss, must not be regarded as a specific character.

Species 97. (Mus. Cuming.)

FISSURELLA LENTIGINOSA. *Fiss. testâ oblongo-ovatâ, gibboso-concavâ, depressinsculâ, liris radiantibus striisque concentricis elevatis multique densè clathratâ, orificio antico, orbiculato-ovato, subaaplo; albâ, fuscis hic illic cinniè lentiginosâ, maculis grandibus nigrescente-fuscis prope ad basim.*

THE FRECKLED FISSURELLA. Shell oblong-ovate, gibbously concave, rather depressed, thickly latticed throughout with radiating ridges and concentric raised lines, orifice anterior, orbicularly ovate, rather large; white, delicately freckled here and there with brown, with large blackish-brown blotches next the base.

Hab. ———?

The freckled style of painting appears to be a somewhat characteristic feature in this species.

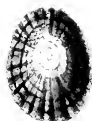
Species 98. (Mus. Cuming.)

FISSURELLA LARVA. *Fiss. testâ ovatâ, elevato-conicâ, costis distinctibus lirisque interarctis striis concentricis nitidè clathratâ, orificio antice inclinato, ad extremitatem anticam peculiariter contracto; nigrescente-olivaceâ, circa orificium hic illic albo notatâ.*

THE MASK FISSURELLA. Shell ovate, elevated conical, neatly latticed with distant ribs with intermediate ridges and concentric striae, orifice inclined anteriorly and peculiarly contracted at the anterior extremity; blackish-olive, marked here and there about the orifice with white.

Hab. Island of St. John's, West Indies; Hartvig.

A strongly sculptured shell with a very peculiar orifice, which is unusually contracted at the anterior end.



FISSURELLA.

PLATE XIV.

Species 99. (Mus. Cuming.)

FISSURELLA PILEOPOIDES. *Fiss. testâ ovatâ, calli elevatâ, anticâ conspicuè falcatâ, radiatâ densilibratâ, orificio oblongo-ovato, parviusculo; albâ.*

THE PILEOPSIS-LIKE FISSURELLA. Shell ovate, very much raised, anteriorly conspicuously hooked, radiately thickly ridged, orifice oblong-ovate, rather small: white.

Hab. Island of Masbate, Philippines (on the reefs at low water): Cuming.

Remarkable for the top of the shell being very much produced anteriorly, after the manner of a *Pileopsis*.

Species 100. (Fig. 100, 101, Mus. Cuming.)

FISSURELLA SINGAPORENSIS. *Fiss. testâ ovatâ, subconicâ, costellis numerosis radiatibus striis concentricis elevatiusculis decussatibratâ, orificio parvo, suborbiculari; albâ, cinereo-nigricante subobscurè radiatâ et variegatâ.*

THE SINGAPORE FISSURELLA. Shell ovate, subconical, thickly latticed with numerous radiating fine ribs and raised concentric striae, orifice small, nearly orbicular; whitish, somewhat obscurely rayed and variegated with light ash-black.

Hab. Singapore; Cuming.

The latticed sculpture of this species becomes frequently amalgamated and obscure towards the base.

Species 102. (Mus. Cuming.)

FISSURELLA SIEBOLDII. *Fiss. testâ ovatâ, medio elevatâ, anticâ curvatâ, radiatâ costatâ, costis subcompressis, Astautibus, posticis majoribus, elevatis, concentricè rugoso-squamatis, orificio parvo, ovato, antico; albâ, cinereo variegatâ.*

SIEBOLD'S FISSURELLA. Shell ovate, raised in the middle, curved anteriorly, radiately ribbed, ribs rather compressed, distant, the posterior larger, elevated, concentrically roughly squamate, orifice small, ovate, anterior; whitish, variegated with ash.

Hab. Japan; Dr. Siebold.

Belonging to a very characteristic group, including *F. calyculata* and others, in which the radiating ribs arc

widely separated, more or less squamate, and always larger at the posterior end of the shell.

Species 103. (Mus. Cuming.)

FISSURELLA MURICATA. *Fiss. testâ ovatâ, medio conicâ, lateribus depressiusculâ, radiatâ subobscurè tenuilibratâ et striatâ, liris auricuto-nodosis, orificio oblongo, lateribus medio excavatis; nigricante-purpureâ, albâ circum orificinâ.*

THE PRICKLY FISSURELLA. Shell ovate, conical in the middle, rather depressed at the sides, radiately somewhat obscurely ridged and striated, ridges prickly-nodose, orifice oblong, sides excavated in the middle: blackish-purple, whitish round the orifice.

Hab. ———?

Distinguished chiefly by the prickly-nodose character of the ridges.

Species 104. (Mus. Cuming.)

FISSURELLA FIMBRIATA. *Fiss. testâ ovatâ, medio elevatâ-conicâ, radiatâ costatâ, costis angustis, compressis, lamâis concentricis pulcherrimè squamato-fimbriatâ, orificio ovato, centrali; griseo-albâ, nigricante-cinereo hic illic variegatâ.*

THE FURBELOWED FISSURELLA. Shell ovate, elevatedly conical in the middle, radiately ribbed, ribs narrow, compressed, very beautifully squamately furbeled with concentric laminae, orifice ovate, central: greyish-white, variegated here and there with blackish-ash.

Hab. Port Moller, North-east Coast of Australia (under stones at low water): Jukes.

In this most elaborately furbeled species the orifice has a very central aspect and is peculiarly elevated.

Species 105. (Mus. Cuming.)

FISSURELLA VIMINEA. *Fiss. testâ oblongo-ovatâ, depresso-planâ, medio elevatiusculâ, obtusâ, radiatâ costatâ, costis parvis, confertis, irregularibus, liris concentricis nautique creberrimè decussatis, orificio oblongo, parviusculo; cinereo-olivaceâ, obscurè radiatâ, pellucido-albâ circum orificinâ.*

August, 1850.

THE WICKER FISSURELLA. Shell oblong-ovate, depressly flattened, rather elevated in the middle, obtuse, radiately ribbed, ribs small, close-set, irregular, very closely decessated throughout with concentric ridges, orifice oblong, rather small; ash-olive, obscurely rayed, transparent around the orifice.

Hab. — ?

The sculpture of this species is very peculiar, having the appearance of wicker-work.

Species 106. (Mus. Cuming.)

FISSURELLA OSTREINA. *Fiss. testā ovatā, subconicā, lateribus subcompressā, radiatim tiratā, liris subrugosis, irregularibus, obscure nodulosis, orificio oblongo, angusto, lateribus medio excavatis; nigro-purpureā, orificium versus roseā, intus virescente.*

THE PURPLE FISSURELLA. Shell ovate, slightly conical, rather compressed at the sides, radiately ridged, ridges subrugose, irregular, obscurely nodulous, orifice oblong, narrow, sides excavated in the middle; very dark purple, pinkish towards the orifice, greenish within.

Hab. — ?

Simple in character, though irreferable to any hitherto described species.

Species 107. (Mus. Cuming.)

FISSURELLA TICAGNICA. *Fiss. testā ovatā, gibboso-elevatā, anticē vixdē inclinatā, sulcatā, liris radiantibus fortibus angustis, striis concentricis elevatis undique densiclatratā, orificio elongato-oblongo, lateribus me-*

dio excavatis; virescente-albā, olivaceo-viridi sparsim maculatā et punctatā, carulescente circa orificium.

THE TICAO FISSURELLA. Shell ovate, gibbously elevated, anteriorly much inclined, slightly hooked, thickly latticed throughout with strong narrow radiating ridges and raised concentric striae, orifice elongately oblong, sides excavated in the middle; greenish-white, sprinkled with dots and blotches of olive-green, bluish round the orifice.

Hab. Island of Ticao, Philippines (under stones at low water); Cuming.

An extremely characteristic species, much elevated and curved anteriorly, with the same narrow oblong orifice mostly seen in the flat species.

Species 108. (Mus. Cuming.)

FISSURELLA QUADRIRADIATA. *Fiss. testā ovatā, gibboso-elevatā, anticē subinclinatā, liris fortibus radiantibus, alternatim majoribus, striisque elevatis concentricis densissimē clathratā, orificio subelongato-oblongo, lateribus medio excavatis; albā, nigro maculatā et conspicuē quadriradiatā.*

THE FOUR-RAYED FISSURELLA. Shell ovate, gibbously elevated, a little inclined anteriorly, very thickly latticed with strong radiating ribs, which are alternately larger, and concentric raised striae, orifice rather elongately oblong, with the sides excavated in the middle; white, blotched and conspicuously four-rayed with black.

Hab. Bais, Island of Negros, Philippines; Cuming.

Very similar in form and sculpture to *F. Rappellii*, from which it differs in respect of the orifice.



101



102



103



104



105



106



107



108

FISSURELLA.

PLATE XV.

Species 81. (Mus. Cuming.)

FISSURELLA NIGRIRADIATA. *Fiss. testâ elevato-conico, anticâ inclinata, crassinuculâ, costis radiantibus et concentricis densè et subulâ clathratâ, interstitiis profundis, orificio ovato; albi, intus nigro interruptè radiati.*

THE BLACK-RAYED FISSURELLA. Shell elevately conical, inclined anteriorly, rather thick, closely and somewhat finely latticed with radiating and concentric ridges, interstices deep, orifice ovate; white, rayed in an interrupted manner with incuse black.

Hab. — ?

A pure white shell, rayed with about eight deep black streaks, which are here and there interrupted.

Fig. 109 a, b, c. (Mus. Cuming.)

The specimens here figured must be referred to *F. calyculata* already described. It is an extremely variable species, except in that the three posterior ribs are always larger than the rest, and the sculpture of the same plan more or less thickened.

Species 110. (Mus. Metcalf.)

FISSURELLA ELONGATA. *Fiss. testâ subelongato-oblongâ, depressâ, tenuiculâ, costis tenuibus radiantibus et concentricis aequalibus nitidè clathratâ, orificio ovato, angustâ, anticâ; albâ, maculis parvis ferrugineis hic illic sparsis subulâ.*

THE ELONGATED FISSURELLA. Shell elongately oblong, depressed, rather thin, neatly latticed throughout with radiating and concentric fine ribs, orifice ovate, large, anterior; whitish, sparingly marked here and there with small rust-spots.

PHILIPPI, Abbild. und Besch. Conch. vol. ii, p. 33, *Fiss.* pl. 1. f. 2.

Hab. — ?

A depressed whitish shell, with a few small scattered rust-spots, and rather large orifice.

Species 111. (Mus. Belcher.)

FISSURELLA ACULEATA. *Fiss. testâ oblongo-oratâ, anticâ subulcanatâ, depressâ, medio elevatiusculâ, radiatâ*

costellatâ, concentricè levitatâ, lacinis elegantè aculeato-squamatis, orificio ovato, angustâ; spallivo-albâ.

THE PRICKLY FISSURELLA. Shell oblong-ovate, slightly attenuated anteriorly, depressed, rather elevated in the middle, radiately finely ribbed, concentrically laminated, laminae elegantly prickly-scaled, orifice ovate, large; fawn-white.

Hab. — ?

The radiating ribs of this elegant species are almost wholly formed of elevated prickly scales.

Species 112. (Mus. Metcalf.)

FISSURELLA CONCINNA. *Fiss. testâ oblongo-oratâ, depressiusculâ, medio elevatâ, radiatâ obscure noduloso-ligatâ, striae concentricis subangustis densatâ, orificio oblongo, lateribus medio excavatis; maculâ olivaceâ, nigricante-purpureo laticulatâ, orificio aurigine albo.*

THE PRETTY FISSURELLA. Shell oblong-ovate, rather depressed, raised in the middle, radiately obscurely nodulously ridged, decessated with subconjugate concentric striae, orifice oblong, sides excavated in the middle; dull olive, broadly rayed with dark purple, edge of the orifice white.

PHILIPPI, Abbild. und Besch. Conch. vol. ii, p. 66. *Fiss.* pl. 2. f. 5.

Hab. Chili.

This species approximates very closely to *F. mariana* in a young state.

Species 113. (Mus. Belcher.)

FISSURELLA ENCLISA. *Fiss. testâ elevato-conicâ, anticâ inclinatâ, costis radiantibus et concentricis subtiliter clathratâ, costis elegantè aurigato-squamatis, orificio parvo, lateribus medio excavatis; foveo-centro-albâ, foveo-fusca hic illic maculatâ.*

THE LOFTY FISSURELLA. Shell elevately conical, inclined anteriorly, finely latticed with radiating and concentric ribs which are elegantly squamate, orifice small, sides prettily excavated in the middle; brownish-white, spotted here and there with pinkish-brown.

Hab. Eastern Seas.

A remarkably high conical species, sometimes delicately
sometimes stoutly squamately latticed.

Species 114. (Mus. Cuning.)

FISSURELLA CYATHULUM. *Fiss. testā orato-conicā, elevatā, radiatā acutē squamato-costatā, costis alternatiā majoribus, liris concentricis angustis clathralis, orificio parvo, ovato; albidā, fusco variegatā.*

THE LITTLE CUP FISSURELLA. Shell ovately conical, elevated, radiately sharply squamately ribbed, ribs alternately larger, latticed with narrow concentric ridges, orifice small, ovate: whitish, variegated with brown.

Hab. —?

Somewhat like the preceding species, but not so

elevated, more coarsely latticed, and differently perforated.

Species 115. (Mus. Belcher.)

FISSURELLA LIMATULA. *Fiss. testā oblongo-ovalā, antice subattenuatā, lateribus paululum compressā, radiatā subtiliter et confertim auricato-striatā, orificio magno, ovato; albā, nigricante tinctā et radiatā.*

THE LITTLE FILE FISSURELLA. Shell oblong-ovate, somewhat attenuated anteriorly, sides a little compressed, radiately finely and closely prickly-striated, orifice large, ovate: white, stained and variegated with pale black.

Hab. —?

A depressed shell, finely prickly-striated over its surface.



116



117



115



119 a



119 b



119 c



120



118



114



122

FISSURELLA.

PLATE XVI.

Species 116. (Mus. Cuming.)

FISSURELLA OCTAGONA. *Fiss. testâ oratâ, elevatiusculâ, octo-costatâ, liris porris, minute granulosis in interstitiis, orificio orato, latiusculo, antice inclinato; albidâ, radiis latis, fusciscentibus prope marginem, circa orificium carulescente.*

THE OCTAGON FISSURELLA. Shell ovate, rather elevated, eight-ribbed, with small minutely granulated ridges in the interstices, orifice ovate, rather broad, inclined anteriorly; whitish, with broad light-brown rays near the margin, bluish around the orifice.

Hab. Island of Ticao, Philippines (on dead shell); Cuming.

As in several other species of this genus, the posterior ribs are rather more prominent than the anterior.

Species 117. (Mus. Cuming.)

FISSURELLA NIGRO-OCCELLATA. *Fiss. testâ oratâ, elevatiusculâ, radiatâ et concentricè fortiter costatâ, costis subdistansibus, interstitiis deussiculatis, orificio orbiculari; albidâ, maculis nigris prope marginem seriatim pictâ.*

THE BLACK-EYED FISSURELLA. Shell ovate, rather elevated, strongly radiately and concentrically ribbed, ribs rather distant, interstices thickly latticed, orifice orbicular; white, painted with a row of black spots near the margin.

Hab. Island of Ticao, Philippines (dredged from the depth of six fathoms); Cuming.

Characterized by a black spot in the interstice between each rib next the margin.

Species 118. (Fig. 118, 119 a, 119 b, 119 c, Mus. Cuming.)

FISSURELLA GIBBERULA. *Fiss. testâ oratâ, subconico, antice inclinatâ, radiatâ costatâ, costis subangustis, confertis, interstitiis subprofundè clothratâ, orificio parvo; albidâ, ad nigro aut viridi variegatâ.*

THE SLIGHTLY GIBBOUS FISSURELLA. Shell ovate, subconical, inclined anteriorly, radiately ribbed, ribs rather narrow, close-set, interstices rather deeply

latticed, orifice small; whitish, variegated with black or green.

Hab. Mediterranean.

The painting of this species appears to vary from black to dark olive-green, and the latticed sculpture is more strongly developed in some specimens than in others.

Species 120. (Mus. Metcalfe.)

FISSURELLA MUS. *Fiss. testâ oratâ, antice subattenuatâ, lateribus subangustis, antice radiè inclinatâ, radiatâ creberrimè transverse, striis concentricis densè deussatis, orificio oblongo, lateribus medio excavatis; albidâ, cinereo-nigriscente profusè et irregulariter radiatâ.*

THE MOUSE FISSURELLA. Shell ovate, somewhat attenuated anteriorly, rather compressed at the sides, much inclined anteriorly, radiately very closely finely ridged, thickly deussated with concentric striae, orifice oblong, sides excavated in the middle; whitish, profusely and irregularly rayed with ash-black.

Hab. — ?

The closeness of the sculpture as above described gives to this species an elaborately granulated aspect.

Species 121. (Fig. a, Mus. Metcalfe; Fig. b, Mus. Cuming.)

FISSURELLA GEMMULATA. *Fiss. testâ oblongo-oratâ, antice inclinatâ, liris tenuibus nodulosis radique confertâ radiatâ, orificio oblongo-orato, parvisculo, lateribus medio excavatis; albidâ, carulesco-nigriscente peculiariter radiatâ.*

THE BEADED FISSURELLA. Shell oblong-ovate, inclined anteriorly, closely rayed throughout with fine nodulous ridges, orifice oblong-ovate, rather small, sides excavated in the middle; white, peculiarly rayed with blue-black.

Essarellu minuta, Sowthby (not of Lamarck).

Hab. — ?

I name this shell anew on the testimony of M. Deshayes (Anim. sans vert. vol. vii p. 599, note), that it is not

F. munda of Lamarck, but have not have been able to identify that species.

Species 122. (Mus. Cuning.)

FISSURELLA TEGULA. *Fiss. testâ conico-ovatâ, crassiusculâ, anticè inclinâtâ levigatâ, lineis impressis radiatibus obscurè decussatâ, orificio oblongo, lateribus subexcavatis; nigricante-caratâ, vittis angustis saturatioribus radiatâ.*

THE SLATE FISSURELLA. Shell conically ovate, rather thick, inclined anteriorly, smooth, obscurely decussated with impressed radiating lines, orifice oblong, slightly excavated at the sides; blackish-blue, rayed with narrow fillets of a darker tint.

Hab. — ?

A peculiar slate-coloured species of an elevated conical form, with little indication of sculpture.

FISSURELLA.

	Plate.	Species.		Plate.	Species.
<i>aculeata</i> , <i>Reeve</i>	XV.	111	<i>digitale</i> , <i>Reeve</i>	XIII.	92
<i>.Egis</i> , <i>Reeve</i>	XI.	72	<i>dubia</i> , <i>Reeve</i>	VI.	35
<i>aequalis</i> , <i>Sowerby</i>	VIII.	55	<i>Dysoni</i> , <i>Reeve</i>	XII.	86
<i>affinis</i> , <i>Gray</i>	V.	26	<i>edititia</i> , <i>Reeve</i>	VII.	47
<i>alabastrites</i> , <i>Reeve</i>	V.	27	<i>elongata</i> , <i>Philippi</i>	XV.	110
<i>alternata</i> , <i>Sig.</i>	XII.	84	<i>Europaea</i> , <i>Sowerby</i>	X.	68
<i>aperta</i> , <i>Sowerby</i>	VI.	39	<i>exelsa</i> , <i>Reeve</i>	XV.	113
<i>apertata</i> , <i>Montagu</i>	X.	68	<i>exquisita</i> , <i>Reeve</i>	XI.	74
<i>aspera</i> , <i>Sowerby</i>	V.	30	<i>fascicularis</i> , <i>Lamarck</i>	VIII.	59
<i>asperella</i> , <i>Sowerby</i>	VIII.	58	<i>fimbriata</i> , <i>Reeve</i>	XIV.	194
<i>atrata</i> , <i>Reeve</i>	XI.	73	<i>fulvescens</i> , <i>Sowerby</i>	VI.	42
<i>australis</i> , <i>Kruss</i>	XIII.	94	<i>funata</i> , <i>Reeve</i>	IX.	63
<i>Balanoides</i> , <i>Reeve</i>	X.	66	<i>funiculata</i> , <i>Reeve</i>	IX.	65
<i>Barbadiensis</i> (<i>Patella</i>), <i>Gmelin</i>	IV.	23	<i>galeriolum</i> , <i>Reeve</i>	XI.	77
<i>bella</i> , <i>Reeve</i>	III.	21	<i>gemmdata</i> , <i>Reeve</i>	XVI.	121
<i>bicolor</i> , <i>Adams</i>	IV.	25	<i>gibba</i> , <i>Philippi</i>	XVI.	118
<i>biradiata</i> , <i>Forsk.</i>	III.	20	<i>gibberula</i> , <i>Lamarck</i>	XVI.	118
<i>Bridgesii</i> , <i>Reeve</i>	III.	16	<i>glancopis</i> , <i>Reeve</i>	V.	28
<i>calyculata</i> , <i>Sowerby</i>	XII.	88	<i>Græca</i> , <i>Lamarck</i>	X.	71
<i>cancellata</i> , <i>Gray</i>	X.	68	<i>Græca</i> , nonnul.	X.	68
<i>cancellata</i> (<i>Patella</i>), <i>Solander</i>	VII.	51	<i>granulis</i> , <i>Sowerby</i>	II.	11
<i>caudata</i> , <i>Sowerby</i>	XIII.	89	<i>grisea</i> , <i>Reeve</i>	VI.	38
<i>catillus</i> , <i>Reeve</i>	XIII.	91	<i>hiantula</i> , <i>Lamarck</i>	VI.	36
<i>Cayennensis</i> , <i>Lamarck</i>	XII.	82	<i>Hondurascensis</i> , <i>Reeve</i>	VII.	48
<i>Chemnitzii</i> , <i>Sowerby</i>	I.	1	<i>Humphreyi</i> , <i>Reeve</i>	XII.	85
<i>Chilensis</i> , <i>Sowerby</i>	II.	14	<i>inæqualis</i> , <i>Sowerby</i>	VII.	50
<i>clathrata</i> , <i>Reeve</i>	VIII.	57	<i>Inœi</i> , <i>Reeve</i>	X.	69
<i>claypeiformis</i> , <i>Sowerby</i>	I.	4	<i>Indusica</i> , <i>Reeve</i>	X.	67
<i>clypeus</i> , <i>Sowerby</i>	XI.	76	<i>Jaronicensis</i> , <i>Sowerby</i>	VI.	36
<i>coarctata</i> , <i>King</i>	V.	32	<i>Jukesii</i> , <i>Reeve</i>	VII.	45
<i>compressa</i> , <i>Reeve</i>	IX.	60	<i>larva</i> , <i>Reeve</i>	XIII.	98
<i>concinna</i> , <i>Philippi</i>	XV.	112	<i>lata</i> , <i>Sowerby</i>	I.	5
<i>Conoides</i> , <i>Reeve</i>	XIII.	95	<i>latimarginata</i> , <i>Sowerby</i>	III.	19
<i>costata</i> , <i>Lesson</i>	II.	14	<i>lentiginosa</i> , <i>Reeve</i>	XIII.	97
<i>erassa</i> , <i>Lamarck</i>	I.	4	<i>limbata</i> , <i>Reeve</i>	XV.	115
<i>eremifera</i> , <i>Sowerby</i>	XII.	83	<i>limbata</i> , <i>Sowerby</i>	II.	10
<i>eremulata</i> , <i>Reeve</i>	III.	18	<i>Lincolni</i> , <i>Gray</i>	IX.	62
<i>eruciata</i> , <i>Kruss</i>	XIII.	96	<i>Listeri</i> , <i>D'Orbigny</i>	X.	71
<i>Cuningii</i> , <i>Reeve</i>	III.	17	<i>macrotrema</i> , <i>Sowerby</i>	V.	31
<i>cyathulata</i> , <i>Reeve</i>	XV.	114	<i>maxima</i> , <i>Sowerby</i>	IV.	22
<i>daetylosa</i> , <i>Reeve</i>	XIII.	93	<i>Mediterranea</i> , <i>Gray</i>	I.	3
<i>Darwini</i> , <i>Reeve</i>	I.	7	<i>Metalfii</i> , <i>Reeve</i>	XI.	75
<i>densidatibrata</i> , <i>Reeve</i>	IX.	64	<i>Mexicana</i> , <i>Sowerby</i>	VI.	49
<i>depressa</i> , <i>Lamarck</i>	I.	4	<i>microtrema</i> , <i>Sowerby</i>	VII.	44

	Plate.	Species.	Plate.	Species.
<i>minuta</i> , Sowerby	XVI.	121	<i>pulchra</i> , Sowerby	II.
<i>muricata</i> , Reece	XIV.	103	<i>pustula</i> (<i>Patella</i>), Linnæus	VIII.
<i>mutabilis</i> , Sowerby	VII.	43	<i>quadriradiata</i> , Reece	XIV.
<i>mus</i> , Reece	XVI.	120	<i>reticulata</i> (<i>Patella</i>), Donovan	X.
<i>Natalensis</i> , Krass	III.	15	<i>rota</i> , Reece	XII.
<i>neglecta</i> , Deshayes	I.	3	<i>rudis</i> , Deshayes	II.
<i>nigra</i> , Lesson	II.	11	<i>rugosa</i> , Sowerby	VIII.
<i>nigriradiata</i> , Reece	XV.	81	<i>Ruppellii</i> , Sowerby	VIII.
<i>nigrita</i> , Sowerby	VI.	11	<i>sagittata</i> , Reece	VI.
<i>nigro-ovellata</i> , Reece	XVI.	117	<i>suberosa</i> , Reece	XI.
<i>nigro-punctata</i> , Sowerby	IV.	8	<i>scutella</i> , Gray	VI.
<i>niubosa</i> (<i>Patella</i>), Linnæus	V.	29	<i>Sicholdii</i> , Reece	XIV.
<i>nodosa</i> (<i>Patella</i>), Born	IV.	24	<i>Singaporensis</i> , Reece	XIV.
<i>obscura</i> , Sowerby	VII.	46	<i>stellata</i> , Reece	XII.
<i>obtusa</i> , Sowerby	VIII.	53	<i>subrotunda</i> , Deshayes	V.
<i>octagona</i> , Reece	XVI.	116	<i>suffusa</i> , Reece	X.
<i>olivacea</i> , Gray	IX.	61	<i>tegula</i> , Reece	XVI.
<i>oriens</i> , Sowerby	II.	13	<i>Ticaonica</i> , Reece	XIV.
<i>ostrina</i> , Reece	XIV.	106	<i>trapéziana</i> , Sowerby	VI.
<i>Panamaensis</i> , Sowerby	XII.	87	<i>venusta</i> , Reece	XIII.
<i>Peruviana</i> , Lamarck	V.	26	<i>vinuica</i> , Reece	XIV.
<i>Philippiana</i> , Reece	VI.	37	<i>violacea</i> , Eschscholtz	II.
<i>pica</i> , Sowerby	VII.	49	<i>virescens</i> , Sowerby	IV.
<i>pieta</i> (<i>Patella</i>), Gmelin	I.	6	<i>viridula</i> , Lamarck	IV.
<i>Pileopsoides</i> , Reece	XIV.	99	<i>volcano</i> , Reece	IV.

ERRATA.

Sp. 37. For *F. nigra*, Philippi, read *F. Philippiana*, Reece.

Sp. 39. *F. aperta*. I have been informed by Mr. Gray that this species, his *Populata aperta*, is not the *Fissacellodes a spectata* of D'Orbigny from Patagonia, but that it belongs to a different though closely allied mollusk inhabiting Port Natal, as figured by Dr. Krass in his 'Sudafrikanischen Mollusken,' pl. 4. f. 11. Having no authentic specimens of the Patagonian species, by which to identify it with certainty, I was struck with the re-semblance of the shell before me to D'Orbigny's figures.

Sp. 70. For *F. Honavarascusta*, read *F. suffusa*, Reece.

Sp. 90. For *F. exquata*, read *F. venusta*, Reece.

Sp. 118. *F. gibberula*, add authority, Lamarck. Anim. sans vert. Deshayes' edit.) vol. vi. p. 599 and synonyme *F. gibba*, Philippi.

MONOGRAPH

OF THE GENUS

PARTULA.

Almighty God, and full of might,
By whom all thing is made of nought,
To thee my heart is ready dight,
For upon thee is all my thought.

Old Hymn of Abbot



PARTULA.

PLATE I.

Genus PARTULA, Ferrussac.

Testa parviuscula, acuminato-ovata vel oblonga, basin versus plerumque obliquè producta, parva umbilicata, angustibus quinque ad sex, plus minus lævibus, lineis impressis spiritalibus minutè insculptis, columellâ incrassatâ, plano-appressâ, apertura subquadrato-oratâ, labro late planireflexo, interduo calloso.

Shell rather small, acuminately ovate or oblong, generally obliquely produced towards the base, but little umbilicated, whorls five to six in number, more or less smooth, minutely engraved with impressed spiral lines, columella thickened, flatly appressed, aperture somewhat squarely ovate, lip broadly flatly reflected, sometimes callous.

Partula is the Polynesian type of that tribe of snails which is represented in other parts of the world by the genus *Bellina*; and it is questioned by many whether, under these circumstances, seeing that there is no difference in the soft parts, it claims to rank as a genus. The *Partulae* have a strong peculiarity of form, plan of colouring, and even of sculpture. The shells are distinguished by a comparative uniformity of size and substance, and all are more or less conspicuously engraved with fine spiral impressed lines; whilst the aperture is peculiar in being produced somewhat obliquely, and in having mostly an auricular aspect, owing to the callous thickening of the lip, which is invariably broadly flatly reflected.

De Ferrussac was the first to note the particular local character of what may be termed the *Bellina* of the Pacific Islands, and the present genus, by which he proposed to distinguish them, obtained considerable additional interest from the species added to it by Mr. Broderip, from Mr. Cuming's gleanings in that locality. The views of De Ferrussac and Broderip have not been adopted by Dr. Pfeiffer, but they appear to be very generally followed by collectors in this country; and the characters above recorded for generic purposes render the species easy of detection.

There is one species, *P. auriculata*, which differs from the typical character of the group in having two elevated plaits entering into the aperture, one upon the columella and another upon the body-whorl, which does not appear to be a modification of the callosity often present in that part of the shell. It is much smaller in size, and might prove hereafter to constitute the type of another genus.

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

PARTULA ROSA. *Part. testâ pyramidaliter-oratâ, umbilicata basin versus obliquè productâ, tenuicollâ, angustibus plano-coarctis, spiritaliter minutè impresso-lineatis, angustâ ultimo obsolete angulata, apertura quadrato-oratâ; costano-rosatâ, interduo late fasciatâ, aperturae saepe nunc albâ, nunc rosâ tinctâ.*

THE ROSE PARTULA. Shell pyramidally ovate, umbilicated, obliquely produced towards the base, rather thin, whorls flatly convex, spirally minutely impressly lined, last whorl obsolete angled, aperture squarely oval; chestnut-rose, sometimes banded with yellow, inferior of the aperture white, or stained with rose.

Broderip, Pro. Zool. Soc. 1832, p. 125.

Hab. Huahine, Society Islands; Cuming.

Distinguished by its acuminated form, which is obsolete angled towards the base, then produced somewhat obliquely. The shell is moreover of light substance, and delicately coloured more or less with dark chestnut-rose and yellow.

Species 2. (Mus. Cuming.)

PARTULA BRUMALIS. *Part. testâ subacuminato-oblonga, umbilicatâ, angustibus spiritaliter minutè impresso-lineatis, apertura ovatâ, columellâ labrique late reflexis; fulvo-costatâ, labro albo.*

THE WINTERLY PARTULA. Shell somewhat acuminately oblong, umbilicated, whorls spirally minutely impressly lined, aperture ovate, lip and columella broadly reflected; fulvous-chestnut, lip white.

Hab. —?

Closely allied to *P. Ginnuosensis*, from which it differs in being of a more oblong acuminated form: it is of one uniform colour throughout.

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

PARTULA INFLATA. *Part. testâ conico-oratâ, umbilicata, spirâ brevissimâ, angustibus calidè inflatis, ultimo angulato-gibbosis, concentricè calidè striatis, spiritaliter minutè impresso-lineatis, lineis undulatis, apertura parviusculâ, columellâ labrique latissime planireflexis. albâ vel pallidè cinnamomeâ, epidermide tenui indurâ labro albo.*

THE INFLATED PARTULA. Shell conically ovate, umbilicated, spire rather short, whorls considerably inflated, last whorl angularly gibbous, concentrically ridged, striated, spirally minutely impressly lined, lines slightly waved, aperture rather small, lip and columella very broadly flatly reflected; white or pale cinnamon, covered with a thin epidermis, lip white.

REDAE, *Pro. Zool. Soc.* 1842, p. 197, and *Conch. Syst.* vol. ii. pl. 175 f. 11, 12.

Bulimus Therapses, Pfeiffer.

Hab. Sandwich Islands.

Well characterized by its light gibbous inflated growth.

Species 4 (Mus. Cuming.)

PARTULA GUAMENSIS. *Part. testâ ovatâ, ventricosâ, umbilicatâ, spirâ brevissimâ, anfractibus subrotundatis, spiciliter minute impresso-lineatis, apertura subangulâ, intus castaneâ, labro parvoparvâ-âllâ.*

THE GUAM PARTULA. Shell ovate, ventricose, umbilicated, spire rather short, whorls somewhat round, spirally minutely impressly lined, aperture rather large; dark chestnut, lip purplish-white.

Bulimus Guamensis, Pfeiffer, *Phil. Abbild. und Besch. Conch. Bul.* pl. 4. f. 9.

Hab. Island of Guam, Ladrones.

This species has a swollen appearance, and is of less solid substance than the following

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

PARTULA FABÆ. *Part. testâ acuminato-oblongâ, umbilicatâ, subdiusculâ, anfractibus subplano-concavis, plicis primis sub leate minute spiralliter lineatis, columellâ latè reflectâ, tuberculatâ, apertura subquadrato-ovalî, labro latè planireflexo, intus castaneo; intus castaneâ aut fuscâ, fusco strigatâ, interdum nigrofasciatâ.*

THE BEAN PARTULA. Shell acuminate oblong, umbilicated, rather solid, whorls somewhat flatly convex, the first few minutely spirally impressly lined beneath the lens, columella broadly reflected, tuberculated, aperture somewhat squarely oval, lip broadly flatly reflected, callous inwardly; dark chestnut or fulvous, streaked with brown, sometimes black-banded.

SOWERBY, *Zool. Beechey's Voyage*, p. 144. pl. 38. f. 4.

Livæ faba, Martyn.

Helic faba, Gmelin.

Arvis-Mida fasciata, Chemnitz.

Voluta fasciata, Dillwyn.

Bulimus australis, Bruguière.

Partula australis, Férussac.

Bulimus faba, Lamarek.

Partula Eolivaoides, Lesson.

Hab. Ulîtea, Society Islands (on bushes); Cuming.

Remarkable for its solid growth and broadly flattened lip. It is extremely variable in colour, being dark chestnut, or fulvous, or partaking of both colours, and is found in great abundance.



PARTULA.

PLATE II.

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

PARTULA RADIOLATA. *Part. testâ oblongâ, levicenti, unilobatâ, basiâ versus obliquè productâ, anfractibus quinque, convexis, lineis impressis spiritalibus subdistinctibus cingulatis, columellâ latè reflectâ, pluvio-appressâ, aperturâ obliquè ovatâ, lobis tenuibus, latè reflexis, semipellucidâ, pallidè stramineâ aut cinnamonaceo-rufescente, lineis opaco-albis obliquè promiscuè notatâ.*

III. DELICATELY RAYED PARTULA. Shell oblong, rather thin, unilobated, obliquely produced towards the base, whorls five in number, convex, encircled with rather distant spiral impressed lines, columella broadly reflected, flatly appressed, aperture obliquely ovate, lip rather thin, broadly reflected; semitransparent, pale straw-colour or cinnamon-red, promiscuously marked with oblique opaque-white lines.

Bulimus radiolatus, Pfeiffer, Pro. Zool. Soc. 1846, p. 39.
Hab. Island of Guam, Ladrones (on bushes); Cuming.

An extremely delicate species, of a light straw-colour, or pale cinnamon-red, profusely obliquely marked with fine opaque-white lines.

Species 7. (Mus. Cuming.)

PARTULA LINEATA. *Part. testâ acuminato-oblongâ, unilobatâ, levicenti, anfractibus sex, spiritalibus tenuissimè impresso-striatis, foveolato, subpellucidâ, foveis distinctibus cingulatis.*

THE LINEATED PARTULA. Shell acuminate oblong, unilobated, rather thin, whorls six in number, spirally very finely impressly striated; light fulvous, semitransparent, encircled with two distant chestnut bands.

LESSON, Voyage de la Coquille, p. 324, pl. 7. f. 8, 9.

Hab. Friendly Islands.

The lower of the two widely separated chestnut bands which encircle this species is only seen on the last whorl.

Species 8. (Fig. *8 a*, and 19, Mus. Cuming.)

PARTULA AMABILIS. *Part. testâ pyramidalis-oblongâ, unilobatâ, sublevicenti, cing. unilobatâ, anfractibus sex, rufescentibus, obliquè tenuistriatis, ad saturnum obscure sublividè cingulatis, fulvescente, costata conspicuè bifuscatâ, interstria acuminato-foveisecente, apicâ cer-*

sis erenti rosâ, aperturâ obliquè ovatâ, lobis parvis plicosecatis.

THE LOVELY PARTULA. Shell pyramidally oblong, sinistral, somewhat turreted, scarcely unilobated, whorls six in number, convex, obliquely finely striated, obscurely very finely crenulated at the sutures; fulvous, conspicuously broadly banded with chestnut, sometimes orange-fulvous, tinged with rose towards the apex, lip sometimes livid purple.

Bulimus amabilis, Pfeiffer, Pro. Zool. Soc. 1846, p. 38

Hab. Island of Anna; Captain Rohr.

The fine spiral impressed lines which characterize most of the species are absent in this.

Species 9. (Mus. Cuming.)

PARTULA DENSILINEATA. *Part. testâ acuminato-conicâ, levicenti, unilobatâ, spiræ saturnis impressis, anfractibus superiè subplanulatis et tenuissimè cingulatis, inferiè rotundatis aut leviter angulatis, columellâ pluvio-reflectâ, obsoletè plicatâ, aperturâ ovatâ, lobis parvis reflexis, albicente, lineis obliquis ferruginis cinctisq; densissimè notatâ.*

THE THICKLY-LINEATED PARTULA. Shell acuminate conical, rather thin, unilobated, sutures of the spire impressed, whorls rather flattened and finely margined at the upper part, rounded and slightly angled at the lower, columella flatly reflected, absolutely plicate, aperture ovate, lip but little reflected; whitish, very thickly painted with oblique rust and ash lines.

Hab. —?

The lip of this shell, the only example of the species known to me, is scarcely mature. The linear painting is discontinued before reaching the umbilicus.

Species 10. (Fig. *8 b*, Mus. Cuming.)

PARTULA ISABELLINA. *Part. testâ oblongâ, convexâ, unilobatâ, anfractibus quinque, convexis, obliquè striatis, apicâ convexâ, sub levicenti, tenuissimè spiritalibus impresso-fuscatis, columellâ lacunosâ, plicato-gibbatâ, collisulati superiè unilatè, aperturâ obliquè productâ, lobis erentibus reflexis; subdilatè foveolato, lobis cingulatis.*

THE SOILED PARTULA. Shell oblong, thick, unilobated, whorls five in number, convex, obliquely striated, very finely spirally impressly lined towards the

apex beneath the lens, columella thickened, furnished above with a callosity, plicately gibbous, aperture obliquely produced, lip callously reflected: dull yellowish, lip white.

Bulimus isabellianus, Pfeiffer, Pro. Zool. Soc. 1846, p. 39.

Hab. ———?

Of this species also only a single specimen is yet known. It is allied to the following, but is essentially distinguished by its more oblong form.

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

PARTULA OTAHEITANA. *Part. testâ globoso-conicâ, crassissimâ, interdum sinistrorsâ, umbilicatâ, anfractibus quinque, convexis, levibus, apicem versus, sub lente, tenuissimè impresso-lineatis, columellâ incrassatâ, callositate saepe supraë auratâ, aperturâ auriculatâ, labro*

valdè calloso; costatâ, aut luteâ, aut castaneo luteoque fasciatâ, labro albo.

THE OTAHEITE PARTULA. Shell globose, conical, very thick, umbilicated, sometimes sinistral, whorls five in number, convex, smooth, very finely impressly lined towards the apex beneath the lens, columella thickened, often furnished with a callosity above, aperture auriculated, lip very callous; chestnut, or yellow, or chestnut and yellow banded, lip white.

Bulimus Otaheitanus, Bruguière, Enc. Méth. vol. i. p. 347.

Helix percerus, Chemnitz.

Eadem varietas. *Partula auriculata*, Broderip.

Hab. Society Islands.

An extremely variable species, of which Fig. 13 *a, b*, in the next plate, represents its most slender form, and the figures which accompany this description its most gibbous state, with callosity, constituting Mr. Broderip's *P. auriculata*.



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PARTULA.

PLATE III.

Species 12. (Mus. Cuming.)

PARTULA RUBESCENS. *Part. testâ acuminato-oblongâ, crassiusculâ, sinistrorsâ, compressè umbilicatâ, aufractibus ser, laevibus, subrotundatis, columellâ labroque pluriflexis; rosaceâ, apicem versus rubro-fuscâ.*

THE PINK PARTULA. Shell acuminately oblong, rather thick, sinistral, compressly umbilicated, whorls six in number, smooth, somewhat rounded, lip and columella broadly reflected; pink, red-brown towards the apex.

Hab. — ?

This species, of which Mr. Cuming possesses three specimens, is larger than *P. rosea*, and of more solid acuminated growth.

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

PARTULA OTAHAITANA. The shells here figured represent the sinistral and more slender state of the above-named species, described in the preceding plate. This variety has been erroneously labelled in collections *P. australis*, which is only another name of *P. foba*.

For Species 13, see Plate IV.

Species 14. (Mus. Cuming.)

PARTULA HYALINA. *Part. testâ oblongâ, vix umbilicatâ, aufractibus ser, obliquè levissimè subrudè striatis, lineis spiralibus impressis minutè et creberrimè sculptâ; pellucido-albâ.*

THE HYALINE PARTULA. Shell oblong, scarcely umbilicated, whorls six in number, obliquely very lightly but rudely striated, and minutely very closely engraved with impressed lines; transparent white.

BRODERIP, Pro. Zool. Soc. 1832, p. 32.

Hab. Tumaeco, Society Islands (on the Ti plant); Cuming.

A delicate pellucid bluish-white shell, elaborately carved, beneath the lens, with spiral impressed lines.

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

PARTULA GIBBA. *Part. testâ orato-conicâ, basin versus gibbâ et latè inflatâ, umbilicatâ, spirâ brevi, acutâ, aufractibus quinque, convexis, sub lente spiraliter creber-*

rimè impresso-lineatis, aperturâ subquadrato-ovalî, obliquè productâ; flavicante, apicem versus rosceâ, ret cinereâ, suturis albis.

THE GIBBOUS PARTULA. Shell ovately conical, gibbous and broadly inflated towards the base, umbilicated, spire short, sharp, whorls five in number, convex, spirally very closely impressly lined beneath the lens, aperture somewhat squarely ovate, obliquely produced; yellowish, tinged with rose towards the apex, or ash, sutures white.

FERUSSAC, Prodrome, p. 66.

Bullianus gibbus, Quoy.

Hab. Sandwich Islands (on plants); Quoy and Gaimard.

There are two very distinct varieties of this species; one of pale yellow tipped with rose, the other of an uniform ash-colour, in which the white sutures are more conspicuous.

Species 16. (Mus. Cuming.)

PARTULA GANYMEDES. *Part. testâ oblongo-conicâ, tenuiculâ, umbilicatâ, aufractibus quinque, convexis, obliquè leviter subrudè striatis, lineis spiralibus impressis minutissimè et creberrimè sub lente sculptis, aperturâ subquadrato-ovalî, columellâ labroque latè pluriflexis; albâ, subpellucidâ, fuscâ unice castaneâ cingulatâ, epidermide tenuissimâ indatâ.*

GANYMEDE'S PARTULA. Shell oblong-conical, rather thin, umbilicated, whorls five in number, convex, obliquely lightly somewhat rudely striated, very minutely and closely sculptured, beneath the lens, with impressed lines, aperture somewhat squarely ovate, lip and columella broadly flatly reflected; white, somewhat transparent, encircled with a single chestnut band, covered with a very thin fugacious epidermis.

Bullianus Ganymedes, Pfeiffer, Pro. Zool. Soc. 1846, p. 39.

Hab. Society Islands.

Only the upper edge of the chestnut band is left visible in the first four whorls of this very elegant and characteristic species.

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

PARTULA VARIA. *Part. testâ acuminato-oratâ, tenuiculâ,*

April, 1850.

compressè unilicatis, anfractibus quinque, concavis, laticibus, aequalibus, nisi sub lente minutissimè spiritaliter impresso-lineatis, apertura subquadrato-ovatà, obliquà, flavicante, aut purpureo-castaneà, aut flavicante et purpureo-castaneò fuscatis, labro colore interduo tincto, apice saepe nigricante.

THE VARIABLE PARTULA Shell acuminately ovate, rather thin, compressly unilicated, whorls five in number, convex, smooth, shining, unless very minutely spirally impressly lineated beneath the lens,

aperture somewhat squarely ovate, oblique; yellowish, or purple-chestnut, or yellow and purple-chestnut banded, lip sometimes stained with colour, apex often blackish.

BRODERIP, Pro. Zool. Soc. 1832, p. 125.

Hab. Society and Navigator's Islands (on bushes). Cuming.

Dr. Pfeiffer regards this species as a variety of *P. rosea*. Both species are extremely variable in their colouring, but the species and their varieties are clearly distinct the one series from the other.



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PARTULA.

PLATE IV.

Species 13. (Mus. Cuming.)

PARTULA CARTERETENSIS. *Part. testā oblongo-ovata, compressē umbilicatā, anfractibus convexis, obliquē irregulariter striatis, lineis impressis spiritalibus minutē sculptis, aperturā ovatā, marginibus laminā tenuissimā callosā junctis; semipellucido-albā, fulco tinctā.*

THE PORT CARTERET PARTULA. Shell oblong-ovate, compressly umbilicated, whorls convex, obliquely irregularly striated, minutely sculptured with impressed spiral lines, aperture ovate, margins joined by a thin callous lamina; semitransparent white, fulvous-stained.

Helix Carteriensis, Quoy and Gaimard, Voy. de l'Astrol. vol. ii. p. 117. pl. 9. f. 10, 11.

Bulimus Carteriensis, Pfeiffer.

Hab. Port Carteret, New Ireland, Pacific Ocean; Quoy.

Allied to *P. hyalina*, but of a more compressed oblong form and of a substance rather more opaque.

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

PARTULA AURICULA. *Part. testā oblongo-conicā, solidiusculā, basi versus obliquē productā, subumbilicatā, anfractibus planiconvexis, lævibus, ultimo basi obsolete carinato, aperturā subquadrato-ovata, laminis duabus prominentibus erectis intrantibus minutā; albā, nunc fulva, nunc rufo-fusca cingulatā.*

THE EAR PARTULA. Shell oblong-conical, rather solid, obliquely produced towards the base, slightly umbilicated, whorls flatly convex, smooth, last whorl obsoletely keeled, aperture somewhat squarely ovate, with two prominent erect laminae entering into it; white, encircled sometimes with yellow, sometimes with red-brown.

FERUSSAC, Prodrome, p. 66.

Partula Dumartrouzi, Souleyet.

Auricula Orakhiensis, Chamisso.

Bulimus auricula, Pfeiffer.

Eadem sinistrorsa.

Auricula sinistrorsa, Chamisso.

Bulimus armatus, Michels.

Hab. Sandwich Islands.

The chief peculiarity of this little species consists in the presence of two sharp erect laminae, which enter the

aperture, one on the columella, and another on the body-whorl, which is not a modification of the callosity often present in that part of the shell.

Species 19. (Mus. Cuming.)

PARTULA GONOCHELLA. *Part. testā subabbreviato-ovata, ventricosā, compressē umbilicatā, anfractibus rotundatis, obliquē irregulariter striatis, lineis impressis spiritalibus minutē sculptis, aperturā ovatā, columellā latroque lato planireflexis, labro supero leviter contracto; semipellucido-fulcā, epidermide tenuissimā, interdum bifasciatā, indatā.*

THE ANGLE-LIPPED PARTULA. Shell somewhat abbreviatedly ovate, ventricose, compressly umbilicated, whorls rounded, obliquely irregularly striated, minutely sculptured with spiral impressed lines, aperture ovate, lip and columella broadly flatly reflected, lip a little contracted at the upper part; semitransparent fulvous, covered with a very slight epidermis, sometimes disposed in two bands.

PFEIFFER, MS. (Mus. Cuming.)

Hab. Navigators' Islands, Pacific Ocean.

A somewhat globose semitransparent shell, with an extremely delicate epidermis, which is partly bi-membranous and hydroplanous in bands.

Species 20. (Mus. Cuming.)

PARTULA COMPRESSA. *Part. testā acuminato-oblonga, crassiusculā, basi versus obliquē productā, subampliter compressē umbilicatā, anfractibus convexis, obliquē striatis, vix spiritaliter lineatis, anfractu ultimo basi rotundato-angulato, aperturā oblongā, labro declivi-reflexo, supero leviter contracto; intense castanea, labro et aperturae faucē livido-purpureis.*

THE COMPRESSED PARTULA. Shell acuminately oblong, rather thick, obliquely produced towards the base, rather largely compressly umbilicated, whorls convex, obliquely striated, very slightly spirally lineated, last whorl rotundately angled at the base, aperture oblong, lip reflected in a slanting direction, a little contracted at the upper part; dark chestnut-brown, lip and interior of the aperture livid purple.

PFEIFFER, MS. (Mus. Cuming.)

Hab. Society Islands.

May, 1850.

The compressed form of this shell is characteristic, and so also is the livid-purple colouring of the interior.

Species 21. (Mus. Cuming.)

PARTULA NAVIGATORIA. *Part. testâ oblongo-ovata, crassiusculâ, medio ventricosâ, angustè umbilicatâ, anfractibus subrotè obliquè striatis, cæcè spiritaliter lineatis, apertura auriculatâ, columellâ labroque late callosis-reflexis; fulvo-costeata, labro albido.*

THE NAVIGATOR PARTULA. Shell oblong-ovate, rather thick, slightly ventricose in the middle, narrowly umbilicated, whorls somewhat rudely striated, scarcely spirally lineated, aperture auriculate, the lip and columella being broadly callously reflected; fulvous chestnut, lip white.

PEIFFER, MS. (Mus. Cuming.)

Hab. Navigators' Islands.

The aperture of this species, which may be distinguished by its oblong-oval form, slightly ventricose in the middle only, is very similar to that of *P. Otakeitau*.

Species 22. (Mus. Cuming.)

PARTULA SOLIDULA. *Part. testâ acuminato-ovata, subgibbosâ, compressè umbilicatâ, solidulâ, anfractibus planicostatis, obliquè irregulariter striatis, lineis spiritalibus impressis minutè sculptis, apertura auriculatâ, columellâ labroque late callosis-reflexis; stramineâ, apice intertota rufescente, labro albo.*

THE SOLID PARTULA. Shell acuminately ovate, rather gibbous, compressly umbilicated, solid, whorls flatly convex, obliquely irregularly striated, minutely sculptured with spiral impressed lines, aperture auriculate, the lip and columella being broadly callously reflected; straw-colour, sometimes reddish at the apex.

Hab. Society Islands

A solid subtransparent shell, having the character and substance of *P. Otakeitau* with the form and colouring of *P. gibba*; excepting that the whorls are not crowned with the white sutural band which is constant in that species.

Species 23. (Mus. Cuming.)

PARTULA DECUSSATULA. *Part. testâ subobreviato-ovata, tenui, inflatâ, anfractibus quatuor, convexis, striis obliquis lineisque spiritalibus impressis cæcè decussatis,*

apertura subcontractâ, rotundato-ovata, labro parvis reflexo; pellucido-albâ.

THE DECUSSATED PARTULA. Shell somewhat abbreviately ovate, thin, inflated, whorls four in number, convex, faintly decussated with oblique striae and spiral impressed lines, aperture rather contracted, rotundately ovate, lip but little reflected; transparent white.

PEIFFER, MS. (Mus. Cuming.)

Hab. ——— ?

A thinner and more inflated shell than *P. hyalina*, and equally transparent.

Species 24. (Mus. Cuming.)

PARTULA SPADICEA. *Part. testâ acuminato-oblongâ, tenuicatâ, compressè umbilicatâ, anfractibus convexis, striis obliquis lineisque spiritalibus impressis cæcè decussatis, apertura ovata, parvisculâ, columellâ plano-appressâ, labro declivi-reflexo; pellucido-spaldæa, labro albido.*

THE FAWN PARTULA. Shell acuminately oblong, rather thin, compressly umbilicated, whorls convex, faintly decussated with oblique striae and spiral impressed lines, aperture ovate, rather small, columella flatly appressed, lip reflected in a slanting direction; transparent fawn-colour, lip whitish.

Hab. Marquesas Islands.

A delicate subtransparent shell, of a uniform transparent fawn-colour.

Species 25. (Mus. Cuming.)

PARTULA HEBE. *Part. testâ abbreviato-conicâ, globosâ, gibbosâ, solidulâ, umbilicatâ, anfractibus rotundatis, striis obliquis subrugosis lineisque spiritalibus impressis decussatis, apertura orbiculari, callositate erectâ supra columellam, columellâ labroque callosis-reflexis; semipellucido-albâ.*

HEBE'S PARTULA. Shell abbreviately conical, globose, gibbous, rather solid, umbilicated, whorls rounded, decussated with rather rough oblique striae and spiral impressed lines, aperture orbicular, with an erect callosity above the columella, lip and columella callously reflected; semitransparent white.

PEIFFER, Pro. Zool. Soc. 1846, p. 39.

Hab. Society Islands.

Distinguished by its short globose manner of convolution.

PARTULA.

	Spec.		Spec.
<i>amabilis</i> (<i>Bul.</i>), Lesson	II.	<i>Guanacensis</i> (<i>Bul.</i>), Pfr.	I. 4
<i>auriculata</i> , <i>Férussac</i>	IV.	<i>Hebe</i> (<i>Bul.</i>), Pfr.	IV. 25
<i>auriculata</i> , <i>Brod.</i>	II.	<i>hyalina</i> , <i>Brady</i>	III. 11
<i>brunalis</i> , <i>Reeve</i>	I.	<i>inflata</i> , <i>Reeve</i>	I. 3
<i>Bulimoides</i> , Lesson	I.	<i>isabellina</i> (<i>Bul.</i>), Pfr.	II. 10
<i>Carteretensis</i> (<i>Hebe</i>), Quoy	IV.	<i>lineata</i> , Lesson	II. 7
<i>compressa</i> (<i>Bul.</i>), Pfr.	IV.	<i>Navigatoria</i> (<i>Bul.</i>), Pfr.	IV. 21
<i>deussatula</i> (<i>Bul.</i>), Pfr.	IV.	<i>Otalchitana</i> (<i>Bul.</i>), Brug.	II. 11
<i>densilincata</i> , <i>Reeve</i>	II.	<i>radiolata</i> (<i>Bul.</i>), Pfr.	II. 6
<i>Denacetrapi</i> , <i>Staley</i>	IV.	<i>rosca</i> , <i>Brady</i>	I. 1
<i>faba</i> (<i>Lucas</i>), <i>Maityn</i>	I.	<i>rubescens</i> , <i>Reeve</i>	III. 12
<i>Gaunymedes</i> (<i>Bul.</i>), Pfr.	III.	<i>solidula</i> , <i>Reeve</i>	IV. 22
<i>gibba</i> (<i>Bul.</i>), Quoy	III.	<i>spadicea</i> , <i>Reeve</i>	IV. 24
<i>goniocheila</i> (<i>Bul.</i>), Pfr.	IV.	<i>varia</i> , <i>Brady</i>	III. 17

MONOGRAPH

OF THE GENUS

A C H A T I N E L L A .

Nature, that formed us of four elements,
Warns within our breasts for regiment,
Doth teach us all to have aspiring minds,
Our souls, whose faculties can comprehend
The wondrous architecture of the world,
Still climbing after knowledge mount,
Will us to wear ourselves and never rest
Until we reach the ripest fruit of all.—*Marlowe*



ACHATINELLA.

PLATE I.

Genus ACHATINELLA, Swainson.

Testa parviscula, conica, aut sinistrorsa aut dextrorso, hand umbilicata, anfractibus plerumque sex ad septem et lœvibus, columella brevi, latè appressâ, callosi et sepius contortâ, apertura parvisculâ, lubro simplici, interdum subincrassato, nunquam reflexo.

Shell rather small, conical, either sinistral or dextral, not umbilicated, whorls generally six to seven in number and smooth, columella short, broadly appressed, callous and mostly twisted, aperture rather small, lip simple, sometimes rather thickened, never reflected.

The gaily painted shells which form the subject of the present monograph have an especial claim to the honour of being ranked as a genus. They are nearly all of an uniform size and substance, they are characterized by the same plan of convolution, of from six to seven whorls, never umbilicated, by a similar vivid design of colouring, and by a peculiarly callous twisted plicate structure of the columella; the genus is, moreover, confined to one particular isolated locality, the Sandwich Islands. An exception must, however, be made in part to these remarks, in reference to three small horny species, *A. clara*, *pyramis*, and *cornuola*, placed in the genus by Dr. Pfeiffer, which are more nearly allied to the *Glandina* division of the *Achatina*, and might be appropriately removed hence.

The generic character of *Achatinella* was observed about the same time by Swainson in England, and by Férussac in France; the former in his descriptions and figures of new species in the 'Zoological Illustrations,' and the latter in a plate devoted to the few species then known to him, towards the close of his great work on the terrestrial mollusca. The *Achatinelle* were also noted in the United States about the same period by Professor Green, of Philadelphia, in a short memoir communicated to the Mæburian Lyceum of that city; and some important species were subsequently contributed by Professor Mighels and Dr. Gould, of that rising seat of scientific learning, Boston, Massachusetts.

None of the *Achatinelle* were known to Linnæus; nor even to Chemnitz, until the completion of his great work. In the last plate of the Conchylic Cabinet there is a figure of *A. persersa*, under the generic name of *Turbo*, and in a plate just preceding that, is a figure of *A. lugubris*, referred to the same marine genus. Lamarck had no more

acquaintance with the *Achatinelle* than Chemnitz. The same species which came under the observation of Chemnitz, *A. lugubris*, was observed by Lamarck, who, supposing it, like him, to belong to a mollusk of salt-water habits on account of its polished substance, referred it in error to the same marine family, independently of any knowledge that his *Moudeata scutivirga* and the *Turbo lugubris* of the Conchylic Cabinet were one and the same thing.

In the valuable monograph of this genus lately published by Dr. Pfeiffer, there are some points in which I find occasion to differ from him. *A. bicolor*, Jay, does not participate in the essential characters of the genus, and is referred to *Achatina*. *A. plicata* is a very abnormal form, having little if any indication of the callous twisted columella, whilst it is of a different substance from the rest of the species, and the only one with any external raised sculpture, but this I have allowed to remain; as also the three horny species already mentioned partaking of the *Glandina* type. *A. Bullioides*, Swainson, is distinct from *A. borata*, Férussac, and both differ essentially from *A. mustelina*, Mighels. *A. Stewarti* cannot be safely regarded as a variety of *A. vulpina*, nor is Swainson's *A. persersa* identical with Férussac's *A. decora*. The species are extremely variable throughout in colour, but it is important not to throw too many of them together on this account, whilst each, regarded strictly, appears to be characterized by regularity of form and general unity of design.

As already noted in regard to the geographical position of the genus, the *Achatinelle* are confined to the Sandwich Islands, where they represent the *Achatina* or *Bullia* of the continent.

Species I. (Mus. Cuming.)

ACHATINELLA NUBIFLOSA. *Test. ovato-oblonga, dextrorsa, anfractibus rotundatis, longitudinaliter plicato-striatis, ad suturam leviter crenulatis, columella nâplicitâ, plicâ compressâ, unguâli; caraco-strauivâ. flavaâ nigricant-olivaceâ irregulariter striatâ et reticulatâ, apice rubente-fusca, apertura foveâ albicantè.*

THE CLOUDED ACHATINELLA. Shell ovately oblong, dextral, whorls round, longitudinally plicately striated, slightly crenulated at the sutures, columella furnished with a single compressed marginal plat

flesh-tinged straw-colour, irregularly striated and reticulated with blackish-olive flames, interior of the aperture whitish.

MIGHELS, Pro. Boston Nat. Hist. Soc. 1845, p. 20.

Hab. Oahu, Sandwich Islands.

Elegantly streaked and reticulated with dark olive upon a warm cream-yellow ground, very prominently clouded in some specimens, as in *A. picta* and *venusta*.

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

ACHATINELLA PALLIDA. *Achat. testâ acuminato-ovata, solidiusculâ, anfractibus plano-convexis, obliquè subrotundè striatis, superne marginalis, sulco suturis subremoto, columellâ brevi, late callosâ; albâ, fusco vel castaneo-nigricante plus minus fasciatâ, columellâ labroque fuscescente-carneis.*

THE PALE ACHATINELLA. Shell acuminately ovate, rather solid, whorls flatly convex, obliquely somewhat rudely striated, margined round the upper part, the groove being rather distant from the sutures, columella short, broadly callous; white, more or less banded with brown or chestnut-black, lip and columella brownish-flesh.

NUTTALL, Jay's Catalogue of Shells, 1839, p. 58.

Eadem var. *Achatinella alba*, Nuttall.

Hab. Wahoo, Sandwich Islands; Nuttall.

Allied to *A. decora*, from which it is distinguished by its more acuminated and less ventricose form.

Species 3. (Fig. 3, 4, 5, Mus. Cuming.)

ACHATINELLA VIRGULATA. *Achat. testâ oblongo-ovata, ventricosâ, aut sinistrorsâ aut dextrorsâ, anfractibus medio plano-convexis, superne tumidiusculis, lineis spiritalibus et obliquis uniligne rariantè decussatis, columellâ callosâ; albidâ aut lacteâ, vittis castaneis, nunc angustis, nunc latiusculis, cingulatâ, fasciâ conspicuâ purpureo-fuscâ prapè ad apicem.*

THE STRIPED ACHATINELLA. Shell oblong-ovate, ventricose, either sinistral or dextral, whorls flatly convex in the middle, rather swollen round the upper part, minutely decussated throughout with spiral and oblique lines, columella callous; white or cream-colour, encircled with chestnut fillets, promiscuously broad or narrow, and a conspicuous dark purple-brown band near the apex.

Partula virgulata, Mighels, Pro. Boston Nat. Hist. Soc. 1845, p. 20.

Achatinella Rohri, Pfeiffer.

Bulimus Rohri, Pfeiffer.

Eadem var. *Bulimus insignis*, Mighels.

Hab. Sandwich Islands (on bushes); Rohr.

This fine species, which has been referred in turn to the genera *Partula* and *Bulimus*, belongs unquestionably to the genus under consideration, for which it is well characterized

by its peculiarity of form, structure of lip and columella, and design of painting.

For Species 4 and 5, see Pl. VI.

Species 6. (Mus. Cuming.)

ACHATINELLA LORATA. *Achat. testâ ovato-conicâ, dextrorsâ, solidiusculâ, anfractibus plano-convexis, levibus, ad suturas marginalis, columellâ brevi, late appressâ, callosâ, aperturâ parvisculâ; castaneo-brunneâ, suturis saturatoribus, fasciâ unicâ albâ cingulatâ.*

THE BELTED ACHATINELLA. Shell ovately conical, dextral, rather solid, whorls flatly convex, smooth, margined at the sutures, columella short, broadly appressed, callous, aperture rather small; chestnut-brown, encircled with a single white band.

Helix (Cochlegena) lorata, Férussac, Hist. Moll. pl. 155. f. 9-11.

Hab. Sandwich Islands.

A. unstelina and *Bulimoides*, which Dr. Pfeiffer quotes as synonyms of this species, are certainly distinct.

Species 7. (Mus. Cuming.)

ACHATINELLA TENIOLATA. *Achat. testâ ovata, dextrorsâ, subventricosâ, anfractibus convexis, levibus, columellâ brevi, late appressâ, aperturâ parvisculâ; albidâ, fusco carie fasciatâ.*

THE FILLETED ACHATINELLA. Shell ovate, dextral, rather ventricose, whorls convex, smooth, columella short, broadly appressed, aperture rather small; whitish, variously banded with brown.

PFEIFFER, Pro. Zool. Soc. 1846, p. 38.

Hab. Sandwich Islands.

About intermediate in its characters between the foregoing species and that which follows.

Species 8. (Mus. Cuming.)

ACHATINELLA BULIMOIDES. *Achat. testâ ovata, dextrorsâ, ventricosâ, solidiusculâ, anfractibus convexis, levibus, superne marginalis, columellâ brevi, latissime appressâ, callosâ; albidâ, anfractuâ parte inferiori castaneo-brunneâ.*

THE BULIMUS-LIKE ACHATINELLA. Shell ovate, dextral, ventricose, rather solid, whorls convex, smooth, margined round the upper part, columella short, very broadly appressed, callous; whitish, lower part of the whorls chestnut-brown.

SWAINSON, Zool. Illus. 2nd Series, vol. ii. pl. 108. f. 1.

Hab. Sandwich Islands.

Larger and more ventricose than either of the two preceding allied species, it differs more especially from the latter, which it most resembles in form, in having the whorls margined next the sutures.

Achatinella Pl. II.



10 a



9



7



11



12 a



12 b



13



14



15



16

ACHATINELLA.

PLATE II.

Species 9. (Mus. Cuming.)

ACHATINELLA VITTATA. *Achat. testâ dextrorsâ, globoso-conicâ, subcentricâ, anfractibus superâ sublatè marginatis, columellâ collusâ, rix dentatâ, labro subincrassato: albâ, lineis ciliisque pallidè foveascentibus circumulatâ, apice nigra.*

THE FILLETED ACHATINELLA. Shell dextral, globose conical, rather ventricose, whorls rather broadly margined round the upper part, columella callous, scarcely toothed, lip rather thickened; white, encircled with lines and filets of pale brown, black at the apex.

Hab. Sandwich Islands.

This approaches so closely to the sinistral species *A. decora* that it might readily be taken for a dextral variety. The whorls are more rounded and more distinctly margined beneath the sutures. The painting is very similar, but mostly darker next the sutures.

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

ACHATINELLA LUGUBRIS. *Achat. testâ subacutè conicâ, dextrorsâ, basi versus ventricosâ, anfractibus superâ marginatis, columellâ brevi, callosâ, dentatâ, labro subincrassato: purpureo-nigra, apice albâ, orl albâ, nigro aut fusco fasciatâ et lineatâ.*

THE MOURNING ACHATINELLA. Shell rather sharply conical, dextral, ventricose towards the base, whorls margined round the upper part, columella short, callous, toothed, lip somewhat thickened; purple-black, white at the apex, or white, lineated and banded with brown or black.

Turbo lugubris, Chemnitz, Conch. Cab. vol. xi. p. 278. pl. 209. f. 2059, 2060.

Helix (Cochlograea) lugubris, Ferrussac.

Monodonta scutinyra, Lamarek.

Bulimus scutinyger, Meuke.

Achatinella pica, Swainson.

Hab. Sandwich Islands.

Lamarek, mistaking this for a marine species, described it as a *Monodonta* from the shores of Tahiti, where the natives use the shell for making necklaces. It is mainly distinguished by its sharply conical form.

Species 11. (Mus. Cuming.)

ACHATINELLA SUFFUSA. *Achat. testâ oblongo-ovata, sinistrorsâ, anfractibus convexis, subradè obsolete striatis, columellâ contorto-plicatâ, apertura simpliciter: ovato-albicante, apice fusco-rubente, apertura fovea varnosa.*

THE BLUSHING ACHATINELLA. Shell oblong-ovate, sinistral, whorls convex, somewhat rudely obsolete striated, columella with a twisted plait, aperture simple; pinkish-white, brown-red at the apex, interior of the aperture flesh-pink.

Hab. — ?

A delicately coloured species, partaking very much of the character of *Bulimus*, the whorls being less smoothly polished than usual and not margined at the sutures. It resembles *A. rosea* in general aspect, but is a different kind of shell.

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

ACHATINELLA DECORA. *Achat. testâ globoso-conicâ, centricâ, sinistrorsâ, columellâ brevi, latâ, plano-calloâ, labro subincrassato; albâ, fasciis lineisque costaneis et nigris coriè pictâ, columellâ labroque purpurasecate lineis.*

THE HANDSOME ACHATINELLA. Shell globose conical, ventricose, sinistral, columella short, broad, flatly callous, lip somewhat thickened; white, variously banded with chestnut and black bands and lines. Lip and columella stained with light purple.

FERRUSSAC, Hist. Moll. pl. 155. f. 5 and 7.

Achatinella costata, Mighels.

Hab. Sandwich Islands.

Distinguished by its globose ventricose growth, striped painting, and light purple colouring of the lip and columella. Ferrussac's Fig. 6 represents a distinct species, *A. perversa*, Swainson.

Species 13. (Mus. Cuming.)

ACHATINELLA PRODUCTA. *Achat. testâ subelongato-conicâ, dextrorsâ, anfractibus convexis, ad suturas leviter marginatis, columellâ conspicièe callosa-dentatâ, apertura parviusculâ; olivaceo-viridè, apice, columellâ, et apertura fovea albâ.*

THE PROLONGED ACHATINELLA. Shell somewhat elongately conical, dextral, whorls convex, slightly mar-

gined at the sutures, columella conspicuously callos-toothed, apex rather small: olive-green, apex, columella, and interior of the aperture white.

Hab. Sandwich Islands.

Chiefly distinguished by its elongately conical form, and light olive-green colouring.

Species 14. (Mus. Cuning.)

ACHATINELLA PERVERSA. *Achat. testâ globoso-conicâ, sinistrorsâ, apicem versus subacuminatâ, columellâ rotulâ, plano-dentatâ, labro subincrassato: olivaceo-fuscâ, lineis ricidi-nigricaulibus spirantibus et obliquis subirregulariter decussatâ, supra et infra suturas opaco-albâ.*

THE REVERSED ACHATINELLA. Shell globosely conical, sinistral, rather acuminate towards the apex, columella callous, flatly toothed, lip somewhat thickened; olive-brown, rather irregularly decussated with spiral and oblique greenish-black lines, opaque-white above and below the sutures.

SWAINSON, Zool. Illus. Second Series, pl. 99. f. 2.

Verbo lugubris sinistrorsus, Chemnitz.
A. decora, var. Pfeiffer.

Hab. Sandwich Islands.

The opaque white sutures are very characteristic in this species, and it has moreover a peculiar cross-lined style of painting. De Cérussac figured it with *A. decora*, and Dr. Pfeiffer quotes it as a variety of that species.

Species 15. (Mus. Cuning.)

ACHATINELLA SIMILANS. *Achat. testâ globoso-conicâ, sinistrorsâ, apicem versus acutâ, anfractibus superâe conspicuè marginatis, columellâ brevi, plano-collatâ: olivâ, lineis præpurpureis fusciscentibus cingulatâ, fuscâ*

intusè fuscâ circa columellam, columellâ labroque pallidè purpureiscentibus.

THE ALLIED ACHATINELLA. Shell globosely conical, sinistral, sharp towards the apex, whorls conspicuously margined at the sutures, columella short, flatly callous; white, encircled with a very few light brown lines, with an intense brown band around the columella, lip and columella tinged with light purple.

Hab. — ?

The colouring of this species is so like that of *A. decora*, that it might be taken for a variety; yet it differs in form, the spire being more acuminate, and the last whorl not so broad and ventricose.

Species 16. (Mus. Cuning.)

ACHATINELLA SPIRIZONA. *Achat. testâ elongato-conicâ, dextrorsâ, subumbilicatâ, anfractibus septem ad octo, convexis, obliquè plicato-striatis, striis ad suturas subrotundis, columellâ contorto-plicatâ, aperturâ porciniculâ; intusè brunneâ, zonâ albâ infra suturas, epidermide tenui fusciscente indatâ.*

THE SPIRAL-ZONED ACHATINELLA. Shell elongately conical, dextral, slightly umbilicated, whorls seven to eight in number, convex, obliquely plicately striated, striae somewhat rude at the sutures, columella with a twisted plait, aperture rather small: intense brown, with a white zone beneath the sutures, covered with a thin brownish epidermis.

FERUSSAC, Hist. Moll. pl. 155. f. 14, 15.

Achatinella acuta, Swainson.

Hab. Oahu, Sandwich Islands.

This and *A. territella* represent an abnormal form of the genus, differing from the type in having more whorls and in not possessing a similarly polished painted exterior



18



17



19



20



21 a



21 b



22



22 a



22 b



23

ACHATINELLA.

PLATE III.

Species 17. (Mus. Cuming.)

ACHATINELLA BELLA. *Achat. testâ conicâ, dextrorsâ, anfractibus subventricosâ, columellâ costato-plicatâ; olivaceo-luteâ, suturis nigro-fuscis, dente albifasciatâ, anfractu ultimo inferâ fuscâ et albo fasciatâ.*

THE PRETTY ACHATINELLA. Shell conical, dextral, whorls rather ventricose, columella with a twisted plait: olive-yellow, sutures black-brown, then white-banded, last whorl brown and white-banded.

Hab. Motokai, Sandwich Islands.

Mr. Cuming possesses several specimens of this pretty species of immature growth. The dark sutural band is sometimes absent in the last whorl, but the white band appears constant.

Species 18. (Mus. Cuming.)

ACHATINELLA COLORATA. *Achat. testâ oblongo-conicâ, dextrorsâ, anfractibus piano-concavis, columellâ costato-plicatâ, aperturâ parvâ: luteâ, cinctâ latifasciatâ, suturis nigro-fuscis, columellâ pallide roseâ.*

THE COLOURED ACHATINELLA. Shell oblong-conical, dextral, whorls flatly convex, columella with a twisted plait, aperture small; yellow, encircled with a very broad green band, sutures black-brown, columella light pink.

Hab. Sandwich Islands.

Characterized, like *A. puberriora*, by a dark sutural line within the suture, but of a less elongated form. The ground-colour is a bright yellow, and each whorl is painted with a broad bright green band.

Species 19. (Mus. Cuming.)

ACHATINELLA ABBREVIATA. *Achat. testâ ovatâ, subventricosâ, dextrorsâ, anfractibus concavis, superâ angustatis, spirâ levissimâ, apice obtusâ, columellâ callusâ, costatâ: olivaceo-luteâ, lineâ nigro-fuscâ ad suturas, anfractuâ parte inferâ cinctâ nigro-luteo-cinctâ.*

THE SHORTENED ACHATINELLA. Shell ovate, somewhat ventricose, dextral, whorls convex, margined round the upper part, spire rather short, obtuse at the apex, columella callous, twisted: olive-yellow, with a black-brown line at the sutures, lower part of the last whorl very dark green, apex black.

Hab. — ?

The form of this species is again distinct from either of the preceding.

Species 20. (Mus. Cuming.)

ACHATINELLA OLIVACEA. *Achat. testâ oblongo-conicâ, sinistrorsâ, anfractibus concavis, superâ tenuiarguantis, columellâ costato-plicatâ; intense viridi-olivaceâ, lineâ fuscocinctâ subobscure cingulatâ, columellâ et apertura fuscâ albâ.*

THE OLIVE ACHATINELLA. Shell oblong-conical, sinistral, whorls convex, thinly margined round the upper part, columella with a twisted plait: dark green-olive, encircled with rather obscure brownish lines, columella and interior of the aperture white.

Hab. — ?

The rich dark olive colouring of this species leaves off suddenly in an abrupt line at the aperture, and the remainder of the body-whorl is of an orange-fawn tint, like a shell denuded to that extent of epidermis.

Species 21. (Mus. Cuming.)

ACHATINELLA MUSTELINA. *Achat. testâ aut sinistrorsâ aut dextrorsâ, acuminato-conicâ, anfractibus subrotundatis, superâ angustatis, columellâ callusâ, subappressâ, aperturâ subauriculatâ, labro incrassatâ: fuscocinctâ, suturis et apice albâ.*

THE TAWNY ACHATINELLA. Shell acuminate conical, whorls somewhat rounded, margined round the upper part, columella callous, rather appressed, aperture slightly auriculate-lip thickened; brownish ash, sutures and apex white.

MIGHELS, Proc. Boston Nat. Hist. Soc. 1845, p. 21.

Hab. Waimâ, Sandwich Islands.

Distinguished by its acuminate form and subauriculate aperture, whilst the colouring is peculiar.

I cannot agree with Dr. Pfeiffer, in regarding this and *A. bulianoides* as varieties of *A. lucida*. On referring to De Férussac's and Swainson's figures of these species, which I have identified with specimens in Mr. Cuming's collection, it will be found that all three are distinct from each other, in form, sub-tanose and arrangement of colours.

April, 1850.

Species 22. (Mus. Cuming.)

ACHATINELLA BILINEATA. *Achat. testâ oblongo-conicâ, dextrorsâ, basi versus subcentricosâ, anfractibus rotundatis, columellâ dentato-plicatâ; vivide luteâ, lineis duabus nigris approximatis medio conspicuè cingulatâ.*

THE TWO-LINED ACHATINELLA. Shell oblong-conical, dextral, rather ventricose towards the base, whorls rounded, columella dentately plicate: bright yellow, conspicuously encircled round the middle with two close black lines.

Hab. ———?

The form of this shell is peculiar, and there is something equally characteristic in the marking.

Species 23. (Mus. Cuming.)

ACHATINELLA PULCHERRIMA. *Achat. testâ subelongato-conicâ, dextrorsâ, anfractibus convexis, superiù tenuimarginatis, columellâ brevi, callosâ; luteâ, fasciis latiusculis nigris plerumque cingulatâ, suturis scæper nigris.*

THE VERY BEAUTIFUL ACHATINELLA. Shell somewhat elongately conical, dextral, whorls convex, thinly margined round the upper part, columella short, callous; yellow, mostly encircled with rather broad black bands, sutures always black.

SWAINSON, Brand's Journal, 1828, p. 85. Zool. Illus. 2nd series, pl. 123. f. 2.

Achatinella Byronii, Gray.

Hab. Sandwich Islands.

Although the black sutural line is striking and constant, the character is by no means confined to this species. Two or three have been confounded together in collections under this apprehension.

Species 24. (Mus. Cuming.)

ACHATINELLA CASTANEA. *Achat. testâ oblongo-conicâ, sinistrorsâ, apice subobtusâ, anfractibus convexis, superiù tenuimarginatis, columellâ dentato-plicatâ; ustulato-luteâ, anfractibus ultimi dimidio inferiori vivide castaneo, interdum undique castaneâ, columellâ et apertura fuce albâ.*

THE CHESTNUT ACHATINELLA. Shell oblong-conical, sinistral, rather obtuse at the apex, whorls convex, thinly margined round the upper part, columella dentately plicate; burnt yellow, lower half of the last whorl bright chestnut, sometimes chestnut throughout, columella and interior of the aperture white.

Hab. Sandwich Islands.

The colouring of this species always partakes more or less of rich bright chestnut.



ACHATINELLA.

PLATE IV.

Species 25. (Mus. Cuming.)

ACHATINELLA VIRIDANS. *Achat. testâ ovato-conicâ, dextrorsâ, anfractibus convexis, columellâ brevi, dentato-plicatâ; cinereo-iridis aut virescente, lineis obliquis suturatoribus prouersis notatâ, fuscis albi latâ infra suturas cingulatâ, columellâ albâ.*

THE GREENISH ACHATINELLA. Shell ovately conical, dextral, whorls convex, columella short, dentately plicate; ash-green or pale green, promiscuously marked with oblique darker lines, encircled with a broad white band beneath the sutures, columella white.

MIGHELS, Pro. Boston Nat. Hist. Soc. 1845, p. 20.

Hab. Sandwich Islands.

A light green or ash-green shell, without bands or marking, encircled by a broad white band beneath the sutures.

Species 26. (Mus. Cuming.)

ACHATINELLA STEWARTI. *Achat. testâ sublongato-conicâ, sinistrorsâ, anfractibus plano-convexis, columellâ contorto-plicatâ, aperturâ porreusentâ, labro simplici; olivaceo-luteâ, fasciâ suturali nigri.*

STEWART'S ACHATINELLA. Shell somewhat elongately conical, sinistral, whorls flatly convex, columella with a twisted plait, aperture rather small, lip simple; olive-yellow, with a black sutural band.

GREEN, Contributions to the Macurian Lyceum of Philadelphia, 1827, Part 2, p. 47, pl. 4, L. 1 to 4.

Hab. Oahu, Sandwich Islands.

This species, which I consider to be distinct from *A. vulpina*, is described by Professor Green as inhabiting the deep valleys of Oahu, at all seasons, adhering to the under surface of the large leaves of a plant called Ti, from the roots of which the natives brew an intoxicating liquor. The favourite mode of preparing them for food, is to tie up large numbers in the Ti leaves and bake them with heated stones.

Species 27. (Mus. Cuming.)

ACHATINELLA FRASINUS. *Achat. testâ oblongo-conicâ, sinistrorsâ, anfractibus convexis, oblique subinde impresso-striatis, columellâ brevi, contorto-plicatâ; in-*

tense viridi, lineis nigricantibus obscure cingulatâ, apice albâ, columellâ albâ.

THE DARK-GREEN ACHATINELLA. Shell oblong-conical, sinistral, whorls convex, obliquely somewhat rudely impressly striated, columella short, twisted-plaited; very dark green, encircled with obscure dark lines, white at the apex, columella white.

Hab. ———?

There is a slight peculiarity of form, and a very distinct arrangement of colours in this species.

Species 28. (Mus. Cuming.)

ACHATINELLA ROSEA. *Achat. testâ ovatâ, solidiusculâ, ventricosâ, sinistrorsâ, anfractibus convexis, locibus, superâe marginatis, columellâ callosâ, contorto-plicatâ, aperturâ labro subincrassatâ; albidd, basiæ cernis et in sulco suturali curvato-rosaceo tinctâ, columellâ luteo-purpureo-roseâ.*

THE ROSE ACHATINELLA. Shell ovate, rather solid, ventricose, sinistral, whorls convex, smooth, margined round the upper part, columella callous, twisted-plaited, lip of the aperture rather thickened; whitish, tinged with flesh-pink towards the base and in the sutural groove, lip and columella purple-rose.

SWAINSON, Brand's Journal, 1828, p. 55. Zool. Illus. 2nd Series, pl. 123. f. 1.

Hab. Sandwich Islands; Rev. A. Bloxam.

At the time Mr. Swainson described this species, he entertained a doubt of its being a variety of *B. Bulimoides*. It will be found to differ in form, and the colouring is materially different.

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

ACHATINELLA VULPINA. *Achat. testâ acuminato-oblongâ, sinistrorsâ, interdum subventricosâ, anfractibus subplano-convexis, columellâ brevi, callosâ, dentato-plicatâ, aperturâ labro parva incrassatâ; olivaceâ aut albicante, strigis obliquis rufo-fuscescentibus, lineis fuscis etisque spirulibus agris aut viridibus aut fuscis variâ pictâ, columellâ purpureo-roseâ.*

THE SUBTLE ACHATINELLA. Shell acuminately oblong, sinistral, sometimes rather ventricose, whorls somewhat flatly convex, columella short, callous, dentately

plicate, lip of the aperture but little thickened; olive or whitish, with oblique light red-brown streaks, variously painted with spiral black or green or brown bands and lines, columella purple-rose.

FERUSSAC, Hist. Moll. pl. 155. f. 1.

Hab. Sandwich Islands.

The colouring of this species is extremely variable: there is, however, but one prevailing idea in its manner of distribution. The columella is of a livid purple-rose in all the varieties. I consider *A. Stewarti*, Green, to be a distinct species, notwithstanding that it resembles this in the colour of the columella: and *A. livida*, Swainson, whose figure is only a magnified representation of an immature shell, cannot be referred to it without considerable doubt.

Species 30. (Mus. Cuming.)

ACHATINELLA ADUSTA. *Achat. testâ acuminato-oblongâ, subrotatâ, sinistrorsâ, anfractibus rotundatis, columellâ brevi, callosâ, dentatâ; intus castaneâ, basi nigricante, fasciâ spirali nigrâ infra saturas, columellâ rosaceâ.*

THE SCORCHED ACHATINELLA. Shell acuminately oblong, somewhat turreted, sinistral, whorls rounded, columella short, callous, toothed: dark chestnut, darker towards the base, with a spiral black band beneath the sutures, columella pinkish.

Hab. —?—?

The general colouring of this species, which is allied to *A. vulpina* and *Stewarti*, is similar to *A. castanea*, in which the black sutural band is wanting, and in which the columella is particularly white.

Species 31. (Mus. Cuming.)

ACHATINELLA VENTULUS. *Achat. testâ oblongo-cylindraceâ, dextrorsâ, anfractibus plano-concavis, subtilissimè impresso-striatis, ad saturas leviter crenulatis, columellâ brevi, arcuatâ, tenuè contorto-plicatâ, aperturâ parvâ, intus brunneâ, fasciâ pallidâ infra saturas et circa columellam, epidermide tenui indatâ, apertura fauce cernulescente.*

THE SLIGHTLY-INFLATED ACHATINELLA. Shell oblong-cylindrical, dextral, whorls flatly convex, very finely impressly striated, slightly crenulated at the sutures, columella short, arched, thinly twisted-plaited, aperture small: very dark brown, with a pale band beneath the sutures and around the columella, covered with a slight epidermis, interior of the aperture bluish.

Helix (*Coelogyena*) *ventulus*, Férussac, Prodrome, no. 437.

Achatinella microstoma, Gould (fide Pfeiffer).

Hab. Oahu, Sandwich Islands; Hinds.

A dark cylindrical sub-horny shell with a slight fugacious epidermis.



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ACHATINELLA.

PLATE V.

Species 32. (Mus. Cuming.)

ACHATINELLA VEXATA. *Achat. testâ elongato-conicâ, sinistrorsâ, spirâ acuminatâ, apice obtusâ, anfractibus rotundatis, striatulis, columellâ callâ costatâ et plicatâ, aperturâ parvâ; intus, maculis flavisquisque nigris conspicuè pictâ, apice purpureo-fusco.*

THE HANDSOME ACHATINELLA. Shell elongately conical, sinistral, spire acuminated, obtuse at the apex, whorls rounded, finely striated, columella much twisted and plaited, aperture small; yellow, conspicuously painted with black spots and flames, apex purple-brown.

MIGHELS, Pro. Boston Nat. Hist. Soc. 1845, p. 21.

Hab. Oahu, Sandwich Islands.

Distinguished from *A. picta*, to which it is the nearest allied species, by its more elongated form and bright yellow ground-colouring.

Species 33. (Mus. Cuming.)

ACHATINELLA CITRINA. *Achat. testâ elongato-conicâ, sinistrorsâ, spirâ subacuminatâ, anfractibus rotundatis, striatulis, ultimo obsolete curvulato, columellâ callâ costatâ, biphicatâ, aperturâ parviscâ; viridè citrinâ.*

THE CITRON ACHATINELLA. Shell elongately conical, sinistral, spire somewhat acuminated, whorls rounded, finely striated, the last finely obsoletely keeled, columella much twisted, two-plaited, aperture rather small; bright citron yellow.

MIGHELS, MS.

Hab. Sandwich Islands.

This has all the appearance of an unspotted variety of the preceding species, but it will be found to differ in form upon a careful comparison. It does not agree with Ferrussac's figure, Hist. Moll. pl. 155, f. 12. *H. liv* (*Cochlogena*) *introla*, representing an immature shell which I have not been able correctly to identify.

Species 34. (Fig. 34 and 41. Mus. Cuming.)

ACHATINELLA TURRIFELLA. *Achat. testâ elongato-conicâ, subpyramidalî, anfractibus septem, planicostatis, obliquè rotè striatis, ad subrus subconvolutis, aperturâ parvâ, columellâ biphicatâ, appressâ; intusè castaneâ, fasciâ albidâ infra saturatâ.*

THE LITTLE TURRET ACHATINELLA. Shell elongately conical, somewhat pyramidal, whorls seven in number, flatly convex, obliquely rudely striated, slightly convoluted at the sutures, aperture small, columella two-plaited, appressed; dark chestnut, with a whitish band beneath the sutures.

FERRUSSAC, Hist. Moll. pl. 155, f. 13.

Achatinella Oahuensis, Green.

Achatinella inornata, Mighels.

Hab. Oahu, Sandwich Islands.

This species represents the most elongately turreted form of the genus.

Species 35. (Mus. Cuming.)

ACHATINELLA RADIATA. *Achat. testâ ovatâ, solidâ, dextrorsâ, anfractibus convexis, obliquè striatis, superâ subobscure marginatis, columellâ brevi, plicato-costatâ, latè appressâ, labro subincrassatâ; intus-albidâ, strigis livisquisque intusè viridibus et nigris deussissimè obliquè pictâ, columellâ labrique curvato-convexis.*

THE RAYED ACHATINELLA. Shell ovate, rather solid, dextral, whorls convex, obliquely striated, somewhat obscurely margined round the upper part, columella short, plicately twisted, broadly appressed, lip rather thickened; yellowish-white, obliquely very thickly painted with dark green and black streaks and lines, lip and columella flesh-pink.

PEREYER, Pro. Zool. Soc. 1845, p. 89.

Hab. Oahu, Sandwich Islands.

A very characteristic richly painted species, quite distinct from *A. viridulus*.

Species 36. (Mus. Cuming.)

ACHATINELLA PICTA. *Achat. testâ acuminato-ovatâ, sinistrorsâ, anfractibus rotundatis, tumidiusculis, columellâ arcuatâ, callè costato-plicatâ; intusè castaneâ, maculis flavisquisque nigris variisqve pictâ, columellâ et aperturâ marginè intus livido-convexis.*

THE PAINTED ACHATINELLA. Shell acuminately ovate, sinistral, whorls rounded, rather swollen, columella arched, very much twisted-plaited; yellowish, painted throughout with black spots and flames, columella

and edge of the aperture stained within with livid flesh-colour.

MIGHELS, Pro. Boston Nat. Hist. Soc. 1845, p. 90.

Hab. Oahu, Sandwich Islands.

The elegant zigzag painting of this species is very similar to that of *A. ventulus*.

Species 37. (Mus. Cuming.)

ACHATINELLA TRISTIS. *Achat. testâ globoso-ovata, sub-cylindraceâ, solidiusculâ, dextrorsâ, spirâ brevi, apice acutâ, anfractibus convexis, corrugato-striatis, columellâ arcuatâ, contorto-plicatâ; flavicante-lactea aut fuscescente, epidermide nigri fugaci indatâ, apice fusco-rubente.*

THE SAD ACHATINELLA. Shell globose-ovate, somewhat cylindrical, rather solid, dextral, spire short, acute at the apex, whorls convex, corrugately striated, columella arched, with a twisted plait; yellowish cream-colour or brownish, covered with a black fugacious epidermis, apex brown-red.

Habit. (Cochinean) *tristis*, Férussac, Prodrome, no. 435.

Achatinella fuliginosa, Gould.

Hab. Sandwich Islands.

This and the following species belong to the same peculiar type as *A. ventulus* of the preceding plate.

Species 38. (Mus. Cuming.)

ACHATINELLA STRAMINEA. *Achat. testâ acuminato-oblongâ, sinistrorsâ, anfractibus convexis, obliquè striatis, columellâ fortiter contorto-plicatâ; stramineâ, immutata.*

THE STRAW-COLOURED ACHATINELLA. Shell acuminately oblong, sinistral, whorls convex, obliquely striated, columella strongly twisted-plaited; straw-coloured, unspotted.

Hab. Sandwich Islands.

This species is of a peculiar light straw-colour, and differs essentially in form from any of the preceding.

Species 39. (Mus. Cuming.)

ACHATINELLA NUCLEOLA. *Achat. testâ abbreviato-ovata, subglobosâ, dextrorsâ, spirâ brevisculâ, anfractibus convexis, subtiliter striatis, ad suturas creantatis, columellâ arcuatâ, contorto-plicatâ; rubente-castanea.*

THE KERNEL ACHATINELLA. Shell shortly ovate, somewhat globose, dextral, spire rather short, whorls convex, finely striated, crenulated at the sutures, columella arched, with a twisted plait; reddish-chestnut.

GOULD, Pro. Boston Nat. Hist. Soc. 1845, p. 28.

Achatinella brevis, Pfeiffer.

Hab. Sandwich Islands.

Very closely allied to *A. ventulus*, but sufficiently distinguished by its more globose form, lighter red-brown colour, and more prominent abruptly truncated columella.

Species 40. (Mus. Cuming.)

ACHATINELLA MIGHELSIANA. *Achat. testâ acuminato-conicâ, dextrorsâ, anfractibus rotundatis, superne obsolete marginatis, columellâ valdè contorto-plicatâ; opaco-albâ, lineis cinereis obscure notatâ, anfractu ultimo lineâ angustâ nigro-fusca cingulato, columellâ et apertura marginaribus nigro-fusco tactis.*

MIGHEL'S ACHATINELLA. Shell acuminately conical, dextral, whorls rounded, obsolete margined round the upper part, columella strongly twisted-plaited; opaque-white, faintly marked with ash lines, last whorl encircled with a narrow black-brown line, columella and edge of the aperture stained within with black-brown.

PFEIFFER, Pro. Zool. Soc. 1847, p. 231.

Hab. Molokai, Sandwich Islands.

Each example of this species in Mr. Cuming's collection is encircled round the lower part of the whorls by a dark line, which is concealed in all but the last, by the convolution of one whorl upon the other.

Fig. 41. (Mus. Cuming.)

ACHATINELLA TURRITELLA. Already described in this plate. For Sp. 41 see Pl. VI.



ACHATINELLA.

PLATE VI.

Species 1. (Mus. Cuming.)

ACHATINELLA CORNELIA. *Achat. testâ oblongo-conicâ, anfractibus septem ad octo, convexis, subtiliter concentricè impresso-striatis, columellâ profunde arcuatâ, margine productâ et contortâ; subpellucido-cornuâ.*

THE HORNY ACHATINELLA. Shell oblong-conical, whorls seven to eight in number, convex, finely concentrically impressly striated, columella deeply arched, produced and twisted at the edge; subtransparent horny.

PFEIFFER, Pro. Zool. Soc. 1845, p. 90.

Hab. Sandwich Islands.

Notwithstanding the marginal plait-structure of the columella, this and the two following species are very distinct from the true *Achatinella*. They belong rather to the small horny group of *Achatina*, among which I have already described some allied forms.

Species 5. (Mus. Cuming.)

ACHATINELLA CLARA. *Achat. testâ pyramidalis-conicâ, anfractibus octo, convexis, subangustis, concentricè impresso-striatis, columellâ breviusculâ, contortâ, apertura parvâ; pellucido-cornuâ, anfractuâ margine juxta suturas rugulatoâ.*

THE CLEAR ACHATINELLA. Shell pyramidally conical, whorls eight in number, convex, rather narrow, concentrically impressly striated, columella rather short, twisted, aperture small; transparent horny, edge of whorls next the sutures marked with a red line.

PFEIFFER, Pro. Zool. Soc. 1845, p. 90.

Achatinella striatula, Gould.

Hab. Sandwich Islands.

Distinguished from the preceding species by its narrower turreted form, and less prominent columellar plait.

Species 41. (Mus. Cuming.)

ACHATINELLA PYRAMIS. *Achat. testâ acuminato-conicâ, anfractibus octo, planiconvexis, superâe tenuimarginatis, obliquè minute striatis, columellâ brevi, arcuatâ, apertura parviusculâ; cirescente-cornuâ.*

THE PYRAMID ACHATINELLA. Shell acuminately conical, whorls eight in number, flatly convex, finely margined round the upper part, obliquely minutely

striated, columella short, arched, aperture rather small; greenish horn.

PFEIFFER, Pro. Zool. Soc. 1845, p. 90.

Hab. —?

Distinguished by its more acuminate conical form.

Species 42. (Fig. a, b, Mus. Cuming.)

ACHATINELLA RUBENS. *Achat. testâ acuminato-oblongâ, dextrorsâ, solidiusculâ, anfractibus septem, planiconvexis, levigatis, celè obliquè subirregulariter striatis, columellâ plicato-contortâ, apertura parviusculâ; ru-beate-lactea, apice fuscâ, epidermide fuscâ fuscâ induta, aperturae fauce plerumque rufa.*

THE RUDDY ACHATINELLA. Shell acuminately oblong, dextral, rather solid, whorls seven in number, flatly convex, smooth, or obliquely somewhat irregularly striated, columella plicately twisted, aperture rather small; ruddy cream-colour, brown at the apex, covered with a brown fugacious epidermis, interior of the aperture mostly tinged with rose.

GOULD, Pro. Boston Soc. Nat. Hist. 1845, p. 27.

Hab. Sandwich Islands.

The shells here represented vary materially in form, but are doubtless different states of the same species.

Species 43. (Mus. Cuming.)

ACHATINELLA PERDIX. *Achat. testâ ovata, ventricosâ, leviusculâ, dextrorsâ, spirâ exertâ, apice subobtusâ, anfractibus sex, convexis, superâe marginalis, lineis impressis flexuosis obliquè sculptâ, columellâ plicato-contortâ, subcaulosa; albida, olivaceo-fusca undique pictâ et variegatâ, suturis et columellâ albis.*

THE PARTRIDGE ACHATINELLA. Shell ovate, ventricose, rather thin, dextral, spire exerted, somewhat obtuse at the apex, whorls six in number, convex, margined round the upper part, obliquely sculptured with flexuous impressed lines, columella plicately twisted, rather callous; whitish, painted and variegated throughout with olive-brown, sutures and columella white.

Hab. —?

This is a remarkable species, of a different type from

any other of the genus, compounded of *Balium* and *Achatinella*. With the generic callous twisted-plait columella of the latter genus, the shell is characterized by the form, substance, and design of colouring of the former.

Species 44. (Mus. Cuming.)

ACHATINELLA PLICATA. *Achat. testâ acuminato-turrilatâ, gracili, tenuiculâ, sinistrorsâ, anfractibus ser. convexis, carinis spiritalibus uniuersis aentis nodique sculptis, suturis subexcavatis, columellâ collosâ, plicâ obsolete, aperturâ parvâ, labro simplici: fuscisecate-albâ, ad apicem obscure foliurâtâ.*

THE Plicate ACHATINELLA. Shell acuminately turreted, slender, rather thin, sinistral, whorls six in number, convex, sculptured throughout with numerous sharp spiral keels, sutures rather excavated, columella callous, plait obsolete, aperture small, lip simple: brownish-white, obscurely waved at the apex.

MICHELS. MS. Pfeiffer, Mon. Helic. vii. vol. ii. p. 235.

Hab. Moko Kai, Sandwich Islands.

This also is of a different type from any of the pre-

ceding species, and one of very abnormal character. It is the only form that presents any external raised sculpture, and the plicate columella by which the genus is chiefly characterized is almost obsolete.

Species 45. (Mus. Cuming.)

ACHATINELLA BAUCA. *Achat. testâ abbreviato-conicâ, dextrorsâ, subcentricâ, anfractibus convexis, superiè marginatis, columellâ plicato-confortâ; intrusè nigricante-castaneâ, suturis fuscis, columellâ pallidè rosceâ.*

THE BERRY ACHATINELLA. Shell abbreviately conical, dextral, rather ventricose, whorls convex, margined round the upper part, columella plicately twisted: very dark chestnut, sutures yellowish, columella pinkish.

Hab. — ?

The shell here described does not appear to have reached maturity, but, allowing for this, it is still characterized by a much wider and shorter plan of convolution than any of the species which have preceded it.

ACHATINELLA.

	Plate.	Species.		Plate.	Species.
abbreviata, <i>Reeve</i>	III.	19	perversa, <i>Swainson</i>	II.	14
acuta, <i>Swainson</i>	II.	16	picca, <i>Swainson</i>	II.	10
adusta, <i>Reeve</i>	IV.	30	pieta, <i>Mighels</i>	V.	36
baeva, <i>Reeve</i>	VI.	45	plicata, <i>Mighels</i>	VI.	44
bella, <i>Reeve</i>	III.	17	prasinus, <i>Reeve</i>	IV.	27
bilineata, <i>Reeve</i>	III.	22	producta, <i>Reeve</i>	II.	13
brevis, <i>Pfeiffer</i>	V.	39	pulcherrima, <i>Swainson</i>	III.	23
<i>Byronii</i> , <i>Gray</i>	III.	23	pyramis, <i>Pfeiffer</i>	VI.	41
Bulmoides, <i>Swainson</i>	I.	8	radiata, <i>Pfeiffer</i>	V.	35
castanea, <i>Reeve</i>	III.	24	rhodri, <i>Pfeiffer</i>	I.	3
citrina, <i>Mighels</i>	V.	33	rosca, <i>Swainson</i>	IV.	28
clara, <i>Pfeiffer</i>	VI.	5	rubeus, <i>Gould</i>	VI.	42
colorata, <i>Reeve</i>	III.	18	simulans, <i>Reeve</i>	II.	15
coniceola, <i>Pfeiffer</i>	VI.	4	spirizona (<i>Helix</i>), <i>Férussac</i>	II.	16
decora (<i>Helix</i>), <i>Férussac</i>	II.	12	Stewarti, <i>Green</i>	IV.	26
fuliginosa, <i>Gould</i>	V.	37	straminea, <i>Reeve</i>	V.	38
<i>Greenii</i> , <i>Gray</i>	IV.	28	striolata, <i>Gould</i>	VI.	5
inermis, <i>Mighels</i>	V.	34	suffusa, <i>Reeve</i>	II.	11
lorata (<i>Helix</i>), <i>Férussac</i>	I.	6	teniolata, <i>Pfeiffer</i>	I.	7
lugubris (<i>Turbo</i>), <i>Chemnitz</i>	II.	10	tristis (<i>Helix</i>), <i>Férussac</i>	V.	37
microstoma, <i>Gould</i>	IV.	31	turritella (<i>Helix</i>), <i>Férussac</i>	V.	34
Mighelsiana, <i>Pfeiffer</i>	V.	40	ventulus (<i>Helix</i>), <i>Férussac</i>	IV.	31
mustelina, <i>Mighels</i>	III.	21	venusta, <i>Mighels</i>	V.	32
nubilosa, <i>Mighels</i>	I.	1	vestita, <i>Mighels</i>	II.	12
nucleola, <i>Gould</i>	V.	39	virgulata (<i>Partula</i>), <i>Mighels</i>	I.	3
<i>Oahuensis</i> , <i>Green</i>	V.	34	viridans, <i>Mighels</i>	IV.	25
olivacea, <i>Reeve</i>	III.	20	vittata, <i>Reeve</i>	II.	9
pallida, <i>Nettall</i>	I.	2	vulpina (<i>Helix</i>), <i>Férussac</i>	IV.	29
perdix, <i>Reeve</i>	VI.	43			

MONOGRAPH

OF THE GENUS

A R T E M I S.

Maiden Symp! oh, hear my prayer!
Let the lowly earth-born see
Something of thy mystery! — *H. v. l.*



ARTEMIS.

PLATE I.

Genus ARTEMIS, Poli.

Testa plus minus orbicularis, aequivalvis, inequilateralis, concentricè striata aut lirata, raris laevis, liris interduca ad latera laevissimè, præcipuè ad latera posticam, areae ligamentù interduca simplici, plerumque plus minus excavatà, latere antico plerumque lunulata, lunulà impressa. Cardio fortis, dentibus tribus divergentibus in valvè alterà, in alterà quatuor, ligamento subexterno. Impressions musculares oblongæ, subæquales; palli sinu impressio conspicuè lanceolato-trigona, subprofunda. Testa plerumque albida.

Shell more or less orbicular, equivalve, inequilateral, concentrically striated or ridged, rarely smooth, ridges sometimes laminated at the sides, especially at the posterior side, area of the ligament sometimes simple, generally more or less excavated, anterior side mostly impressly lunuled. Hinge strong, with three diverging teeth in one valve and four in the other, ligament sub-external. Muscular impressions oblong, nearly equal; impression of the sinus of the mantle conspicuously lanceolately triangular, rather deep. Shell mostly whitish.

The genus *Artemis* was introduced more than half a century ago, upon anatomical grounds, by Poli. The few species known to Linnæus, Chemnitz, and their contemporaries, were included under *Tenus*, whilst Lamarck, regardless of the views of the Neapolitan malacologist, referred them to his genus *Cytherea*. *Artemis* differs from both of these genera in the form of the foot, in the siphons being united to their extremities, and in the mantle having a lanceolately triangular sinus, which is impressed in a very characteristic manner upon the interior of each valve of the shell. The peculiarities observable in the shell, in addition to that of the pallial sinus, are its orbicular, compressed form, its uniform concentric sculpture, and the general absence of colour and pattern. The shell rarely presents the polished smoothness or colouring of *Cytherea*, few species being so highly painted as the European *A. exoleta* and its exotic analogue, *A. variegata*; neither has it the festooned or serrated varieties of sculpture so frequently presented in *Tenus*. There is little variety in the general aspect of the *Artemides*, but they are well distinguished from each other in detail.

The geographical position of the genus is mainly in the eastern hemisphere. Of sixty-one species described in this monograph, the localities of forty-six are known as follows:—three inhabit the shores of Europe; five are from Korea, Japan, and China; eleven from the Philippines; two from the Moluccas, seven from Australia, and two from New Zealand; six from North America, none being found on the shores of this continent below the equator; and seven only from America.

The genus comprises about seven principal typical forms of species, each of which affects a different locality. *A. concentrica* and its congeners, the largest of the genus, inhabit the shores of Central America, between West Columbia and California; another species of this type, *A. Patagonica*, is recorded from the southern country whose name it bears, but I have not been able to authenticate this locality, and it seems doubtful. The remaining American species, *A. subquadrata*, is from Peru, and of very abnormal character; the shell being thin in substance, not symmetrically orbicular, and without a lunule. The Australian species are typified by the characteristic *A. incisa*, *laevilata*, and *senilis*, the last of which is represented in the Philippine Islands by *A. juvenilis*, whilst *A. variegata* is common to both these localities. *A. plowii*, from the coast of China, has the valves remarkably flattened, and *A. exasperata*, from the Philippine Islands, is the type of another interesting group in which the concentric ridges are thin, and raised at the sides, chiefly the posterior, in squamate laminae. A very singular form, with a supplementary lunule, *A. bilunulata*, is found at Japan; and, on the shores of the Red Sea, a type of totally different growth, contracted and gibbous, is represented by *A. trigona*.

Species 1. (Mus. Cuming.)

ARTEMIS ISOCARDIA. *Art. testâ cordato-ovata, albocænae latè, solutissimè, gibbosâ, concentricè acutè striatâ, striis subirregularibus, areae ligamentù excavatâ, lunulâ cordatâ, subcapillâ, parvâ concento-impressâ; glaucâ, costæon fuscâ.*

THE ISOCARDIA ARTEMIS. Shell cordately ovate, higher than broad, rather solid, gibbous, concentrically sharply striated, striae somewhat irregular, area of the ligament excavated, lunule heart-shaped, rather large, but little concavely impressed; glaucous, tinged with violet.

DUNKER, Phil. Abbild. und Besch. Conch. *Cyth.* p. 36. pl. 8. f. 5.

Hab. — ?

A solid, gibbous, heart-shaped species, approaching in form to Chemnitz's figure of *Tenus contracta* (*Artemis contracta*, Philippi), which I have not been able to identify.

Species 2. (Mus. Cuming.)

ARTEMIS LINCTA. *Art. testâ orbiculari, crassâ, gibbosissimè, creberrimè tenuissimè et irregulariter concentricè striatâ, striis ad latera elevatis, confectis, areae ligamentù subplanatâ, parvâ excavatâ, lunulâ oblongo-cordatâ, impressâ.*

THE SUCKED ARTEMIS. Shell orbicular, thick, rather gibbous, very closely, finely, and irregularly concentric

trically striated, striae somewhat raised and thick-set at the sides, area of the ligament rather flattened, but little excavated, lunule oblong-cordate, impressed.

DESHAYES, *Traité Elm.* pl. 20. f. 12, 13.

Feus lieta, Pulteney.

Cytherea lieta, Lamarck.

Cytherea sinuata, Turton.

An eadem var. *Artemis compta*, Löwen.

Hab. Southern Europe and the British Isles (from low-water mark to a depth of about sixty fathoms).

Species 3. (Mus. Cuming.)

ARTEMIS RUFA. *Art. testâ suborbiculari, crassiusculâ, subgibbosâ, concentricè liratâ, liris ad latera subprominentioribus, arcâ ligamenti subamplâ, excavatâ, lunulâ cordatâ, impressâ; ferrugineo-rufâ, varîe albidiatâ.*

THE RED ARTEMIS. Shell nearly orbicular, rather thick and gibbous, concentrically ridged, ridges rather more prominent, area of the ligament rather large, excavated, lunule cordate, impressed; rust-red, variously rayed with white.

Cytherea rufa, Lamarck, *Anim. sans vert.* (Deshayes' edit.) vol. vi. p. 311.

Hab. — ?

Although readily distinguished from typical examples of *A. juvenilis*, many may incline, with M. Deshayes, to regard it as a variety of that species.

Species 4. (Mus. Cuming.)

ARTEMIS PONDEROSA. *Art. testâ suborbiculari, compressiusculâ, paululum latiore quam altâ, concentricè sulcatâ, sulcis medio ferè obsolete, arcâ ligamenti simplicî, lunulâ oblongo-cordatâ, concavo-impressâ; lacteâ, epidermide tenui coruâ nitente indatâ.*

THE PONDEROUS ARTEMIS. Shell nearly orbicular, rather compressed, a little broader than high, concentrically grooved, grooves almost obsolete in the middle, area of the ligament simple, lunule oblong-cordate, concavely impressed; cream-colour, covered with a thin, shining, horny epidermis.

GRAY, *Analyst*, 1838, vol. viii. p. 309.

Artemis gignotea, Philippi (fide Sowerby, MS. ined.)

Hab. Gulf of California (in sandy mud at low water).

This fine large species approaches very closely to the *A. concentrica*; it is of a more orbicular form, and the sculpture is less definitely engraved.

Species 5. (Mus. Cuming.)

ARTEMIS JUVENILIS. *Art. testâ suborbiculari, crassiusculâ, concentricè tenuiliratâ, liris ad latera sublanceolatis, arcâ ligamenti subamplâ, excavatâ, lunulâ cordatâ, plano-impressâ; albâ, biradiatâ, rufa maculatâ.*

THE YOUTHFUL ARTEMIS. Shell nearly orbicular, rather thick, concentrically finely ridged, ridges slightly lamellated at the sides, area of the ligament rather large, excavated, lunule cordate, flatly impressed; white, two-rayed, blotched with rust-red.

Feus juvenilis, Gmelin, *Syst. Nat.* p. 3387.

Feus juvenis, Chemnitz.

Hab. Bay of Manila, Island of Luzon, Philippines (in sandy mud); Cuming.

The colouring of this species is very similar to that of the Australian *A. scalaris*, of which it might easily be taken for a dwarf variety.

Species 6. (Mus. Cuming.)

ARTEMIS CHINENSIS. *Art. testâ subquadrato-orbiculari, tenuiculâ, valdè gibbosâ, concentricè subirregulariter striatâ, striae elecatiusculis, striae aliis tenuibus impressis radiantibus decussatis, arcâ ligamenti simplicî, lunulâ nullâ, marginibus vix crenulatis; albâ, ferrugineo-lietâ, marginem versus cinereo-cerulescente.*

THE CHINESE ARTEMIS. Shell somewhat squarely orbicular, rather thin, very gibbous, concentrically rather irregularly striated, striae somewhat raised, crossed with other thin impressed radiating striae, area of the ligament simple, no lunule, margins crenulated within; whitish, tinged with rust-brown, coloured with ash-blue towards the margin.

Feus Chinensis, Chemnitz, *Conch. Cab.* vol. x. p. 356. pl. 171. f. 1663.

Cyprina tenuicra, Lamarck.

Hab. China, Korea.

This species has the characteristic pallial impression of *Artemis*, although the shell, having no lunule, is somewhat of an abnormal form. It was certainly incorrectly placed by Lamarck in the genus *Cyprina*. It ranges from China as far north as the islands of the Korean Archipelago, where the species is abundant and the animal is eaten by the inhabitants as a common article of food. Some specimens are much more gibbous, or rather globose, in their growth than others. The colour most inclines to bluish lavender or ash towards the margin.

Species 7. (Mus. Cuming.)

ARTEMIS HEPATICA. *Art. testâ subquadrato-orbiculari, tenuiculâ, compressâ, concentricè tenuissimè striatâ, sub lente stria tenuissimis radiantibus impressâ, arcâ ligamenti simplicî, lunulâ subelongato-cordatâ, superficialiorâ, vix nullâ; livido-cerulescente, nubonibus pallidè rufescentibus aut flavidis, intus violacâ.*

THE LIVER-COLOURED ARTEMIS. Shell somewhat squarely orbicular, rather thin, compressed, concentrically very finely striated, impressed beneath the lens with very fine radiating striae, area of the ligament simple, lunule rather elongately cordate, superficial, scarcely any; livid-blue, umbones pale reddish or yellowish, interior violet.

PHILIPPI, *Abbild. und Besch. Cyth.* pl. 4. pl. 2. f. 3.

Hab. — ?

Like the preceding species in form, only that it is much smaller and flatter. It is faintly impressed with radiating striae, and there is little indication of any lunule.



ARTEMIS.

PLATE II.

Species 8. (Mus. Cuming.)

ARTEMIS CONCENTRICA. *Art. testâ transversè oratâ, latiore quam altâ, compressâ, posticè subproductâ, concentricè echerrimè inciso-sculatâ, sulcis cir profandis, areâ ligamentâ simplicî, lunulâ cordatâ; albâ, epidermide stramineâ indutâ.*

THE CONCENTRIC ARTEMIS. Shell transversely ovate, broader than high, compressed, somewhat produced posteriorly, concentrically very closely grooved, grooves not very deep, area of the ligament simple, lunule heart-shaped: white, covered with a straw-coloured epidermis.

Venus concentrica, Gmelin, Syst. Nat. p. 3256.

Hab. Porto Portoro, Central America. Cuming.

It is impossible exactly to determine which species Gmelin intended for the type of his *Venus concentrica*: and of succeeding authors, some have figured one for it, and one another. The shell here represented seems best to agree with the figures of Lister and Chemnitz.

Species 9. (Mus. Cuming.)

ARTEMIS DISCUS. *Art. testâ leviculi, transversè oratâ, posticè subquadratâ, latiore quam altâ, valde compressâ, concentricè subtilissimè inciso-striatâ, iris interstitialis ad latera subobsoletis et unacuo decresecentibus, areâ ligamentâ simplicî, lunulâ rotundato-cordatâ; albidâ, fuscis pallidè ferrugineis, interstria antea obscureâ flectâ, epidermide levi corvâ indutâ.*

THE QUOT ARTEMIS. Shell rather thin, transversely ovate, posteriorly somewhat square, broader than high, very compressed, concentrically very finely engraved with striae, intermediate ridges rather obsolete and decreasing in number at the sides, area of the ligament simple, lunule rotundately heart-shaped: whitish, sometimes, but obscurely, stained with light rust bands, and covered with a thin horny epidermis.

Hab. United States.

This fine species is chiefly distinguished by its compressed growth and fine sculpture.

Species 10. (Mus. Cuming.)

ARTEMIS ANUS. *Art. testâ subquadrato-orbiculari, crassâ, compresso-concavâ, concentricè rugoso-striatâ, iris hic*

allic divaricatis, ad latera unacuo valde decresecentibus sed convergentis et basimulibus, percipie ad posteriorem, areâ ligamentâ excavatâ, lunulâ oblongo-cordatâ, profundè impressâ; carneo-albâ, marginem versus et ad umbones rufescentibus.

THE SHRIVELLED ARTEMIS. Shell somewhat squarely orbicular, thick, compressly convex, concentrically rugosely ridged, ridges here and there divaricate, considerably decreasing in number at the sides, but shrivelled and lamellar, especially at the posterior side, area of the ligament excavated, lunule oblongo-cordate, deeply impressed: flesh-white, reddish at the umbos and towards the margin.

PHILIPPI, Abbild. und Besch. Conch. vol. iii. p. 23 *Cyth* pl. 8. f. 1

Hab. New Zealand: Earl.

This fine species, which is of rather solid growth, is chiefly characterized by the manner in which the concentric ridges divaricate on the posterior side into comparatively distant wrinkled lamellæ. The brick-red tinge of colouring upon the umbos and towards the margin, is also peculiar. The lunule is rather deeply sunk.

Species 11. (Mus. Cuming.)

ARTEMIS SCALARIS. *Art. testâ suborbiculari, aliquantâ latiore quam altâ, concentricè echerrimè striatâ, iris in medio appressis, ad latera angustioribus, sublamellaribus, areâ ligamentâ simplicî, lunulâ cordatâ; albidâ, spallivo-rufâ plus minusve tinctâ aut fuscintâ.*

THE STEP-LADDER ARTEMIS. Shell somewhat orbicular, a little broader than high, concentrically very closely ridged, ridges appressed in the middle, narrower and somewhat lamellar at the sides, area of the ligament simple, lunule cordate: whitish, more or less stained and banded with fawn-red.

Cytherea scalaris, Munké, Moll. Nov. Holl. p. 42. no. 241
Hab. Mouth of the Swan River, New Holland.

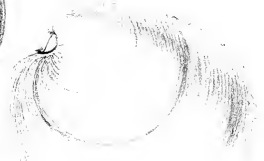
The *Artemides* have so little of colour, that where it is present it forms a characteristic feature. This beautiful Australian species may be readily known by its peculiar fawn-red colouring, as well as by the arrangement of the concentric ribs, which, instead of becoming less numerous at the sides as in most species, converge together without diminishing in number, by growing narrower, closer, and more elevated.



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ARTEMIS.

PLATE III.

Species 12. (Mus. Cuning.)

ARTEMIS NITENS. *Art. testâ suborbiculari, compressâ, aliquantô latiore quam altâ, concentricè incisò-sulcatâ, liris intermedis, appressis, arca ligamentâ simplici, lamellâ cordatâ; albâ, epidermidè tenui, coruscâ, nitentè, indolâ.*

THE SHINING ARTEMIS. Shell nearly orbicular, compressed, a little broader than high, concentrically engraved with grooves, intermediate ridges appressed, area of the ligament simple, lamelle cordate; white, covered with a thin, shining, horny epidermis.

Hab. — ?

Very like *A. gigantor* in general aspect, but not agreeing sufficiently in form to be considered as the young of it. The umbones are more produced, whilst the shell is compressed and proportionably wider.

Species 13. (Mus. Cuning.)

ARTEMIS LAMELLATA. *Art. testâ suborbiculari, compressissimâ, aliquantô latiore quam altâ, circa umbones subtilissimè striatâ, deinde sulcatâ et lamellatâ, lamellis binis acutis, umbones versus inclinatis, ad latera paucioribus, elevatis, arca ligamentâ subexcavatis, lamellatis, lamellâ oblongo-cordatâ, subprofundâ; albâ.*

THE LAMELLATED ARTEMIS. Shell nearly orbicular, rather compressed, a little broader than high, very finely striated around the umbones, then grooved and lamellated, lamellæ two and two, sharp, at the sides fewer and more elevated, area of the ligament slightly excavated, lamellated, lamelle oblong-cordate, rather deep; white.

Hab. North Australia; Jukes.

Distinguished from all the species by its sharp, concentric lamellæ, which are slightly inclined back towards the umbones.

Species 14. (Mus. Cuning.)

ARTEMIS SCABRISCUCLA. *Art. testâ suborbiculari, convexâ, solidimentâ, vir latiore quam altâ, posticè superiè subangulatâ, concentricè tenuissimè et creberrimè licatâ, liris ad latera acutè lamellaribus, arca ligamentâ late excavatâ, lamellatâ, margine subspinosâ, lamellâ cordatâ, profundè impressâ; albâ.*

THE ROUGHENED ARTEMIS. Shell nearly orbicular, convex, rather solid, scarcely broader than high, posteriorly slightly angled at the upper part, concentrically very finely and closely ridged, sharply lamellar at the sides, area of the ligament broadly excavated, lamellated, somewhat spinose at the margin, humle heart-shaped, deeply impressed; white.

PHILIPPI, *Abbild. und Besch. Conch. vol. ii. p. 230. Cyth. pl. 5. f. 2.*

Hab. — ?

Of more solid growth than the preceding species, with the ridges less eminently raised in lamellæ at the sides, notwithstanding that they are more spinose on the posterior angle, owing to the deeper excavation of the ligamentary area.

Species 15. (Mus. Cuning.)

ARTEMIS SUBQUADRATA. *Art. testâ subquadrato-orbiculari, tenui, arca inæqualisulcatâ, basi versus obscurè attenuatâ, concentricè creberrimè et subtilissimè striatâ, arca ligamentâ simplici, lamellâ nullâ; sordide albâ, epidermidè tenuissimâ indolâ.*

THE SQUARE-INCLINED ARTEMIS. Shell somewhat squarely orbicular, thin, rather swollen in the middle obscurely attenuated towards the base, concentrically very closely and finely striated, area of the ligament simple, no lamellæ; dead white, covered with a very thin epidermis.

HANLEY, *Wood, Index Test. Supp. Pl. 15. f. 39.*

Hab. St. Elena, West Columbia (in sandy mud at low water), and Lobos Island, Peru (in sandy mud at a depth of from six to seventeen fathoms); Cuning.

This species is typically distinct from all others of the genus, very thin and tumid, without any lamellæ.

Species 16. (Mus. Cuning.)

ARTEMIS INCISA. *Art. testâ orbiculari, convexo-compressâ, nudique conspicuè concentricè incisò-sulcatâ, liris intermedis regularibus, appressis, ad latera submentis, arca ligamentâ simplici, lamellâ oblongo-cordatâ, impressâ, nitide albâ.*

THE ENGRAVED ARTEMIS. Shell orbicular, convexly compressed, conspicuously concentrically sharply

grooved throughout, intermediate ridges regular, appressed, rather sharp at the sides, area of the ligament simple, lunule oblong-cordate, impressed; shining white.

Hab. North Australia: Jukes.

Allied to the typical species of the genus *A. concentrica*, from which it differs mainly in being more truly orbicular.

Species 17. (Mus. Cuming.)

ARTEMIS JAPONICA. *Art. testâ suborbiculari, compressâ, aliquanto latiore quam altâ, posticè superiôrè angulosâ, concentricè subtiliter elevato-striatâ, striis ad latera paucioribus, sublamellatis, arâ ligamenti latè excavatâ, marginè subproductâ et obscure spinosâ, lunulâ oblongo-cordatâ, impressâ; sordide carneo-cinereovate.*

THE JAPAN ARTEMIS. Shell nearly orbicular, a little broader than high, posteriorly angular along the upper part, concentrically finely elevately striated, striae fewer and slightly lamellated at the sides, area of the ligament broadly excavated, somewhat produced and obscurely spinose along the edge, lunule oblong-cordate, impressed; dull flesh-tinged ash-colour.

Hab. Japan: Dr. Siebold.

A very characteristic species, of quite a different type from those of North Australia, being closely sculptured with sharp, raised striae, which diminish materially in number at the sides and incline to form lamellae.

Species 18. (Mus. Cuming.)

ARTEMIS PLANA. *Art. testâ orbiculari, superiôrè subacuminatâ, peculiariter plano-compressâ, concentricè subtilissimè et creberrimè striatâ, striis medio plus minus obsoletis, arâ ligamenti simplici, lunulâ oblongo-cordatâ, umbonibus parvis; albâ, epidermide coriâ tenuissimâ marginem versus indatâ.*

THE FLAT ARTEMIS. Shell orbicular, somewhat acuminated towards the upper part, peculiarly flatly compressed, concentrically very finely and closely striated, striae more or less obsolete in the middle, area of the ligament simple, lunule oblong-cordate, umboes small; white, covered towards the margin with a thin horny epidermis.

Hab. China.

Remarkable for its thin, compressly flattened growth, whilst the concentric sculpture is so fine that it might escape observation.



ARTEMIS.

PLATE IV.

Species 19. (Mus. Cuming.)

ARTEMIS SUBROSEA. *Art. testâ suborbiculari, aliquantulo latiore quam altâ, concentricè concentricè nitidè creberrimè levatè-striatâ, striâs ad latera vir elevaturibus, arcâ ligamenti subexcavati, lunulâ cordatâ, impressâ; pallidè rosaceo-spiculatâ.*

THE ROSE-TINGED ARTEMIS. Shell nearly orbicular, a little broader than high, convex, concentrically very closely sculptured with neat raised striae, which are scarcely more elevated at the sides, area of the ligament slightly excavated, lunule cordate, impressed; pale pinkish-fawn.

GRAY, Yates' New Zealand, p. 309.

Hab. New Zealand.

A. subrosea approaches very nearly in form, colour, and sculpture, to the *A. Japonica*, which is remarkable in two species from such distant localities. The area of the ligament is more widely excavated in the latter, and the striae inclined to become lamellated at the sides.

Species 20 (Mus. Cuming.)

ARTEMIS ALATA. *Art. testâ suborbiculari, superiùs attenuatâ, aliquantulo altiore quam latâ, compresso-planâ, posticè peculiaritè sulcatâ, deinde alatâ, concentricè subtilissimè incisio-striatâ, subhirsutâ; albâ, epidermidè tenuissimâ marginem ceraso involutâ.*

THE WINGED ARTEMIS. Shell nearly orbicular, attenuated at the upper part, a little higher than broad, compressly flattened, peculiarly grooved, and then winged posteriorly, concentrically very finely sculptured with engraved striae, rather smooth; white, covered towards the margin with a very thin epidermis.

Hab. — ?

Distinguished from all other species of the genus by the peculiar winged structure of the upper posterior margin.

Species 21. (Mus. Cuming.)

ARTEMIS ENASPERATA. *Art. testâ subquadrato-orbiculari, concentricè irregularitè sulcatâ, hinc subundulata, hic illic convergentibus, ad latera praeconvexitibus, inter-*

ruptis et corrugatis, ad marginem conspicuè squamato-lamellatis, erectis, arcâ ligamenti latè excavatâ, irregulari, lunulâ cordatâ, lineâ profundè impressâ circumscriptâ; lactea.

THE SHARP ARTEMIS. Shell somewhat squarely orbicular, concentrically irregularly grooved, ridges slightly waved, here and there converging together, more prominent at the sides, interrupted and wrinkled, conspicuously elevated at the margin into squamate lamellae, area of the ligament broadly excavated, smooth, lunule cordate, surrounded with a deeply impressed line; cream-colour.

PHILIPPI, Abbild. und Besch. Conch. vol. iii. p. 24. *Catâ* pl. S. f. 4.

Hab. Bay of Manila, Island of Luzon, Philippines (in sandy mud); Cuming.

Very distinctly characterized by the irregular wrinkled growth of the concentric ridges, and by the manner in which they are elevated into lamellar scales along the posterior margin.

Species 22. (Mus. Brit.)

ARTEMIS BILUNULATA. *Art. testâ subtriangolo-orbiculari, superiùs attenuatâ, compressâ, planâ, concentricè tenuissimè striatâ, striâs ad latera subpraeconvexitibus, in squamis lamelliformibus terminatis, ad latera anticâ ante marginem lunulâ secundâ formantibus, arcâ ligamenti latissimè excavatâ, hirsutâ, lunulâ primâ cordatâ, subprofundè impressâ, secundâ oblongo-cordatâ, multo majore; albâ, radiis pallidè ceraso interruptis concinè pictâ.*

THE DOUBLE-LUNULED ARTEMIS. Shell somewhat triangularly orbicular, attenuated at the upper part, compressed, flattened, concentrically very finely striated, striae rather more prominent at the sides, terminating in lamelliform scales, before reaching the edge on the anterior side forming a second lunule, area of the ligament very broadly excavated, smooth, first lunule cordate, rather deeply impressed, second lunule oblong-cordate, much the larger, white prettily painted with light rose interrupted rays.

GRAY, Analyst Quart. Journ. 1838, Part 24, p. 309.

Hab. Japan; Dr. Siebold.

An extremely interesting species, remarkable for the second lunule, which is formed by the ridges terminat-

in lamellaform scales before reaching the edge of the shell. The coloured rays constitute also a characteristic feature in this comparatively colourless genus.

Species 23. (Mus. Cuning.)

ARTEMIS PROSTRATA. *Art. testā quadrato-orbiculari, valde depressā, concentricè lirata, liris ad latera irregulariter convergentibus et corrugatis, aurginea cersus lamellaribus et squamatis, arcū ligamenti suberectā, lunulā elongato-cordatā; sordide fulvā.*

THE FLATTENED ARTEMIS. Shell squarely orbicular, very depressed, concentrically ridged, ridges converging irregularly at the sides and wrinkled, lamellar and squamate towards the margin, area of the ligament slightly excavated, lunule elongately cordate: dull fulvous colour.

Venus prostrata, Linnæus, Syst. Nat. (12th. edit.) p. 1133. Enc. Méth. pl. 277. f. 1.

Hab. Mouth of the Swan River, New Holland; Collie.

Peculiarly inclined to grow square, and further characterized by the irregular converging together and wrinkling of the ridges.

Species 24. (Mus. Cuning.)

ARTEMIS CORRUGATA. *Art. testā suborbiculari, aliquantū latiore quam altā, tenui, convexā, concentricè striatā, striis in medio fere obsolete, ad latera posticua liris convergentes et corrugatas fornicatibus, ad latera antica minus elevatis, longitudinaliter lineis indentatis obsolete radiatā, arcū ligamenti simplici, lunulā sub-oblongo-cordatā; sordide spatheo-albā.*

THE WRINKLED ARTEMIS. Shell nearly orbicular, a little broader than high, thin, convex, concentrically striated, striae almost obsolete in the middle, forming wrinkled and converging ridges at the posterior side, much less elevated on the anterior side, longitudinally obsoletely rayed with indented lines, area of the ligament simple, lunule oblong-cordate: dull fawn white.

Hab. — ?

A light, thin species, with a greater difference between the sculpture of the middle and sides of the shell than usual.

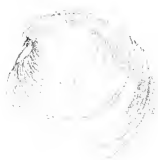
Species 25. (Mus. Brit.)

ARTEMIS CERULEA. *Art. testā orbiculari, medio convexo-tumida, posticè subangulatā, crassā, concentricè subtiliter elevato-striatā, arcū ligamenti sublato excavatā, lunulā cordatā; albidā, umbones cersus roseo et ceruleo tinctā.*

THE BLUE-TINGED ARTEMIS. Shell orbicular, convexly tumid in the middle, posteriorly slightly angled, thick, concentrically finely elevatedly striated, area of the ligament rather broadly excavated, lunule cordate, whitish, tinged with pink and blue towards the umbones.

Hab. Raines' Island, Torres Straits: Captain Ince

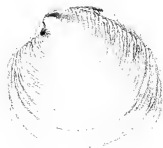
A solid species, in which the concentric striae are not more prominent at the sides than elsewhere: whilst the delicate pink and blue colouring about the umbones is characteristic.



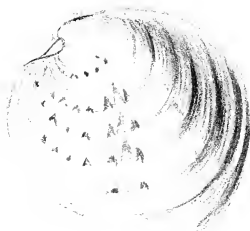
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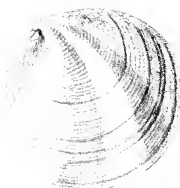
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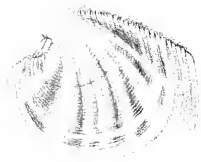
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ARTEMIS.

PLATE V

Species 26. (Mus. Cuming.)

ARTEMIS FIBULA. *Art. testâ orbiculari, crassiusculâ, plano-convexâ, concentricè creberrimè tenuistriatâ, striis ad latera subelevatioribus, areâ ligamentâ subampliter excavatâ, lunulâ cordatâ, profunde impressâ; lutescente-albâ.*

THE BUTTON ARTEMIS. Shell orbicular, rather thick, flatly convex, concentrically very closely finely striated, striae rather more elevated at the sides, area of the ligament rather largely excavated, lunule heart-shaped, deeply impressed; yellowish-white.

Hab. Mouth of the Gambia, West Africa.

Principally remarkable for the deeply impressed growth of the lunule.

Species 27. (Mus. Cuming.)

ARTEMIS AFRICANA. *Art. testâ suborbiculari, umbones versus subattenuatâ, compresso-convexâ, concentricè tenuistriatâ, striis ad latera subelevatioribus, areâ ligamentâ conspicuè lanceolatâ-excavatâ, lunulâ cordatâ, subprofunde impressâ; fuscovirente-albâ, umbones versus pellucido-corneo lactâ, intus sæpè fuscovirentè.*

THE AFRICAN ARTEMIS. Shell nearly orbicular, slightly attenuated towards the umbones, compressly convex, concentrically finely striated, striae rather more elevated at the sides, area of the ligament conspicuously lanceolately excavated, lunule cordate, rather deeply impressed; fuscous-white, stained with transparent flesh-colour towards the umbones, interior often brownish-red.

GRAY, Analyst, 1838, vol. viii. p. 309

Le Dosia, Adanson.

Artemis Adansonii, Philippi.

Hab. Senegal, West Africa.

The transparent flesh-tinge around the umbones of this species, forms one of its characteristic peculiarities.

Species 28. (Mus. Cuming.)

ARTEMIS CÆLATA. *Art. testâ subquadato-orbiculari, tenuiculâ, compressâ, concentricè subtilissimè striatâ, striis creberrimis, ad latera multo paucioribus, subcorrugatis,*

areâ ligamentâ simplici, areâ secundâ subexcavatâ, tenè laminatâ, circumdatâ, lunulâ subelongato-cordatâ; albâ, umbonibus fuscovirentibus.

THE CARVED ARTEMIS. Shell somewhat squarely orbicular, rather thin, compressed, concentrically very finely striated, striae very close-set, much fewer in number at the sides, slightly corrugate, area of the ligament simple, surrounded by a second slightly excavated thinly laminated area, lunule rather elongately cordate; white, umbones yellowish.

Hab. Catanaon, Island of Luzon, Philippines (in fine sand at low water); Cuming.

Characterized in an especial manner on the posterior side by a delicately carved supplementary area.

Species 29. (Fig. a and b. Mus. Cuming.)

ARTEMIS EXOLETA. *Art. testâ circ quadato-orbiculari, concentricè irregulariter rudi striatâ, areâ ligamentâ simplici, angustâ, lunulâ oblongo-cordatâ, subimpressâ; lactâ, fuscovirente-rufa obscure radiatâ aut promiscuè variegatâ, lunulâ fuscovirentè.*

THE WORN ARTEMIS. Shell slightly squarely orbicular, concentrically irregularly rudely striated, area of the ligament simple, narrow, lunule oblong-cordate, rather impressed; cream-colour, obscurely rayed or promiscuously variegated with brownish-red, lunule brownish.

DESHAYES, *Traité Élém.* pl. 20. f. 9-11.

Fœvus exoleta, Lamarck.

Pectenulus capillaceus, Da Costa.

Cytherea exoleta, Lamarck.

Hab. British and European shores (in sandy ground from low-water mark to a depth of from seventy to eighty fathoms).

A curious transition may be traced from this well-known European species, into *A. variegata*, inhabiting the Eastern Seas between the Philippine Islands and Australia.

Species 30. (Mus. Cuming.)

ARTEMIS CUMINGII. *Art. testâ circ orbiculari, posticè conspicuè angulato-productâ et truncatâ, concentricè subtilissimè et creberrimè striatâ, striis ad latera con-*

convergentibus, extremitatibus per marginem posteriorem squamato-laminatis, area ligamenti peranaplâ, lata, parva excavata, lunula cordata, impressa; alibi, ferrugineo-fusco eximie tinctâ et radiatâ.

CUMING'S ARTEMIS. Shell scarcely orbicular, conspicuously angularly produced and truncated behind, concentrically very finely and closely striated, striae converging at the sides, the extremities being squamately laminated along the posterior margin, area of the ligament very large, broad, but little excavated, lunule cordate, impressed; whitish, delicately stained and rayed with rust-brown.

Hab. San Nicolas, Island of Zebu, Philippines (in sandy mud): Cuming.

A very distinct species, remarkable for its angularly produced growth posteriorly, and the spacious ligament-area thereby occasioned.

Species 31. (Mus. Cuming.)

ARTEMIS GRUNERI. *Art. testâ orbiculari, posticè subangulatâ, umbones versus paululum attenuatâ, compressiscentâ, concentricè creberrimè striatâ, striae ad latera convergentibus, per marginem posteriorem sublamatis, area ligamenti peranaplâ, parva excavatâ, lunulâ cordatâ, impressâ; alibi, nubonibus flavicantibus.*

GRUNER'S ARTEMIS. Shell orbicular, slightly angled posteriorly, a little attenuated towards the umbones, rather compressed, concentrically very closely striated, striae converging at the sides, slightly laminated along the posterior margin, area of the ligament very large, but little excavated, lunule cordate, impressed; white, umbones yellowish.

PHILIPPI, *Abbild. und Besch. Conch. Cyth.* p. 35. pl. 8. f. 2.

Hab. China

Allied in form and general character to *A. Africana*, but of larger dimensions.



ARTEMIS.

PLATE VI.

Species 32. (Mus. Cuming.)

ARTEMIS PENCILLATA. *Art. testâ subquadrato-orbiculari, lenticulâ, compressâ, concentricè subtiliter et creberrimè striatâ, areâ ligamenti rix excavatâ, lunulâ oblongo-cordatâ, subobsoletâ; carina-albidâ, lineis tenuibus nigricantibus interruptis, marginem versus peculiariter calatâ.*

THE PENCILLED ARTEMIS. Shell somewhat squarely orbicular, rather thin, compressed concentrically finely and very closely striated, area of the ligament scarcely excavated, lunule oblong-cordate, rather obsolete; flesh-white, peculiarly rayed with fine interrupted blackish lines.

Hab. — ?

The radiating interrupted lines of this species have the appearance of light pencillings.

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

ARTEMIS VARIEGATA. *Art. testâ orbiculari, nonnî lenticulâ, nonnî compressâ, concentricè licatâ, iris interlineâ subtilibus nuceosis, interlineâ subtransversis, lamina nubosâ versus reflexis, areâ ligamenti rix excavatâ, lunulâ cordatâ, impressâ; albidâ, fasciis tribus infuscationis plus minus distinctè radiatâ, interstitiis lineis flexuosis, sâpè interruptis, lunulâ fasciâ, antonibus interlineâ roseis, areâ ligamenti fuscâ tessellatâ.*

THE VARIEGATED ARTEMIS. Shell orbicular, sometimes rather swollen, sometimes compressed, concentrically ridged, ridges sometimes fine and numerous, sometimes slightly laminated, the laminae being reflected towards the umbos, area of the ligament slightly excavated, lunule cordate, impressed; whitish, more or less distinctly rayed with three reddish-chestnut bands, of which the interstices are painted with flexuous lines often interrupted, lunule brown, umbos sometimes pink, area of the ligament tessellated with brown.

GRAY, *Analyst.* 1838, vol. viii. p. 309.

Fanus exoleta variegata, Chemnitz.

Fanus australis, Quoy and Gaimard (not of Gmelin or Chemnitz).

Artemis australis, Philippi.

Hab. Philippine Islands, Moluccas, Australia.

The present species, like all those of wide geographical distribution, is an extremely variable one. In the specimen represented at Fig. 33 *b*, from the Moluccas, which may be regarded as the type, the ridges are more distant, and the painting darker and more exact; in that of Fig. 33 *c*, the ridges are much finer and close-set, the colouring is fainter, and a curious transition is presented to the British *A. exoleta*, through the variety figured in Pl. V. Fig. 29 *b*. The most distinct variety of *A. variegata* is that from Australia represented at Fig. 33 *a*, in which the shell is more compressed, the ridges more laminated, and the colouring paler and more broken. The tessellated painting of the ligament-area and the dark colour of the lunule are characteristic in all the varieties.

Species 34. (Mus. Cuming.)

ARTEMIS DUNKERI. *Art. testâ subtriangulo-orbiculari, undique regulariter concentricè sulcatâ, areâ ligamenti simplicî, lunulâ suboblongo-ovata, parvâ impressâ; albâ, nitidâ.*

DUNKER'S ARTEMIS. Shell somewhat triangularly orbicular, regularly concentrically grooved throughout, area of the ligament simple, lunule rather oblong-ovate, but little impressed; white, shining.

PHILIPPI, *Abbild. und Besch. Conch. Cyth.* p. 1. pl. 2. f. 5.

Hab. St. Elena and Panama, Central America (from sandy mud at low water); Cuming.

A fine species, sculptured with great regularity, belonging to the same typical section of the genus as *A. concentrica*.

Species 35. (Mus. Cuming.)

ARTEMIS CRETACEA. *Art. testâ orbiculari, crassa, postice subflexuosa, concentricè tenuè striatâ, striis ad latera elevatioribus, præcipuè per marginem posticam, areâ ligamenti subnuplîter excavatâ, lunulâ cordatâ, impressâ; albâ.*

THE CHALK ARTEMIS. Shell orbicular, thick, posteriorly rather flexuous, concentrically finely striated, striae more elevated at the sides, especially along the posterior margin, area of the ligament rather largely excavated, lunule heart-shaped, impressed; white.

March, 1850

Hab. Manila, Island of Luzon; Cuming.

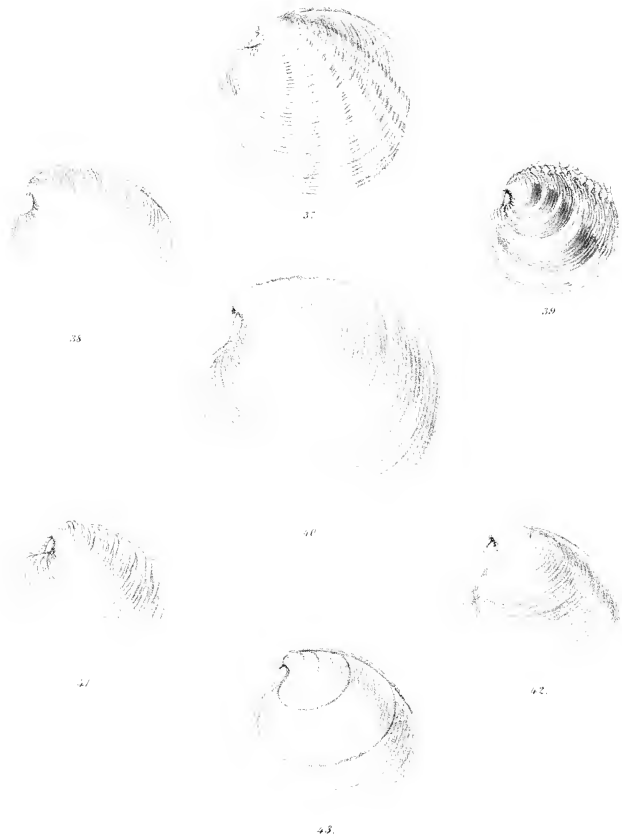
The striae have all the appearance of fine delicate cords.

Fig. 36. (Mus. Cuming.)

This shell proves to be identical with that represented

above at Fig. 32—*A. penicillata*. It agrees with it in form and sculpture, whilst the faint radiating interrupted lines which characterize that shell are present in this, though not sufficiently distinct to claim the attention of the artist.

For Sp. 36 see Pl. VIII.



ARTEMIS.

PLATE VII.

Species 37. (Mus. Cuming.)

ARTEMIS RADIATA. *Art. testâ orbiculari, posticè subflexuoso-contortâ, concentricè crebrilicatâ, liris subirregularibus, scabrescentibus, arcu ligamenti simplicis, lunulâ suboblongo-cordatâ, impressâ; albâ, fœco-roseo radiatâ.*

THE RAYED ARTEMIS. Shell orbicular, posteriorly somewhat flexuously contorted, concentrically closely ridged, ridges somewhat irregular, rather rough, area of the ligament simple, lunule rather oblong-cordate, impressed. whitish, rayed with fulvous pink.

Hab. Mouth of the Gambia, West Africa.

The rayed painting of this species is somewhat faint and broken, but very characteristic.

Species 38. (Mus. Cuming.)

ARTEMIS COSTUSA. *Art. testâ subglobosâ, crassâ, anticè subtrigoniâ, concentricè impresso-striatâ, liris intermediis planulatis, nitentibus, arcu ligamenti latiusculâ, subexcavatâ, lunulâ latè cordatâ, impressâ; albâ, umbones versus lividâ, arcu ligamenti livido-violaceâ.*

THE BRUISED ARTEMIS. Shell somewhat globose, thick, triangularly inclined anteriorly, concentrically impressly striated, intermedial ridges flattened, shining, area of the ligament rather broad, slightly excavated, lunule broadly cordate, impressed; whitish, livid towards the umbones, area of the ligament livid-violet.

Hab. Point Cunningham, North Australia; Dring.

A stout, gibbous shell, characterized by a peculiar tinge of violet livid colouring around the umbones, and within the area of the ligament, which is rather broadly, but not deeply, excavated.

Species 39. (Mus. Cuming.)

ARTEMIS SIEBOLDII. *Art. testâ orbiculari, convexâ, concentricè subtiliter et crebrellicè liratâ, liris ad latera, præcipuè ad posticam, nullò punctioribus, divaricatis et corrugatis, squamæna grandium serie nuda per marginem posticam, arcu ligamenti latiusculâ, rix excavatâ, lunulâ cordatâ; ferrugineo-spaticâ, subobscurè fuscâ.*

SIEBOLD'S ARTEMIS. Shell orbicular, convex, concen-

trically finely and very closely ridged, ridges much fewer at the sides, divaricate and wrinkled, with a single row of large scales along the posterior margin, area of the ligament rather broad, slightly excavated, lunule cordate; rusty bay, rather obscurely banded.

Hab. Japan; Dr. Siebold.

Belonging to the same type of the genus as *A. craspedota*, from which it clearly differs specifically.

Species 40. (Mus. Cuming.)

ARTEMIS PATAGONICA. *Art. testâ suborbiculari, parùm compressâ, concentricè sulcatâ, liris ad latera rix punctioribus, arcu ligamenti simplicis, lunulâ subamplâ; albâ.*

THE PATAGONIAN ARTEMIS. Shell nearly orbicular, but little compressed, concentrically grooved, ridges scarcely fewer in number at the sides, area of the ligament simple, lunule rather large; white.

PHILIPPI, Abhd. und Besch. Conch. Cyth. p. 3. pl. 2. f. 1. *Hab.* Patagonia; Philipp.

Closely allied in form and sculpture, in the appearance of the lunule, and in the simple area of the ligament, to *A. concentrica* and *ponderosa*.

Species 41. (Mus. Cuming.)

ARTEMIS LAMINATA. *Art. testâ orbiculari, posticè subangulatâ, concentricè laminatis, lamina levibus, umbones versus reflexis, ad latera majoribus, arcu ligamenti subexcavatâ, lunulâ cordatâ, parâ, impressâ; albâ.*

THE LAMINATED ARTEMIS. Shell orbicular, slightly angled posteriorly, concentrically laminated, lamina thin, reflected towards the umbones, larger at the sides, area of the ligament slightly excavated, lunule heart-shaped, small, impressed; white.

Hab. Basay, Isle of Samar, Philippines; Cuming.

In specimens of less mature growth than that here figured the laminae are raised throughout the shell.

Species 42. (Mus. Cuming.)

ARTEMIS TRIGONA. *Art. testâ trigono-ovata, crassiusculâ, concentricè subirregulariter rugoso-striatâ, arcu lig-*

acuti parviusculi, simplicis, lunulâ peroviplâ, superficiali, ferrè obsoletâ; albida, ferrugineo tinctâ, lunulâ evanescente-albâ, nitente.

THE TRIANGULAR ARTEMIS. Shell triangularly ovate, rather thick, concentrically somewhat irregularly roughly striated, area of the ligament rather small, simple, lunule very large, superficial, almost obsolete; whitish, stained with rust-brown, lunule bluish-white, shining.

Hab. Red Sea.

Somewhat *Gaethodon*-like in form, and remarkable for the widely-spread superficial character of the lunule.

Species 43. (Mus. Cuming.)

ARTEMIS ENCISA. *Art. testâ subtrigono-orbiculari, crassiusculâ, concentricè rugoso-striatâ, areâ ligamenti profundè excavatâ, lunulâ amplâ, obsoletâ; albida.*

THE EXCAVATED ARTEMIS. Shell triangularly orbicular, rather thick, concentrically roughly striated, area of the ligament deeply excavated, lunule large, obsolete; whitish.

PHILIPPI, Abbild. und Besch. Conch. *Cyth.* p. 4. pl. 2. f. 4.

Venus excisus, Chemnitz.

Hab. Nicobar Island; Behn.

The lunule is more superficial and obsolete in this species than in the preceding. Its chief peculiarity consists in the deeply excavated ligament-area.



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ARTEMIS.

PLATE VIII.

Species 36. (Mus. Cuming.)

ARTEMIS SERICEA. *Art. testâ transversè oratâ, latiore quam albâ, concentricè tenuissimè striatâ, areâ ligamentali simplici, subplanatâ, lunulâ cordatâ, subamplicâ; flaccidè-albâ, umbones versus carnosâ fiavâ.*

THE SILKEN ARTEMIS. Shell transversely ovate, broader than high, concentrically very finely striated, area of the ligament simple, a little flattened, lunule heart-shaped, rather large; yellowish-white, tinged with pink towards the umbones.

Hab. Japan; Dr. Siebold.

The minute and delicate character of the concentric striae give the shell a silken aspect.

Species 41. (Mus. Taylor.)

ARTEMIS ORRIGNYI. *Art. testâ orbiculari, solidâ, plano-convexâ, concentricè striatâ, striis leuonibus, elevatis-usculis, regularibus, ad latera paucioribus, areâ ligamentali lanceolato-excavatâ, lunulâ cordatâ, subimpressâ; albâ, umbones versus lividè-fuscescentibus.*

D'ORRIGNY'S ARTEMIS. Shell orbicular, solid, flatly convex, concentrically striated, striae fine, rather elevated, regular, fewer in number at the sides, area of the ligament lanceolately excavated, lunule cordate, somewhat impressed; white, livid-brown towards the umbones.

DECKER, Philipp. Abbild. und Besch. Conch. Cyth. p. 32. pl. 6. f. 3.

Hab. Guineæ. Tams.

A shell of rather solid growth, in which the striae are rather distant and have the appearance of fine cords. I doubt if Philipp's *A. livida* is anything more than a variety of this species.

Species 45. (Mus. Cuming.)

ARTEMIS LUCINOIDES. *Art. testâ subquadrato-orbiculari, medio lunulâ, posticè subcontractâ, concentricè subtilissimè et creberrimè striatâ, striis ad latera rix paucioribus, areâ ligamentali lanceolato-excavatâ, lunulâ cordatâ, impressâ; surdulè albâ.*

THE LUCINA-LIKE ARTEMIS. Shell somewhat squarely orbicular, swollen in the middle, slightly contracted

posteriorly, concentrically very finely and closely striated, striae rather fewer at the sides, area of the ligament lanceolately excavated, lunule cordate, impressed; dull white.

Hab. Moluccas.

Of a peculiar *Lucina*-form, extremely finely striated.

Species 46. (Mus. Hauley.)

ARTEMIS DUPLICATA. *Art. testâ transversè oratâ, latiore quam albâ, concentricè striatâ, striis elevatis-usculis, acutis, posticè duplicatis, areâ ligamentali plano-excavatâ, lunulâ oblongo-cordatâ, impressâ; luteâ aut flaccidè, umbonibus ad apices roseis.*

THE DUPLICATE ARTEMIS. Shell transversely ovate, broader than high, concentrically striated, striae rather elevated, sharp, ranging two and two on the posterior side, area of the ligament flatly excavated, lunule oblong-cordate, impressed; cream-colour or yellowish, umbones pink at the tips.

Hab. — ?

One of the chief peculiarities of this species consists in the striae ranging off on the posterior side in pairs.

Species 47. (Mus. Cuming.)

ARTEMIS CALCULUS. *Art. testâ suborbiculari, plano-convexâ, compressâ, concentricè subtilissimè et creberrimè striato-liratâ, areâ ligamentali subamplicè excavatâ, lunulâ cordatâ, impressâ; albâ, umbonibus ad apices pallidè roseis.*

THE PEBBLE ARTEMIS. Shell nearly orbicular, flatly convex, compressed, concentrically very finely and closely striately ridged, area of the ligament rather largely excavated, lunule cordate, impressed; white, umbones tinged with pink at the tips.

Hab. Catanaan, Island of Luzon, Philippines (on fine sand at low water); Philippines.

Unusually compressed towards the lower margin.

Species 48. (Fig. a, Mus. Metcalf. Fig. b, Mus. Taylor.)

ARTEMIS AMPHIDESMOIDES. *Art. testâ suborbiculari, concentricè elevato-striatâ, striis ad latera convergenti-*

ARTEMIS.—PLATE VIII.

bus, paucioribus, area ligamenti simplici, lunulā cordatā, subimpressā; albā aut rubidā, obscurē roseo-radiatā, circa umbones violaceo-roseis.

THE AMPHIDESMA-LIKE ARTEMIS. Shell nearly orbicular, concentrically elevately striated, striae converging and fewer in number at the sides, area of the ligament simple, lunule cordate, slightly impressed;

white or ruddy, obscurely pink-rayed, violet-pink around the umbones.

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

The violet-rose colouring around the umbones is very characteristic in this species.



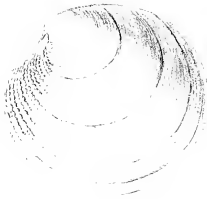
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29



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31



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33



34

PLATE IX.

PLATE IX.

ARTEMIS.

PLATE IX.

Species 49. (Mus. Hanley.)

ARTEMIS ASPERA. *Art. testâ orbiculari, tenuiculâ, subcompressâ, concentricè creberrimè striatâ, striis elevatissimis, irregularibus, asperis, ad latera parùm prominèntioribus, areâ ligamenti plano-convexâ, lævigatâ, lunulâ cordatâ; sordide albâ.*

THE ROUGH ARTEMIS. Shell orbicular, rather thin, somewhat compressed, concentrically very closely striated, striae rather raised, irregular, rough and sharp, but little prominent at the sides, area of the ligament flatly excavated, smooth, lunule cordate; dead white.

Hab. Manilla (in sandy mud at low water); Cuming.

A light shell, sculptured with sharp uneven striae

Species 50. (Mus. Cuming.)

ARTEMIS LUNARIS. *Art. testâ obliquè orbiculari, umbones cæcis attenuatâ, subdilatatâ, compressâ, concentricè subobscurè impresso-striatâ, areâ ligamenti planulatâ, parùm excavatâ, lunulâ oblongo-cordatâ; fuscivirenti-âllâ, umbonibus ad apices roseis.*

THE LUNAR ARTEMIS. Shell obliquely orbicular, attenuated towards the umbones, rather solid, compressed, concentrically rather obscurely impressly striated, area of the ligament flattened, but little excavated, lunule elongately cordate; yellowish white, umbones pink at the tips.

Cytherea lunaris, Lamarck, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 314.

Hab. Mediterranean.

It seems doubtful whether the *Tenus laponicus* of Poli refers to this species or to the young of *Artemis lactea*.

Species 51. (Mus. Cuming.)

ARTEMIS MACILENTA. *Art. testâ suborbiculari, valdè inequilatèrâ, tenuissimâ, compressâ, lævigatâ, et striis irregularibus minutè notatâ, areâ ligamenti simpliciter, lunulâ oblongâ, superficiali, viz nullâ; albâ.*

THE LEAN ARTEMIS. Shell nearly orbicular, very inequilateral, very thin, compressed, smooth, or finely marked with striae of growth, area of the ligament simple, lunule oblong, superficial, scarcely any; white.

Hab. Salango, West Columbia (in sandy mud at the depth of nine fathoms); Cuming.

This very delicate shell, peculiar in form, seems scarcely to have reached maturity.

Species 52. (Mus. Metcalfe.)

ARTEMIS SCULPTA. *Art. testâ suborbiculari, eiz lateris quædam altâ, annulissimâ, concentricè creberrimè striatâ, liris striis radiantibus subundulatis ad latera decussatis, areâ ligamenti simpliciter, lunulâ oblongo-cordatâ, subduplâ; sordide albâ.*

THE SCULPTURED ARTEMIS. Shell nearly orbicular, scarcely broader than high, rather swollen, concentrically very closely striately ridged, ridges decussated at the sides with slightly waved radiating ridges, area of the ligament simple, lunule oblong-cordate, rather large; dead white.

H. b. — ?

The lateral radiating striae constitute a very characteristic feature in this species, the concentric ridges passing over them in festoons.

Species 53. (Mus. Cuming.)

ARTEMIS TURGIDA. *Art. testâ suborbiculari, subrugosa, tenuiculâ, lunulâ, concentricè minutissimè striatâ, areâ ligamenti subappressâ, lunulâ cordatâ, superficiali; ferruginoso-âllâ, liris rufi-scutibus radiantibus inter-raptis obscure penicillatâ.*

THE TURGID ARTEMIS. Shell nearly orbicular, rather uneven, thin, swollen, concentrically very minutely striated, area of the ligament a little appressed, lunule heart-shaped, superficial; rusty white, obscurely pencilled with fine interrupted radiating reddish lines.

H. b. — ?

This has somewhat the light form and appearance of a rounded *Tellina*.

Species 54. (Mus. Cuming.)

ARTEMIS MODESTA. *Art. testâ suborbiculari, compressâ, umbones cæcis subattenuatâ, concentricè minutissimè et creberrimè impresso-striatâ, striis irregularibus cultioribus obscure notatâ, areâ ligamenti truncatulo-convexâ, lunulâ oblongo-cordatâ, impressâ; carneo-âllâ sordide.*

THE MODEST ARTEMIS. Shell nearly orbicular, compressed, slightly attenuated towards the umbones, concentrically very minutely and closely impressly striated, obscurely marked also with irregular radiating striae; flesh-tinged white, shining.

Hab. — ?

The radiating striae have the appearance of light scratches.

Species 55. (Mus. Cuming.)

ARTEMIS BISCOCTA. *Art. testâ suborbiculari, tumidiusculâ, concentricè striatâ, striis asperis, elevatusculis, præ-*

cipue ad latera, areâ ligamenti lanceolato-excavatâ, lunulâ cordatâ, impressâ; sordide albâ, ferrugineo poltide tinctâ.

THE BISCUIT ARTEMIS. Shell nearly orbicular, rather swollen, concentrically striated, striae sharp and uneven, rather elevated, especially at the sides, area of the ligament lanceolately excavated, lunule cordate, impressed; dead white, faintly rust-tinged.

Hab. Japan; Siebold.

The striae of this species are chiefly distinguished by their sharp broken character.



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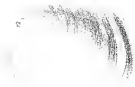
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42

ARTEMIS.

PLATE X.

Species 56. (Mus. Hanley.)

ARTEMIS FERRUGINEA. *Art. testâ subbliquè orbiculari, solidiusculâ, compressâ, concentricè regulariter tenui-striatâ, arâ ligamenti subæccatâ, lunulâ oblongo-cordatâ, impressâ; carneo-albâ, circa umbones ferrugineo-rufâ, apicibus albis.*

THE RUSTY ARTEMIS. Shell somewhat obliquely orbicular, rather solid, compressed, concentrically regularly finely striated, area of the ligament slightly excavated, lunule oblong-ovate, impressed; flesh white, rust-red around the umbones, tips white.

Hab. — ?

With somewhat the aspect of a *Tellina*, this shell is of rather solid growth, having little external sculpture and a deeply impressed lunule.

Species 57. (Mus. Cuming.)

ARTEMIS NANUS. *Art. testâ orbiculari, subcordatâ, gibbosiuseulâ, concentricè liratâ, iris aentis, substantibus, arâ ligamenti simplicis, lunulâ parvaâ, superficialiâ; sordidè albâ.*

THE DWARF ARTEMIS. Shell orbicular, subcordate, rather gibbous, concentrically ridged, ridges sharp, rather distant, area of the ligament simple, lunule very large, superficial; dead white.

Hab. — ?

The ridges of this species are large, and somewhat distant from each other in proportion to the size of the shell.

Species 58. (Mus. Cuming.)

ARTEMIS GLAUCA. *Art. testâ transversè ovatâ, latiore quam albâ, compressiusculâ, concentricè striatâ, striis medio superficialibus, ad latera acutè et tenuissimè liratis, iris obscure secretis, arâ ligamenti ex laucolato-æccatâ, lunulâ cordatâ, impressâ; glauco-albidâ.*

THE GLAUCOUS ARTEMIS. Shell transversely ovate, broader than high, rather compressed, concentrically striated, striae superficial, sharply and finely ridged at the sides, ridges obscurely serrated, area of the ligament slightly laucolately excavated, lunule cordate, impressed; glaucous white.

Hab. San Nicolas, Island of Zebu, Philippines; Cuming.

A small compressed shell, smooth and polished in the middle, finely serrately ridged at the sides.

Species 59. (Mus. Metenlle.)

ARTEMIS SIMPLEX. *Art. testâ longitudinaliter ovata, lunulo altiore quam lata, concentricè striatâ, striis medio subobsoletis, ad latera profundioribus, lunula oblongo-ovatâ, concavo-impressâ; lacteâ, nitente.*

THE SIMPLE ARTEMIS. Shell longitudinally ovate, much higher than broad, concentrically striated, striae rather obsolete in the middle, deeper at the sides, lunule oblong-ovate, concavely impressed, cream-coloured, shining.

HANLEY, Cat. Recent Shells, pl. xv. f. 41.

Hab. — ?

An interesting species belonging to the *A. concentrica* type, distinguished from all others by its longitudinally ovate form.

Fig. 27 b. (Mus. Metcalf.)

This shell proves to be a variety of *A. Africana*, described at Pl. V.

Species 60. (Mus. Hanley.)

ARTEMIS TORRIDA. *Art. testâ suborbiculari, solidiusculâ, concentricè acutè elevato-striatâ, striis substantibus, arâ ligamenti laucolato-æccatâ, lunulâ sublatè cordatâ, profunde impressâ; sordidè albâ.*

THE TORRID ARTEMIS. Shell nearly orbicular, rather solid, concentrically sharply elevatedly striated, striae rather distant, area of the ligament laucolately excavated, lunule rather broadly cordate, deeply impressed; dead white.

Hab. Mouth of the River Gaboon, West Africa.

Concentrically sculptured with fine cord-like striae, after the manner of *A. Orbigayi*.

Species 61. (Mus. Hanley.)

ARTEMIS LONGILUNATA. *Art. testâ subquadrato-ovata,*

ARTEMIS.—PLATE X.

tari, tenui, valde compressa, sub leate radiata im-
presso-striatâ, concentricè creberrimè tenuistriatâ, striis
ad latera paucioribus, elevatis, subcorrugatis, arcuâ
ligamenti latiusculâ, subplanulatâ, lunulâ peculiariter
elongato-cordatâ; flavicute-albâ.

THE LONG-LUNCLED ARTEMIS. Shell somewhat squarely
 orbicular, thin, very much compressed, radiately im-
 pressly striated beneath the lens, concentrically very
 closely finely striated, striae fewer in number at the

sides, slightly raised and corrugated, area of the
 ligament rather broad, a little flattened, lunule pecu-
 liarly elongately cordate; yellowish-white.

Hab. — ?

Approaching *A. penicillata* in form, but distinguished
 from it in detail of sculpture, and in the elongated exten-
 sion of the lunule.

ARTEMIS.

	Plate	Species		Plate	Species
<i>Adamsi</i> , Philippi	V.	27	<i>Japonica</i> , Reece	III.	17
<i>Africana</i> , Gray	V.	27	<i>juvenilis</i> (<i>Venus</i>), Gmelin	I.	5
<i>alata</i> , Reece	IV.	20	<i>laevellata</i> , Reece	III.	13
<i>Amphidesmoides</i> , Reece	VIII.	48	<i>laminata</i> , Reece	VII.	41
<i>anus</i> , Philippi	II.	10	<i>liecta</i> (<i>Venus</i>), Pulteney	I.	2
<i>aspera</i> , Reece	IX.	49	<i>livida</i> , Phil.	VIII.	44
<i>australis</i> , Philippi	VI.	33	<i>longilunata</i> , Reece	X.	61
<i>bilunulata</i> , Gray	IV.	22	<i>Lucinoides</i> , Reece	VIII.	45
<i>bisocata</i> , Reece	IX.	55	<i>lunaris</i> (<i>Cyth.</i>), Lamarck	IX.	59
<i>Brogueiri</i> , Gray	IV.	23	<i>macileuta</i> , Reece	IX.	51
<i>caelata</i> , Reece	V.	28	<i>modesta</i> , Reece	IX.	54
<i>cerulea</i> , Reece	IV.	25	<i>nanus</i> , Reece	X.	57
<i>calculus</i> , Reece	VIII.	47	<i>nitens</i> , Reece	III.	12
<i>Chinensis</i> (<i>Venus</i>), Chemnitz	I.	6	<i>Orbiguyi</i> , Duaker	VIII.	44
<i>conspita</i> , Lovén	I.	2	<i>Patagonica</i> , Philippi	VII.	40
<i>concentrica</i> (<i>Venus</i>), Gmelin	II.	8	<i>penicillata</i> , Reece	VI.	32
<i>contusa</i> , Reece	VII.	38	<i>plana</i> , Reece	III.	18
<i>corrugata</i> , Reece	IV.	24	<i>ponderosa</i> , Gray	I.	4
<i>cretacea</i> , Reece	VI.	35	<i>prostrata</i> (<i>Venus</i>), Linn.	IV.	23
<i>Cumingii</i> , Reece	V.	30	<i>radiata</i> , Reece	VII.	37
<i>discus</i> , Reece	II.	9	<i>rufa</i> (<i>Cyth.</i>), Lamarck	I.	3
<i>Dunkeri</i> , Philippi	VI.	34	<i>scabriuscula</i> , Philippi	III.	11
<i>duplicata</i> , Reece	VIII.	46	<i>scalaris</i> (<i>Cyth.</i>), Menke	II.	11
<i>exasperata</i> , Philippi	IV.	21	<i>sculpta</i> , Hanley	IX.	52
<i>excisa</i> (<i>Venus</i>), Chemnitz	VII.	43	<i>sericea</i> , Reece	VIII.	36
<i>exoleta</i> (<i>Venus</i>), Linn.	V.	29	<i>Sieboldii</i> , Reece	VII.	39
<i>ferruginea</i> , Reece	X.	56	<i>simplex</i> , Hanley	X.	59
<i>fibula</i> , Reece	V.	26	<i>subquadrata</i> , Hanley	III.	15
<i>gigantea</i> , Sowerby	I.	4	<i>subrosea</i> , Gray	IV.	19
<i>glauca</i> , Reece	X.	58	<i>torrida</i> , Reece	X.	60
<i>Granceri</i> , Philippi	V.	31	<i>trigona</i> , Reece	VII.	42
<i>hepatica</i> , Philippi	I.	7	<i>turgida</i> , Reece	IX.	53
<i>incisa</i> , Reece	III.	16	<i>variegata</i> (<i>Venus</i>), Chemnitz	VI.	33
<i>isocardia</i> , Duaker	I.	1			

ERRATA.

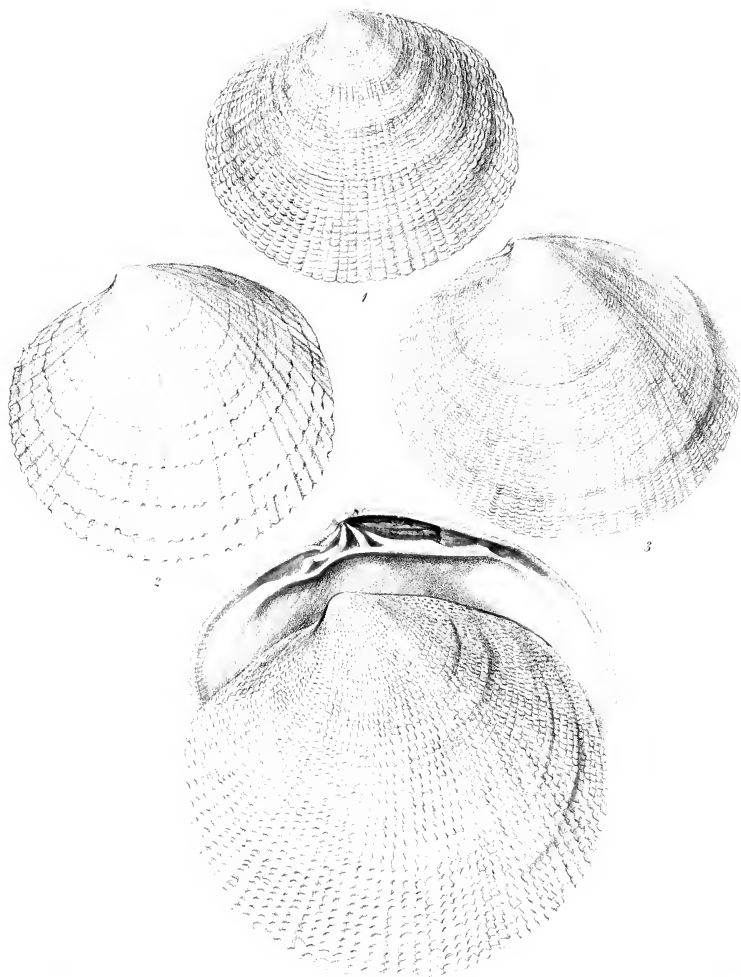
- Sp. 23. *A. prostrata* Add as synonyme *A. Brogueiri*, Gray, Analyst, 1838, vol. viii. p. 309
 Sp. 52. *A. conspita* Add authority. Hanley, Catalogue of Recent Shells, pl. xv. f. 42.

MONOGRAPH

OF THE GENUS

LUCINA.

Wisdom and spirit of the universe,
Thou soul that art the eternity of thought
That giv'st to forms and images a breath
And everlasting motion
Not with the mean and vulgar works of men
But with high objects, with enduring things
With life and nature,—*Wendepoeth*



LUCINA.

PLATE I.

Genus LUCINA. Brugnière.

*Testa plerumque orbicularis, aut plana aut gibbosa, sæpius aë
apiculis et inequilateralis, umbonibus parvis. Cæclo
variabilis, modo carie dentatus, modo edentatus. Im-
pressiones musculares distantes, antica carie prolongata.*
Shell mostly orbicular, either flattened or gibbous, most
frequently equivalve and inequilateral, with the
umbos small. Hinge variable, sometimes variously
toothed, sometimes toothless. Muscular impressions
distant, the anterior one variously prolonged.

The species referred to the genus *Lucina* in the following
monograph, are a somewhat heterogeneous assemblage,
comprehending ten or a dozen distinct types of form,
each of which is characterized by a particular kind of hinge
and external sculpture. Some of these forms have been
regarded, and not improperly so, as separate genera, but
all are alike distinguished in the interior of the shell by a
prolongation of the anterior muscular scar. There are,
moreover, few in which the internal surface of each valve
is not peculiarly grooved, or striated, or punctured.

These sections of the genus are severally represented by
the following species—*L. tigrina*, *Jamaicensis*, *Pennsyl-
vanica*, *Philippina*, *borealis*, *dentifera*, *Childreni*, *pecten*,
diracicata, *cornea*, and *rotundata*; and the structure of the
hinge is regarded in each as a specific, not a generic
character. The shell varies exceedingly in composition,
being in some species extremely thin and fragile, whilst
in others it is very stout; it is, however, somewhat re-
markable for the absence of external colour or painting.

In the first type, *L. tigrina* (Genus *Colokia*, Scopoli),
the shell is characterized by an elaborate decussated
sculpture, and the valves are mostly red-coloured about
the interior margin; *L. Jamaicensis* represents a group
(Genus *Pharoides*, De Blainville) in which the shell is
only concentrically sculptured, and allied to this in form
are the groups typified by *L. Pennsylvanica* and *dentifera*,
the former being distinguished in form and by a peculiar
horny epidermal coat, the latter by having the concentric
ridges serrated and sealed. In *L. Childreni* the shell is
remarkably inequivalve; in *L. pecten* and its congeners
it is variously radiately sculptured; and in *L. diracicata*
and allied species (Genus *Strigella*, Turton), the external
surface of the valves is variously rippled, so to speak,
with waved diverging lines. The shell of *L. borealis*
(Genus *Tridonta*, Schumacher) is of a rounded solid

growth, very closely concentrically sculptured. In all these
the hinge approximates more or less to the *Tricus* type,
with sometimes the addition of remote lateral teeth,
though in one or two species all teeth are obsolete; but
in the very characteristic group typified by *L. Philippina*,
most generically distinct of all, the shell is very gibbous-
thin, and always toothless, the hinge being strengthened,
in the absence of teeth, by a different position of the
ligament, which forms a broad strap, as it were, across the
dorsal margins of the valves. The hinge of *L. rotundata*
and several other species (Genus *Diplodonta*, Brown) is
remarkable for an erect bifid tooth, and in *L. cornea* and
its allies, also very generically distinct, the shell differs
from all the preceding types in being smooth with a polished
horny epidermis of a dark olive colour. The lunule of
the shell in most of these groups is curious, in belonging
more to one valve than to the other. The shell, instead
of opening through the centre of the lunule, as in *Atrina*,
opens mostly on one side of the lunule.

Of seventy *Lucinae* here described, the localities are
known of about fifty. Ten species inhabit the seas of
Europe, ten are from the Philippine Islands, *L. borealis*
being found in both these localities, eight inhabit the West
Indies, seven the west coast of Central America, and the
remainder are from the Bay of Honduras, North Australia,
New Zealand, Red Sea, Senegal, Brazil, Panama, China, and
Peru. In noticing the geographical distribution of the
genus, the chief circumstances to be remarked are, firstly, that
the beautiful type represented in the Bay of Honduras by
L. tigrina and *ocasperata*, appears at Torres Straits, North
Australia, in *L. intercepta*, and at Panama in *L. punctata*,
and, secondly, that the characteristic form *L. Pennsylvanica*
from Jamaica, is represented at Senegal, on the west coast
of North Africa, by *L. columbella*, and on the opposite
side of the continent, on the shores of the Red Sea, by
L. speciosa. The European species have little or no
typical relation, and none of the types of the genus
appear to have any particular local character.

Species 1. (Mus. Cuming.)

LUCINA RUGIFERA. *Luc. testâ ventrâ, longiore quam altâ,
convexissimâ, radiatâ subâsensè sulcatâ, liris con-
centricis corrugatis nulliq; conspicuè exsertis, sulcis
radiantibus ad latera subpinnulis; lactei, pallidâ
s. adiceo concentricè fuscâ.*

THE WRINKLED LUCINA. Shell ovate, longer than high, rather compressed, radiately somewhat obscurely grooved, and conspicuously sculptured throughout with concentric wrinkled ridges, radiating grooves rather deep at the sides; cream-colour, concentrically banded with light fawn-colour.

REEVE, Pro. Zool. Soc. 1835, p. 68.

Hab. —?

This species is characterized by light fawn bands, more or less obscure, upon a dark cream-coloured ground: and the sculpture has a peculiar wrinkled aspect.

Species 2. (Mus. Cuming.)

LUCINA PUNCTATA. *Luc. testâ suborbiculari, convexâ, levigatâ, radiatim sulcatâ, sulcis angustis, linearibus, plus minus distantiis, ad latera numerosis, confertioribus, valvis intus punctatis; albâ, intus lutescente, margine zicidè rosâ.*

THE PUNCTURED LUCINA. Shell nearly orbicular, convex, smooth, radiately grooved, grooves narrow, linear, more or less distant, numerous and closer at the sides, valves punctured within; white, yellowish within, deep rose round the edge.

Tenus punctata, Linnæus, Syst. Nat. (12th edit.) p. 1131.

Cytherea punctata, Lamarek.

Lucina punctata, Deshayes.

Hab. Panama (in sand at low water); Cuming.

Distinguished by its smooth surface and narrow radiating grooves, whilst each valve is conspicuously punctured in the interior.

Species 3. (Mus. Cuming.)

LUCINA TIGERINA. *Luc. testâ oblongo-ovata, longiore quam altâ, plano-convexâ, radiatim multisulcatâ, iris concentricis nudique creberrimè decussatâ; intus extusque albâ.*

THE GRAINED LUCINA. Shell oblong-ovate, longer than high, flatly convex, radiately many-grooved, very closely decussated throughout with concentric ridges; white within and without.

Tenus tigerina, Linnæus, Syst. Nat. (12th edit.) p. 1133.

Cytherea tigerina, Lamarek.

Lucina tigerina, Deshayes.

Hab. Bay of Honduras; Dyson.

This and the following species have been mostly confounded together under the head of *L. tigerina*.

Species 4. (Mus. Cuming.)

LUCINA EXASPERATA. *Luc. testâ suborbiculari, convexâ, sulcis concentricis et radiatibus nudique creberrimè decussatâ, iris intermediis naticato-nodulosis; albâ, margine interno rosâ.*

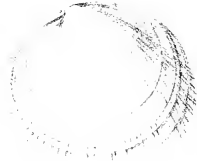
THE SHARP LUCINA. Shell nearly orbicular, convex, very closely decussated throughout with concentric and radiating grooves, the interstitial ridges being prickly-noduled; white, margin rose within.

Hab. Bay of Honduras; Dyson.

This well-known shell, which is Lamarek's *Cytherea tigerina* var. 3, is certainly distinct from that just described, which he makes the type of the species.



5a



5b



6



7a



7b



9



8

LUCINA.

PLATE II.

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

LUCINA INTERRUPTA. *Luc. testâ orbiculari, convexâ, solidiusculâ, concentricè creberrimè tenuistratâ, liris bruciatis, obtusis, foveis impressis inaequidistantibus ad latera ab umbonibus promiscuè radiatâ, lunulâ parvâ, cordatâ, subprofundè excavatâ; albâ, propè cardinem utrinque rosâ, intus cicidè luteâ.*

THE INTERRUPTED LUCINA. Shell orbicular, convex, rather solid, concentrically very closely finely ridged, ridges short, obtuse, promiscuously rayed at the sides with inequidistant impressed lines, lunule small, heart-shaped, rather deeply excavated; white, rose on both sides near the hinge, bright yellow interiorly.

Cytherea interrupta, Lamarck, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 318.

Hab. Buoly Island, Torres Straits; Jukes.

A delicately sculptured species, belonging to the same type as those of the preceding plate, and similarly rose-coloured on either side of the hinge.

M. Deshayes is mistaken in supposing this to be a variety of *L. tigrina*, from Senegal.

Species 6. (Mus. Cuming.)

LUCINA ARGENTEA. *Luc. testâ suborbiculari, convexè depressâ, ad latera ex angulatâ, laeviusculâ, concentricè tenuistratâ, rugosâ, lunulâ cordatâ, conspicuè excavatâ, cardine dente univè centrali, parvâ, duobus lateralibus compressis, prominentibus, erectis; fusciscento-luteâ, intus rufescente-cræva pallidè luteâ.*

THE SILVERY LUCINA. Shell nearly orbicular, convexly depressed, scarcely angled at the sides, rather thin, concentrically sharply finely ridged, ridges inequidistant, interstices radiately delicately corrugate, teeth of the hinge callous, almost obsolete, semitransparent white within and without.

Hab. Moluccas.

A flattened semipellucid silver-white shell very regularly concentrically sculptured.

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

LUCINA JAMAICENSIS. *Luc. testâ suborbiculari, convexè depressâ, ad latera ab umbonibus concentricè angulatâ, concentricè lamellatâ, lamellis bruciis subdistansibus, car-*

ditis dentibus centralibus ferè obsolete, lateralibus prominentibus, compressis, erectis; fusciscento-luteâ, intus cicidè rufescente-crævâ, interdua, intus raris, intus extusque albâ.

THE JAMAICA LUCINA. Shell nearly orbicular, compressed, excavately angled from the umbos at the sides, concentrically lamellated, lamellæ short, rather distant, central teeth of the hinge almost obsolete, lateral teeth prominent, compressed, erect; brownish cream-colour, bright reddish-saffron in the interior, sometimes, but rarely, white within and without.

Luc. Jamaicensis, Chemnitz, Conch. Cab. vol. vii. p. 24 pl. 38. f. 408-9.

Lucina Jamaicensis, Lamarck.

Hab. Jamaica; Gosse.

This well-known species was called by the early French conchologists, the Apricot, after the rich colouring of the interior; there is, however, a well-marked white variety, such as that represented at Fig. 7 *b*, and which is mostly smaller in size.

Species 8. (Mus. Cuming.)

LUCINA BICORNIS. *Luc. testâ gibbosâ-orbiculari, ventricosâ, ab umbonibus utrinque leviter excavatâ, concentricè tenuistratâ, rugosâ, lunulâ cordatâ, conspicuè excavatâ, cardine dente univè centrali, parvâ, duobus lateralibus compressis, prominentibus, erectis; fusciscento-luteâ, intus rufescente-cræva pallidè luteâ.*

THE TWO-HORNED LUCINA. Shell gibbosely orbicular, ventricose, slightly excavated on both sides from the umbos, concentrically finely striated, rough, lunule cordate, conspicuously excavated, hinge with a small single central tooth, and two prominent compressed erect lateral ones, brownish cream-colour, faintly tinged with reddish saffron-colour within.

Hab. Island of Ticao, Philippines (in fine coral sand at low water), Cuming.

Very similar to the following species, except in having two strongly developed lateral teeth.

Species 9 (Mus. Cuming.)

LUCINA EDENTULA. *Luc. testâ orbiculari, tenuiusculâ, concentricè, ab umbonibus utrinque superficialiter excavatâ.*

LUCINA.—PLATE II.

*concentricè subtiliter et densissimè striatâ, cordine
dentulâ; scapellucido-âbbâ, intus rufescente-rosceâ.*

THE TOOTHLESS LUCINA. Shell orbicular, rather thin, ventricose, superficially excavated from the umbones on both sides, concentrically finely and very thickly striated, hinge toothless; semitransparent white, reddish-saffron in the interior.

Venus edentula, Chemnitz, Conch. Cab. vol. vii p. 34 pl. 40
pl. f. 427-9.

Lucina edentula, Lamarck.

Hab. Jamaica.

Similarly coloured in the interior to *L. Jamaicensis*, from which it differs in being of a rounder and more ventricose form. The sculpture consists merely of crowded concentric striae.

The name *Venus edentula* originated with Linnaeus, but it is impossible to determine what species the description was intended to refer to. Dr. Philippi thinks that the species represented at Pl. V., Fig. 23, is the Linnæan *V. edentula*, but it does not appear so to me.



LUCINA.

PLATE III.

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

LUCINA DENTIFERA. *Luc. testâ triquâno-orbiculari, concentricè-depressâ, ad latera latè sâculatâ, subangulatâ, concentricè-lamellatâ, lamellis distantibus, tenuibus, erectis, marginè pulcherrimè serratis, ad latus postiora conspicuè squamatis. albid. epidermide tenuissimâ coracè imbutâ.*

THE FINE-TOOTHED LUCINA. Shell triangular-orbicular, convexly depressed, broadly grooved at the sides, slightly angulated, concentrically lamellated, lamellæ distant, thin, erect, very beautifully serrated at the edge, conspicuously squamate on the posterior side, white, covered with a very thin horny epidermis.

JOHNS, Philippi, *Abbild. und Besch. Conch.* vol. ii. p. 206.
Luc. pl. I. f. 4.

Hab. Suoz, Red Sea.

Distinguished by the beautifully serrated border of the laminae, which are conspicuously developed in erect scales along the posterior margin.

Species 11. (Mus. Cuming.)

LUCINA SIMPLEX. *Luc. testâ orbiculari, convexâ, tenuiculâ, suborbiculatâ, posticè subobsoletè flexuoso-angulatâ, concentricè regularitè creberrimè elevato-striatâ, lucis subtilibus radiatibus densè irregularitè sculptâ; albid.*

THE SIMPLE LUCINA. Shell orbicular, convex, rather thin, nearly equilateral, somewhat obsoletely flexuously angulated on the posterior side, concentrically regularly very closely elevated-striated, and thickly irregularly scratched with fine radiating lines: white.

Hab. North Australia: Jukes.

Very simply concentrically sculptured with striae after the manner of fine ridges, and, upon examination with the lens, is found to be rayed with scratches.

Species 12. (Mus. Cuming.)

LUCINA CHILDRENI. *Luc. testâ subangulatâ, elliptico-orbiculari, umbones versos attenuatâ, inequilaterali, posticè flexuoso-angulatâ, eâdem alterâ planâ, alterâ convexâ, densissimè concentricè striatâ, stris univariis subtilibus impressis radiatibus decussatâ, cardinis dentibus centralibus duobus divaricatis prominensibus, lateralibus callosis, subobsoletis; intus cartilagineo albid.*

CHILDREN'S LUCINA. Shell rather large, elliptically orbicular, attenuated towards the umbones, inequilateral, flexuously angled posteriorly, one valve flat, the other convex, very thickly striated concentrically, decussated with numerous fine impressed radiating striae, central teeth of the hinge two in number, prominent, divaricate, lateral teeth callous, nearly obsolete: white within and without.

GRAY, *Zool. Journ.* vol. i. p. 221.

Hab. Brazil.

In this fine species sometimes the right valve, sometimes the left is the flat one, the opposite valve in either case being convex.

Species 13. (Fig. 13 and 14, Mus. Cuming.)

LUCINA BOREALIS. *Luc. testâ suborbiculari, ex inequilaterali, solidiusculâ, plus minusve ventricosâ, posticè obsoletè flexuoso-crenatâ, anticè subangulatâ, plus minusve productâ, substratâ, concentricè flexuoso-teratâ; sordide albid, epidermide fusciscente indutâ.*

THE NORTHERN LUCINA. Shell nearly orbicular, but little inequilateral, rather solid, more or less ventricose, obsoletely flexuously excavated on the posterior side, somewhat angularly inclined, produced, and substrate anteriorly, concentrically sculptured with thread-like ridges: deal white, covered with a brownish epidermis.

Venus borealis, Linnæus, *Syst. Nat.* 12th. edit. p. 1443.

Lucina borealis, Forbes and Hauley

Tellina radula, Montagu.

Lucina radula, Lamurek.

Testa junior. *Lucina alba*, Turton.

Hab. Northern Europe and the British Isles. Massachusetts, United States: Gould. Bay of Manila, Island of Luzon, Philippines: Cuming.

The *Lucina borealis* has a much wider geographical range than has been hitherto supposed. The shell Fig. 13 represents the British state of the species, stout and somewhat globose, dredged at Scarborough; and that at Fig. 14, more depressed, with the anterior side slightly rostrate, is its eastern analogue, collected by Mr. Cuming in the Bay of Manila, where it is not uncommon.

LUCINA.—PLATE III.

Species 15. (Mus. Cuming.)

LUCINA VENUSTA. *Luc. testâ subgloboso-orbiculari, centriconi, subequilateri, radiatim multicoctatâ, costis tenuibus, numerosis, in parte medio antica subobsoletis, lineis transversis impressis undique undulato-sculptis, lunulâ oblongâ, cardinis dentibus centralibus subprominentibus, lateralibus parvis subobsoletis; albi.*

THE GRACEFUL LUCINA. Shell somewhat globose orbicular, ventricose, nearly equilateral, radiately many-ribbed, ribs fine, numerous in the part anterior

to the middle, rather obsolete, undulately sculptured throughout with transverse impressed lines, lunule oblong, central teeth of the hinge rather prominent, lateral teeth small, nearly obsolete; pure white.

PHILIPPI, *Abbild. und Besch. Conch.* vol. ii. p. 206. *Luc.* pl. 1. f. 2.

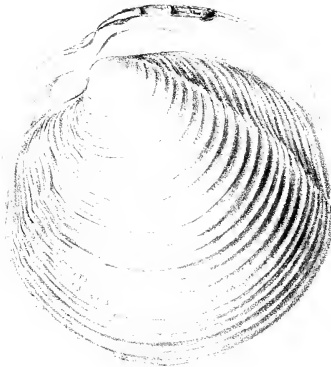
Hab. Bay of Manila (sandy mud, shallow water); Cuming.

An elaborately carved ventricose shell, perfectly white, without any indication of colouring, and with very much the aspect of a *Cardium*.

5

16 a

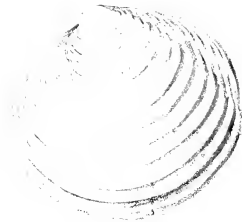
16 1



17

18 a

19



20

18 b

LUCINA.

PLATE IV.

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

LUCINA BARBATA. *Luc. testā orbiculari, planulata, inequilaterali, posticē excavato-angulata, levigata, liris incavati subradē adalā, lunulā laevodato-ovulata, profunde excavatā, dentibus callosis, subobsoletis; semipellucidis-albā, epidermide fibrosā hoc illic adalā.*

THE BEARDED LUCINA. Shell orbicular, rather flattened, inequilateral, posteriorly excavately angled, smooth, rather rudely marked with lines of growth, lunule lanceolately heart-shaped, deeply excavated, teeth callous, somewhat obsolete; semitransparent white, covered here and there with a fibrous epidermis.

Hab. — ?

The light fibrous epidermis of this species is a very characteristic feature.

Species 17. (Mrs. Cuming.)

LUCINA ANNULATA. *Luc. testā orbiculari, subplanulata, inequilaterali, concentricē laminato-lirata, liris acutis, erectis, interstitiis concentricē striatis, lunulā laevodato-ovata, subprofunde excavatā; semipellucidis-albā.*

THE ANNULATED LUCINA. Shell orbicular, rather flattened, inequilateral, concentrically lamately ridged, ridges sharp, erect, interstices concentrically striated, lunule lanceolately ovate, rather deeply excavated; semitransparent white.

Hab. California?

A thin delicate blue-white shell, sculptured with sharp circular ridges.

Species 18. (Mrs. Cuming.)

LUCINA PHILIPPINARUM. *Luc. testā orbiculari, eix inequilaterali, posticē excavato-angulata, concentricē lirata, liris subacutis, corrugatis, unne distinctis, unne annerosis, confortabilibus, lirarum interstitiis concentricē elevato-striatis, lunulā eix adalā, cardine dentibus centralibus nullis, lateralibus callosis, ferē obsoleteis albā, liris subtilibus fuscescentibus ab umbonibus radiantibus pallide linctis, epidermide lactē adalā, umbonibus plus minusve ovatis.*

THE PHILIPPINE LUCINA. Shell orbicular, inequilateral, posteriorly excavately angled concentrically

ridged, ridges rather sharp, corrugate, now distant, now numerous and closer, interstices between the laminae concentrically sculptured with raised striae, scarcely any humle, hinge destitute of central teeth, lateral teeth callous, almost obsolete; white, faintly marked with fine brownish lines, radiating from the umbos, covered with a cream-coloured epidermis, umbos more or less eroded.

HANLEY, Species of Shells.

Hab. Bay of Manila and Singapore (in sandy mud at the roots of Mango-trees); Cuming.

This fine species, with its irregular corrugate sculpture, epidermis, and eroded umbos, has externally the general aspect of a *Cyrenus*.

Species 19. (Mrs. Cuming.)

LUCINA ANATELLINOIDES. *Luc. testā transversē ovata, laeviculā, eix inequilaterali, anticē subrostrata, posticē obsolete excavato-angulata, minutissime decussatim striatā, lunulā parvā, laevodato-oblongā; albā.*

THE ANATELLA-LIKE LUCINA. Shell transversely ovate, rather thin, scarcely inequilateral, anteriorly subrostrate, posteriorly obsolete excavately angled, very minutely decussately striated, humle small, lanceolately-oblong; whitish.

Hab. West Indies.

Distinguished by its *Laetivella*-like form. The interior of the shell has some slight tinge of colouring.

Species 20. (Mrs. Cuming.)

LUCINA SILICATA. *Luc. testā orbiculari, depressiusculā, anticē subconspicue excavato-angulata, concentricē irregulariter acutē subcicatā, lunulā parvā; semipellucidis-albā.*

THE GROOVED LUCINA. Shell orbicular, rather depressed, anteriorly rather conspicuously excavately angulated, concentrically irregularly sharply grooved, humle small; semitransparent white.

Hab. — ?

Though a pellucid white shell, it is of rather solid substance, very closely sharply grooved throughout.



LUCINA.

PLATE V.

Species 21. (Mus. Cuming.)

LUCINA OVUM. *Luc. testâ transverse ovata, tenui, ventricosâ, inequilateralâ, anticè subrostratâ, concentricè tenuissimè superficialiter striatâ, lunulâ lanceolato-cordatâ, circ concavâ, cardiacâ tenui, edentulâ; albâ.*

THE EGG LUCINA. Shell transversely ovate, thin, ventricose, inequilateral, subrostrate anteriorly, conspicuously very thinly superficially striated, lunule lanceolately cordate, but little concave, hinge thin, toothless, white.

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

The *Lucinae* represented at Fig. 21 to 24 belong to a peculiar type, of which the shell is very thin and ventricose, without colour or pattern of sculpture, the hinge toothless, and the ligament developed internally across the posterior dorsal junction of the valves.

Species 22. (Mus. Cuming.)

LUCINA TUMIDA. *Luc. testâ suborbiculari, globosâ, inequilateralâ, lunulâ, tenuissimâ, anticè subrostratâ, concentricè subtilissimè superficialiter striatâ, striis impressis radiantibus exiliter decussatâ, lunulâ ovato-cordatâ, circ impressâ, cardiacâ edentulâ; albâ.*

THE SWOLLEN LUCINA. Shell nearly orbicular, globose, inequilateral, swollen, very thin, subrostrate anteriorly, concentrically very finely superficially striated, faintly decussated with radiating impressed striae, lunule ovately cordate, but little impressed, hinge toothless; white.

Hab. ———?

More globose and swollen than the former, lunule broader, and faintly rayed throughout with impressed striae.

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

LUCINA PHILIPPANA. *Luc. testâ transverse orbiculari, valde inequilateralâ, tenuiculâ, inflatâ, concentricè rugoso-striatâ, cuneatâ, lunulâ circ anillâ; luteâ, epidermide fuscosecente ad latera et versus marginem ventralem indatâ.*

PHILIPPI'S LUCINA. Shell transversely orbicular, very

inequilateral, rather thin, inflated, concentrically roughly striated, wrinkled, scarcely any lunule. cream-colour, covered at the sides and towards the ventral margin with a light brown epidermis.

Lucina edentula, Philippi (not of Lamarck).

Hab. ———?

Dr. Philippi considers that this is the species originally described by Linnaeus as *Venus edentula*; I do not, however, concur with this opinion. The term "subdiaphana," from the Linnaean description in Mus. Ludov. Uric. reg. p. 508, will not apply to the shell under consideration, which is of rather an opaque white, more or less covered with epidermis. The description being very indefinite throughout, and applicable to half a dozen species, I have retained the name "*edentula*" for that which is undoubtedly the species so acknowledged by Chemnitz and Lamarck.

Species 24. (Mus. Cuming.)

LUCINA PILA. *Luc. testâ suborbiculari, tenui, inflatâ, valde globosâ, subaequilateralâ, concentricè rugoso-striatâ, lunulâ ovatâ, impresso-concavâ; sordide albâ, epidermide tenui marginem ventralem versus indatâ.*

THE BALL LUCINA. Shell nearly orbicular, thin, inflated, extremely globose, nearly equilateral, concentrically roughly striated, lunule ovate, impressively concave, dead white, covered with a thin epidermis towards the ventral margin.

Hab. ———?

Distinguished by its very globose form and hollow lunule.

Fig. 25. (Mus. Cuming.)

The shell here figured proves to be a globose variety of *L. edentula*.

For Sp. 25, see Pl. IX.

Species 26. (Mus. Cuming.)

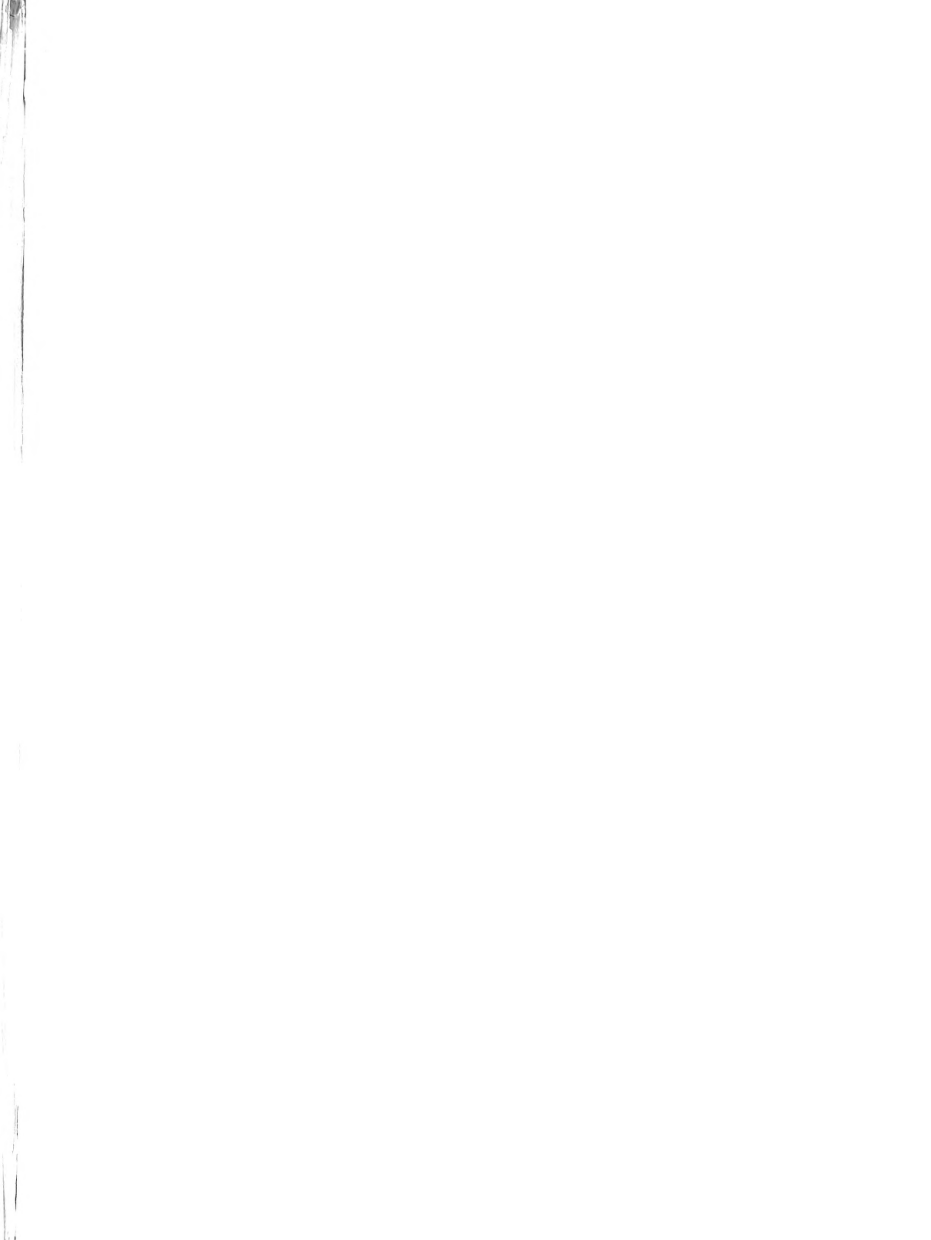
LUCINA MALUM. *Luc. testâ suborbiculari, luteâ squamulâ, concentricâ, anticè leviter excavatâ, deinde subrostratâ, concentricè creberrimè aculeo-liriatâ, lunulâ lute ovatâ, concavâ; semipellucido-albâ, intere ciliè rufescente-crucoâ.*

LUCINA.—PLATE V.

THE GOLDEN-APPLE LUCINA. Shell nearly orbicular, broader than high, ventricose, slightly excavated anteriorly, then substrate, concentrically very closely sculptured with sharp stria-like ridges, lunule broadly ovate, concave; semitransparent-white, brightly stained within with reddish saffron-colour.

Hab. Island of Ticao Philippines.

This very delicate and richly-coloured species is distinguished from *L. edentata*, to which it is nearest allied, by its conspicuous broadly ovate lunule.





LUCINA.

PLATE VI.

Species 27. (Fig. a, b, Mus. Cuming.)

LUCINA CELATA. *Luc. testâ globosâ, crassissimâ, lunulâ, concentricè striatâ, peculiariter undato-celatâ et erosa, cardine dentibus centralibus duobus angustis, quarum una prominulâ erectâ bifidâ in utroque valvâ; albâ.*

THE CARVED LUCINA. Shell globose, rather thick, swollen, concentrically striated, peculiarly carved and eroded in a wavy manner, hinge composed of two central teeth, one of which is rather prominent, erect, and bifid in each valve; white.

Hab. Island of Muerte, Bay of Guayaquil (dredged from a depth of about eleven fathoms); Cuming.

This is a remarkable shell, and belongs apparently to the genus *Diplodonta*, of which our British *Lucina rotundata* is the type; it has, however, the narrow oblong posterior muscular scar. The hinge is characterized by a peculiar erect bifid tooth, and externally the valves are carved with a curious zigzag pattern upon an opaque eroded ground.

Species 28. (Mus. Cuming.)

LUCINA VIRGO. *Luc. testâ subquadrato-orbiculari, crassâ, solidâ, posticè sulco conspicuè excavatâ, anticè lunulâ angulâ latè cordatâ impressâ, concentricè subtilissimè liratâ, liris tenuibus, membranaceis; semipellucido-albâ, epidermide tenui corneâ indatâ.*

THE VIRGIN LUCINA. Shell somewhat squarely orbicular, thick, solid, posteriorly conspicuously excavated with a groove, anteriorly with a large broadly cordate impressed lunule, concentrically very finely ridged, ridges thin, membranaceous; semi-transparent white, covered with a thin horny epidermis.

Hab. ———?

Resembling *L. columbella*, but more depressed, and characterized by a simple, and therefore different sort of epidermis. From *L. Pennsylvaniaica* it differs in having a broader cordate lunule.

Species 29. (Mus. Cuming.)

LUCINA PENNSYLVANICA. *Luc. testâ subquadrato-orbiculari, crassâ, solidâ, posticè sulco conspicuè excavatâ,*

anticè lunulâ angulâ oblongo-cordatâ impressâ, concentricè subtiliter liratâ, liris tenuibus, membranaceis. albâ, epidermide tenui corneâ, liris super hic illic peculiariter quadrato-squarulatâ, indatâ.

THE PENNSYLVANIAN LUCINA. Shell somewhat squarely orbicular, thick, solid, conspicuously excavated on the posterior side with a groove, anteriorly with an oblong-cordate impressed lunule, concentrically very finely ridged, ridges thin, membranaceous; white, covered with a thin horny epidermis, which is peculiarly quadrate-squarulate here and there.

Fans Pennsylvaniaica, Linnæus, Syst. Nat. p. 1134.

Lucina Pennsylvaniaica, Lamarck.

Hab. Jamaica; Gosse.

This species presents a singular appearance, from the circumstance that the horny epiderm, composing the concentric ridges, turns over here and there towards the umbos in scales, which are mostly square, and look like solid particles deposited in the interstices.

It is very much to be doubted whether the *Lucina Pennsylvaniaica* really inhabits the shores from whence it derives its name; should that not be the case I would propose to call it *L. grandinata*. The specimen here figured was collected by Mr. Gosse, at Jamaica.

Species 30. (Mus. Cuming.)

LUCINA COLUMBELLA. *Luc. testâ globosâ, crassissimâ, solidâ, posticè sulcato-excavatâ, anticè lunulâ perangulâ cordatâ impressâ, concentricè multilicatâ, liris hercibus subtilissimis; albâ, epidermide crassâ arcuè liratâ indatâ.*

THE LITTLE DOVE LUCINA. Shell globose, very thick, solid, posteriorly sulcately excavated, anteriorly impressed with a very large cordate lunule, concentrically many-ridged, ridges short and rather obtuse, white, covered with a thick compactly-ridged epidermis.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 230.

Lucina Adamsoni, D'Orbigny.

Hab. Canary and Cape de Verd Islands. Senegal.

In this species the epidermis is formed on the ridges in stout closely-compact strips.

Species 31. (Mus. Cuming.)

LUCINA AURANTIA. *Luc. testâ subquadrato-orbiculari, levissimâ, crassissimâ, solidâ, posticè sulcato-excavatâ, antice leviter aequali amplâ laticeordatâ impressâ, concentricè obscure levatâ, iris leucibus, subrotundis, irregularibus: albâ, atropurpureo versus intus cætesque viride efflorescente-aurantâ, epidermide rix nullâ.*

THE ORANGE-TINGED LUCINA. Shell somewhat squarely orbicular, swollen, very thick, solid, posteriorly sulcately excavated, anteriorly impressed with a large broadly cordate lunule, concentrically obscurely ridged, ridges thin, rather rude and irregular; white, bright reddish-orange within and without towards the margins, with scarcely any epidermis.

DESHAYES, *Ann. sans. vert.* vol. vi. p. 236.

Hab. West Indies.

In form this species is very similar to the preceding, wanting its characteristic epidermis.

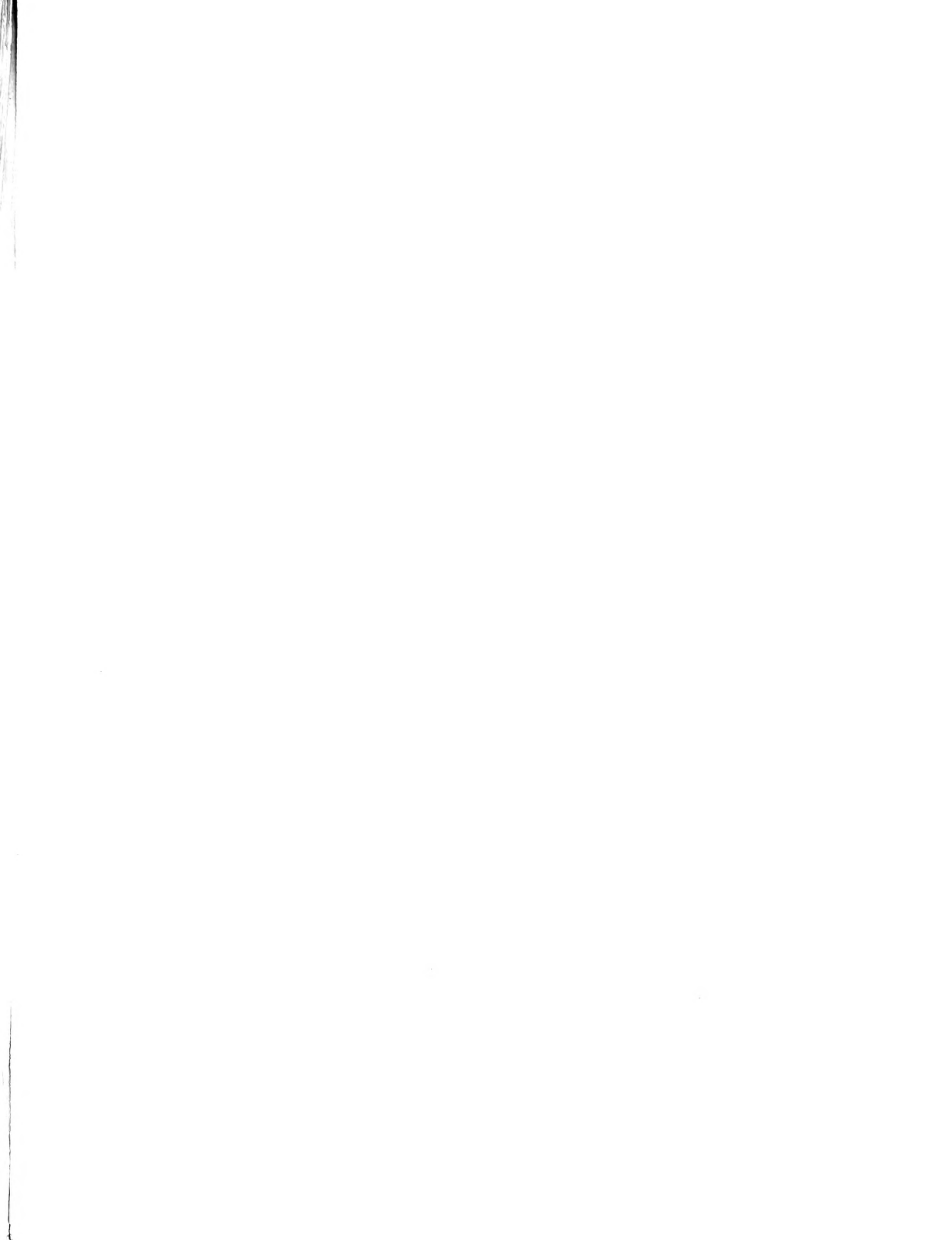
Species 32. (Mus. Cuming.)

LUCINA SPECIOSA. *Luc. subquadrato-orbiculari, crassâ, depressâ, posticè sulcato-excavatâ, antice leviter aequali elongatè cordatâ impressâ, concentricè levatâ, iris leucibus, membranaceis: albâ, epidermide carnea levatâ.*

THE HANDSOME LUCINA. Shell somewhat squarely orbicular, thick, rather depressed, posteriorly sulcately excavated, anteriorly impressed with a large elongately cordate lunule, concentrically ridged, ridges thin, membranaceous; white, covered with a horny epidermis.

Hab. Red Sea.

The epiderm ridges of this beautiful species are not turned back towards the umbos as in *L. Pennsylvanica*, but incline forwards. In other respects it bears a very close resemblance to that species, which, as coming from so remote a locality, is extremely curious.





34



35



35 A



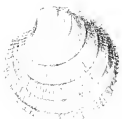
36



36 A



37



37 A



38



38 A



39

LUCINA.

PLATE VII

Species 33. (Fig. 33, 37, and 38 *a, b*, Mus. Cuming.)

LUCINA TUBULA. *Luc. testâ suborbiculari, umbones versus antice inclinata, depresso-concavâ, radiata tenui-costatâ, costis obtusis, ad latera divaricatis, striis concentricis elevatis creberrimâ et subtilissimâ decussatis, albida, interlinea rosâ aut flavicula.*

THE RUFFON LUCINA. Shell nearly orbicular, inclined anteriorly towards the umbones, depressly convex, radiately finely ribbed, ribs obtuse, divaricate at the sides, very closely and finely decussated with concentric raised striae, whitish, sometimes pink or yellowish.

Hab. St. Elena, West Columbia (from sandy mud at a depth of about six fathoms); and Islands of Burias and Ticao, Philippines (in sandy mud at low water), Cuming.

The seven allied varieties represented in this plate belong to two species, the present of which differs mainly from the following in the extreme lateral ribs divaricating off from the plan of radiation

Species 34. (Fig. 34 and 35 *a, b*, Mus. Cuming.)

LUCINA PLATEA. *Luc. testâ transverse orbiculari, depresso-concavâ, radiata tenui-costatâ, costis obtusis, interdum duplicatis, striis elevatis creberrimâ squamulâ decussatis; albida.*

THE COMB LUCINA. Shell transversely orbicular, depressly convex, radiately finely ribbed, ribs obtuse, sometimes duplicate, very closely squamately decussated with raised striae; whitish.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 230.

Hab. Island of St. John, West Indies; Hartvig. Lord Hood's Island (in the crevices of wells); Cuming.

More depressed and rather more transversely orbicular than the *L. flabula*, whilst the extreme lateral ribs do not divaricate off as in that species.

For Sp. 35, 37, and 38, see Pl. X.

(Species 36, Mus. Cuming.)

LUCINA ROTUNDATA. *Luc. testâ transverse subquadrata, tumida, valvâ inequaliterâ, levigatâ, huicis incrassatis hic illic notatâ, lateribus simplicibus, tonatâ albi.*

cardine dentibus centralibus duobus, quarum unâ bifida in utroque calce, albidâ, epidermide tenui partim indurâ.

THE ROUNDED LUCINA. Shell transversely subsquare, swollen, very inequilateral, smooth, marked here and there with lines of growth, sides simple, no humle, hinge with two central teeth in each valve, one of which is bifid; whitish, partially covered with a thin epidermis.

TURTON, Couch. Dythra Brit. p. 114. pl. 7. f. 3.

Psammobian rotundata, Fleming.

Diplodonta rotundata, Philippi.

Eadem, *Diplodonta dilatata*, Philippi.

Hab. Mediterranean and Southern shores of Britain.

This species, having no ribs, humle, or lateral excavation, is far removed in external character from the type of *Lucina*, whilst the hinge is distinguished as in the case of *L. calota*, by a conspicuous bifid tooth. There are several other species referred to *Lucina* in this monograph with a similar characteristic dentition.

Species 39. (Mus. Cuming.)

LUCINA SPINIFERA. *Luc. testâ longitudinaliter ovata, subcompressâ, umbones versus subtriangulâ, concentricâ creberrimâ laminali-striatâ, striis ad latera elevatis, per marginem posteriorem spinosis-squamatis, arcu ligamentâ lanceolato-plumbeâ, umbonibus compressis, lamellâ oblongo-ovata, peculiariter excavatâ; sordidâ albi, ferruginâ tinctâ.*

THE SPINY LUCINA. Shell longitudinally ovate, rather compressed, inclined to triangular towards the umbones, concentrically very closely laminally-striated, striae more raised at the sides, spinous-squamate along the posterior margins, arc of the ligament lanceolately flattened, umbones compressed, humle oblong-ovate, peculiarly excavated; dull white, rust-stained.

Lucina spinifera, Montagu, Test. Brit. p. 577, pl. 17. f. 1.

Myrtea spinifera, Turton.

Lucina spinifera, Hanley.

Lucina Hiattoides, Philippi.

Hab. Mediterranean and Southern shores of Britain. Ireland. North Scotland. Norway.

The nearest representative of *L. spinifera* in tropical

seas, so far as the external character of the shell is concerned, occurs in certain species of *Artemis*, which have the same flattened ligament-area, and posterior lateral scales more typically developed. There is, however, no indication of the internal lanceolate triangular sinus of *Artemis* in the shell under consideration.

Species 40. (Mus. Cuming.)

LUCINA FUNICULATA. *Luc. testā oblongo-quadratā, tenuiculā, posticē angulato-excavatā, anticē excavatā, lunulā*

cordatā minutā profundā impressā, concentricē liriventibus funiculatā; sordidē albā.

THE CORDED LUCINA. Shell oblong-quadrate, rather thin, posteriorly angularly excavated, anteriorly slightly excavated and impressed with a small deep cordate lunule, concentrically corded with fine ridges: dull white.

Hab. Bay of Honduras: Dyson.

Belonging to the same type as *L. Jamaicensis* of the neighbouring sea.



LUCINA.

PLATE VIII.

Species 41. (Mus. Cuming.)

LUCINA LUCOMA. *Luc. testâ orbiculari, planicoarceâ, anticè superficialiter excavatâ, lunulâ oblongâ, parvâ, subprofundâ, concentricè lineis increcatis rudè notatâ, operculo-albâ, quasi crassâ.*

THE BLEACHED LUCINA. Shell orbicular, flatly convex, superficially excavated on the anterior side, with the lunule oblong, small, and rather deep, concentrically rudely marked with lines of growth, opaque white, as if eroded.

FURTON, Couch, *Dythyra* Brit. p. 113. pl. 7. f. 8

Tellina lactea, Pulteney.

Lucina lactea, Lamarck.

Lucina Amphiletaoides, Deshayes.

Amphileta Lucinoides, Lamarck.

Loripes lactea, Fleming.

Hab. Mediterranean and the British Islands (from shallow water to a depth of eighty fathoms); Forbes and Hailey

The deep internal position of the ligament of this well-known species, induced Lamarck to place it in the genus *Amphileta*.

Species 42. (Mus. Cuming.)

LUCINA OBLIQUA. *Luc. testâ suborbiculari, anticè obliquè inclinatâ, solidiusculâ, striis concentricis et radialibus nudiq; creberrimè decussatâ, eardine dentibus duobus parvis centralibus et duobus hecibus erectis subdistantibus lateralibus in utroque cuneâ; albida.*

THE OBLIQUE LUCINA. Shell nearly orbicular, anteriorly obliquely inclined, rather solid, very closely decussated throughout with radiating and concentric striae, hinge with two small central teeth and two rather distant short erect lateral teeth in each valve; whitish.

Hab. Chusan; H. Benson.

The decussated sculpture of this obliquely inclined species is very close and obtuse; and the hinge is characterized in each valve by two widely separated erect lateral teeth.

Species 43. (Mus. Cuming.)

LUCINA JANEIRENSIS. *Luc. testâ subquadrato-orbiculari, gibbosâ, lunulâ, concentricè rudè striatâ; albida.*

THE JANIRO LUCINA. Shell somewhat squarely orbicular, gibbous, swollen, concentrically rudely striated, whitish.

Hab. Rio Janeiro.

A gibbous shell of very simple character, without any lunule.

Species 44. (Mus. Cuming.)

LUCINA OCHRACEA. *Luc. testâ orbiculari, convexâ, sub-Pectiniforâ, ad latera superficialiter excavatâ, radialibus creberrimè tenuitatâ, lineis ad latera distantioribus, concentricè subtilissimè lunulatâ; opaco-luteâ.*

THE YELLOW LUCINA. Shell orbicular, convex, somewhat Pecten-shaped, superficially excavated at the sides, radiately very closely finely ridged, ridges more distant at the sides, concentrically very finely laminated; opaque yellow.

Hab. — ?

This species is stained within and without with a peculiar opaque yellow, which has the appearance of having been applied artificially, but that I have seen other specimens, besides the one figured, similarly coloured.

Species 45. (Mus. Cuming.)

LUCINA SCABRA. *Luc. testâ orbiculari, convexâ, sub-Pectiniforâ, ad latera subexcavatâ, radialibus tenuiteratâ, lineis alternatim majoribus, nudiq; subrectis squamatis, lunulâ elongatâ-cordatâ, subprofundè impressâ; scapellucido-albâ.*

THE ROUGH LUCINA. Shell orbicular, convex, somewhat Pecten-shaped, slightly excavated at the sides, radiately finely ridged, ridges alternately larger, imbricately squamate throughout, lunule elongately cordate, rather deeply impressed; semitransparent white.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. vi. p. 227.

Hab. Bay of Mexico.

The radiating ridges of this species are characterized throughout with scales, after the manner of *Lina squamosa*, and differ from those of the following in having no concentric sculpture.

Species 46. (Mus. Cuming.)

LUCINA MURICATA. *Luc. testâ orbiculari, concentricâ, sub-Pecteniformi, ad latera subconcentricâ, liris radiatibus et concentricis aulique creberrimè cancellatis, liris ad latera distantioribus et muricatis; albida, interdum ferugineo pallide tinctâ.*

THE PRICKLY LUCINA. Shell orbicular, convex, somewhat Pecten-shaped, slightly excavated at the sides, very closely cancellated throughout with radiating and concentric ridges, which are more distant from each other at the sides, and prickly; white, sometimes faintly tinged with rust.

Tellina muricata, Chemnitz, Conch. Cab. vol. xi. pl. 199. f. 1945. 6.

Hab. Tumbes, Peru (in soft mud at a depth of eleven fathoms); Cuming.

Distinguished from the preceding by its concentric sculpture, and prickly, rather than scaly, ridges

Species 47. (Mus. Cuming.)

LUCINA DIVARICATA. *Luc. testâ orbiculari, subglobosâ, laevigatâ, bifariam sulcato-striatâ, striis ante medianam regulariter divaricatâ, marginibus incrementi denticulatis, præcipuè ad latus posteriorem; pellucido-albâ.*

THE DIVARICATE LUCINA. Shell orbicular, somewhat globose, smooth, groove-striated in two ways, striae regularly divaricate from before the middle, edges of growth denticulated, especially on the posterior side; transparent white.

Tellina divaricata, Linnaeus, Syst. Nat. 12th edit. p. 1120

Lucina divaricata, Lamarck.

Tellina dentata, Wood.

Hab. West Indies. Cape York, North Australia; Jukes.

Mainly distinguished from the allied species which follow, by the denticulated borders, which have formed at

intervals the margin of the shell, and which are most prominent on the posterior side.

Species 48. (Mus. Cuming.)

LUCINA ORNATA. *Luc. testâ suborbiculari, gibbosâ, antice subobliquè inclinatâ, bifariam sulcato-striatâ, striis ante medianam regulariter divaricatis, marginibus incrementi subobtusè denticulatis, præcipuè ad latus posteriorem; scutipellucido-albâ.*

THE ORNAMENTED LUCINA. Shell nearly orbicular, gibbous, rather obliquely inclined on the anterior side, groove-striated in two ways, striae regularly divaricate from before the middle, margins of growth rather obtusely denticulated, especially on the posterior side; scutitransparent white.

Hab. — ?

The detail of sculpture is the same in this species as in the preceding, except that the margins of growth are less conspicuously denticulated; the shell differs, however, materially in form, being inclined obliquely on the anterior side, whilst it is uniformly of smaller size.

Species 49. (Mus. Cuming.)

LUCINA EBURNEA. *Luc. testâ orbiculari, globoso-concreta, solidiusculâ, bifariam sulcato-striatâ, striis ante medianam regulariter divaricatis, pellucido-albâ.*

THE IVORY LUCINA. Shell orbicular, globose-convex, rather solid, groove-striated in two ways, striae regularly divaricate before the middle; transparent white.

Hab. St. Elena, West Columbia and Panama (in sandy mud at a depth of eleven fathoms); Cuming.

More globose in form than the two preceding species, with the divaricating grooves rather more distant from each other, more circularly disposed at the sides, and not denticulated at the margin





14



16



22



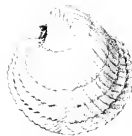
31



22



33



36



33



36



37

LUCINA.

PLATE IX

Species 14. (Mus. Cuming.)

LUCINA NOVO-ZELANDICA. *Luc. testâ subglobosâ, inequilaterali, posticâ truncatâ, concentricè rufè irregulariter striatâ, lunulâ nullâ, cardiacâ dentibus centralibus duobus in utroque valvâ, quoniam unâ bifidâ; albidâ, epidermide fuscovirescente indutâ.*

THE NEW ZEALAND LUCINA. Shell somewhat globose, inequilateral, swollen posteriorly, concentrically rudely irregularly striated, no lunule, hinge with two central teeth in each valve, one of which is erect and bifid, whitish, covered with a light brown epidermis.

Hab. New Zealand.

The hinge of this species is distinguished by a central bifid tooth, characteristic of the genus *Diplobolus*.

Species 25. (Mus. Cuming.)

LUCINA CORNEA. *Luc. testâ Cardium-formâ, paululum altiore quam longâ, depressosculâ, lunulâ nullâ, concentricè impresso-striatâ, cardiacâ dentibus centralibus duobus in utroque valvâ, quoniam unâ bifidâ; albidâ, epidermide caracè pallidè olivaceâ nitente indutâ.*

THE HORNY LUCINA. Shell Cardium-shaped, a little higher than long, rather depressed, no lunule, concentrically impressly striated, hinge with two central teeth in each valve, one of which is bifid; whitish covered with a light olive shining horny epidermis.

Hab. Gulf of Nicoya (in coarse sand at a depth of from ten to thirteen fathoms); Cuming.

The first of a small group included in this plate, all having a bifid tooth nearly similar to that of *Diplobolus*, but more especially characterized by the presence of a shining horny epidermis.

Species 50. (Mus. Cuming.)

LUCINA NITENS. *Luc. testâ depresso-orbiculari, sub-Cardium-formâ, posticâ subobliquè inclinatâ, concentricè impresso-striatâ, lunulâ nullâ, cardiacâ dentibus centralibus duobus in utroque valvâ, quoniam unâ bifidâ; albidâ, epidermide caracè olivaceâ nitente indutâ.*

THE SHINING LUCINA. Shell depressly orbicular, somewhat Cardium-shaped, posteriorly rather obliquely inclined, concentrically impressly striated, no lunule,

hinge with two central teeth in each valve, one of which is bifid; whitish, covered with a shining horny epidermis.

Hab. Isle of Muerte, Bay of Guayaquil (in sandy mud at a depth of about eleven fathoms); Cuming.

Distinguished from the preceding by a more depressly orbicular form, which, though slight, appears to be characteristic.

Species 51. (Mus. Metcalfe.)

LUCINA ADANSONI. *Luc. testâ depresso-orbiculari, sub-equilateralî, concentricè levisstriatâ, lunulâ nullâ, cardiacâ dentibus centralibus duobus in utroque valvâ, quoniam unâ bifidâ; albidâ, epidermide levi caracè nitente, pallidè olivaceâ, plerumque medio ferrugineo-tinctâ, indutâ.*

ADANSON'S LUCINA. Shell depressly orbicular, nearly equilateral, concentrically finely striated, no lunule, hinge with two teeth in each valve, one of which is bifid; whitish, covered with a thin shining horny epidermis of a pale olive-colour, mostly rust-stained about the middle.

Le Filieu, Adanson.

Hab. Senegal.

Covered with the same shining horny epidermis which characterizes the two preceding species from Central America.

Species 52. (Mus. Hanley.)

LUCINA SARSI. *Luc. testâ subquadrato-orbiculari, inequilateralî, levisstriatâ, inflatâ, posticâ subcutâ, concentricè subtilissimè rufè striatâ, areâ ligamentali oblongo-ovalî, subexcavatâ, lunulâ oblongo-ovalî, lreter excavatâ, cardiacâ edentulatâ; albâ.*

SARS' LUCINA. Shell somewhat squarely orbicular, very thin, inflated, grooved on the posterior side, concentrically very finely rudely striated, area of the ligament oblong-oval, a little excavated, lunule oblong-oval, slightly excavated, hinge toothless, white.

Actius Sarsi, Löwen, Ind. Moll. Scandinav.

Hab. Sweden.

A very thin inflated toothless shell, differing from the tumid edentulate *Lucina* of Pl. V, by the characteristic oval excavated lunule and ligamentary area.

Species 53. (Mus. Hanley.)

LUCINA GLOBULARIS. *Luc. testâ subglobosâ, tenui, inflatâ, præcipuè circa umbones, levigatâ, aut concentricè irregulariter tenuistriatâ, lunulâ nullâ, cardine dentibus duobus centralibus in utraque valvâ; albidâ*

THE GLOBULAR LUCINA. Shell subglobose, thin, inflated, especially around the umbones, smooth or concentrically irregularly finely striated, no lunule, hinge with two central teeth in each valve; whitish.

LAMARCK. *Ann. sans vert.* (De-hayes' edit.) vol. vi. p. 231.

Hab. New Zealand

This shell in Mr. Hanley's cabinet is referred to the above-named Lamarckian species, on the authority of a continental collector from whom it was received.

Species 54. (Mus. Cuning.)

LUCINA GIBBA. *Luc. testâ globosâ, valvè gibbosâ, Isocardiaformâ, bifurcâ valvè subcaulis, liris convergato-undatis, ante umbonem divaricatis, interstitiis concentricè subtilissimè striatis, lunulâ parvâ, rotundato-cordatâ; albâ.*

THE GIBBOUS LUCINA. Shell globose, very gibbous, Isocardia-shaped, broadly grooved in two directions, ridges corrugately waved, divaricate before the middle, interstices concentrically very finely striated, lunule small, rotundately cordate; white.

GRAY. *Annals of Philosophy*, 1825, p. 136.

Tellina divaricata pauc. Chemnitz, *Conch. Cab.* vol. vi. pl. 13. f. 130.

Tellina sphaeroides. Courard

Hab. —?

This fine species may be readily distinguished by its very gibbous Isocardia-like form, and broad corrugate grooving.

Species 55. (Mus. Cuning.)

LUCINA SERICATA. *Luc. testâ subquadrato-orbiculari, posticè obliquè inclinatâ, tenui, depressâ, concentricè impresso-striatâ, lunulâ nullâ; semipellucido-albâ, epidermide coracè pallidè olivaceâ nitente indatâ.*

THE SILK-CLAD LUCINA. Shell somewhat squarely orbicular, inclined obliquely on the posterior side, thin, depressed, concentrically impressly striated, no lunule; semitransparent white, covered with a shining pale olive horny epidermis.

Hab. —?

This and the following species are of the same character as the second and third of this plate, differing, however, essentially in form.

Species 56. (Mus. Cuning.)

LUCINA TELLINOIDES. *Luc. testâ depresso-orbiculari, posticè subobliquè inclinatâ, concentricè subirregulariter et tenuissimè impresso-striatâ, lunulâ nullâ; semipellucido-albâ, epidermide coracè glaucante nitente indatâ.*

THE TELLINA-LIKE LUCINA. Shell depressly orbicular, rather obliquely inclined on the posterior side, concentrically rather irregularly and very finely impressly striated, no lunule; semitransparent white, covered with a shining yellowish-horny epidermis.

Hab. Isle of Muerte, Bay of Guayaquil (in sandy mud at a depth of about eleven fathoms); Cuning.

This and the allied species represented in this plate, should, doubtless, be arranged under a separate genus allied to *Diplobata*.

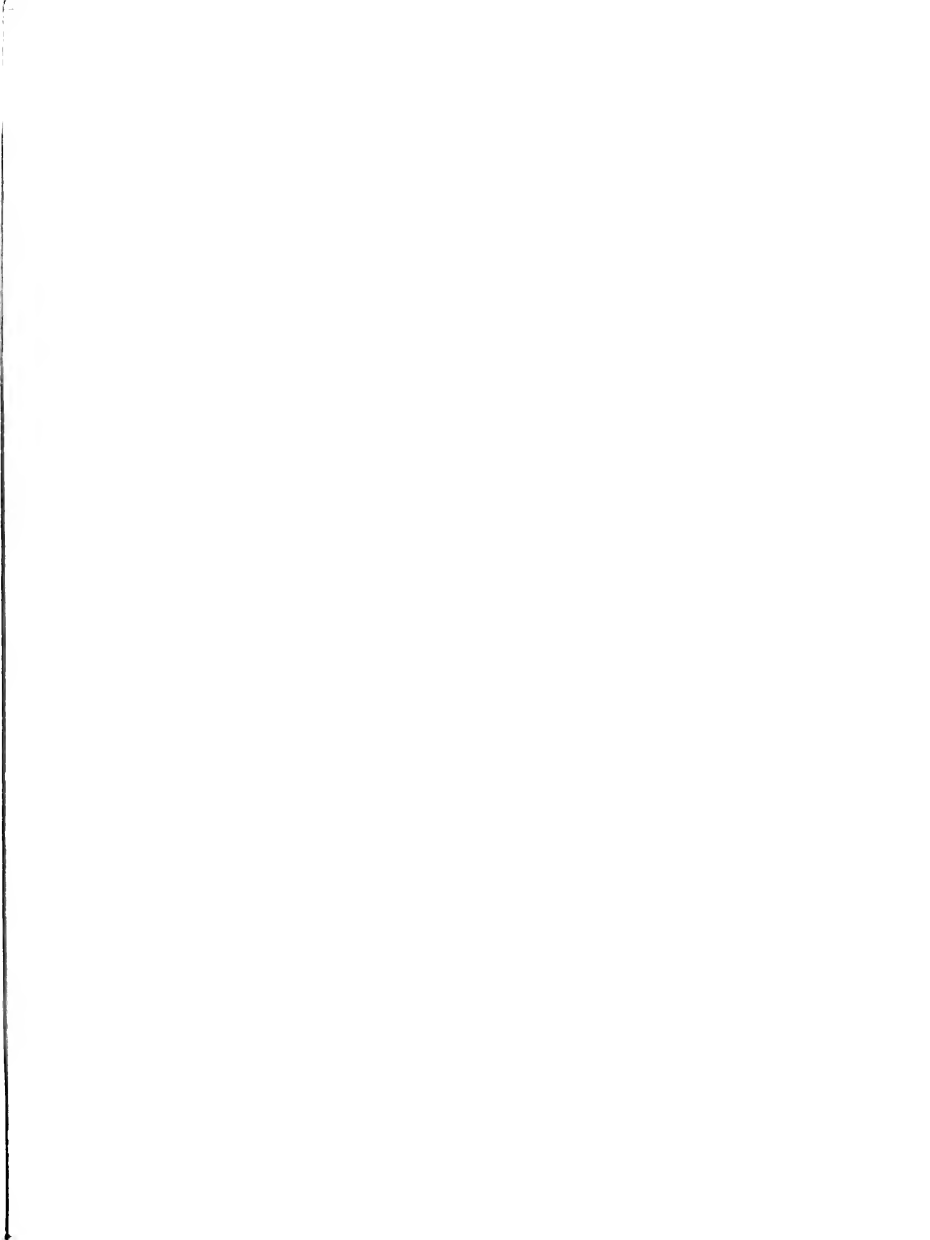
Species 57. (Mus. Cuning.)

LUCINA FRIABILIS. *Luc. testâ orbiculari, subequilaterâ, tenui, lunulâ, concentricè subirregulariter et tenuissimè striatâ, lunulâ nullâ; rosaceo-albâ, epidermide tenui coracè nitente indatâ.*

THE FRIABLE LUCINA. Shell orbicular, nearly equilateral, thin, swollen, concentrically rather irregularly and very finely striated, no lunule; pinkish-white, covered with a thin shining horny epidermis.

Hab. —?

Belonging to the same type as the preceding species, from which it differs specifically in being of a more rounded swollen form and of larger size.



Lucina. Pl. X.



37.



38.



39.



40.



41.



42.



43.



44.



45.



46.

LUCINA.

PLATE X.

Species 35. (Mus. Cuming.)

LUCINA BULLATA. *Luc. testâ globoso-ovato, trawi, inflatâ, lateribus subulatâ, concentricè subtilissimè striatâ, lunulâ vix nullâ, cardiacæ edentulâ; incrustato-albâ.*

THE LITTLE BUBBLE LUCINA. Shell globosely ovate, thin, inflated, slightly winged at the sides, concentrically very finely striated, scarcely any lunule, hinge toothless; flesh-tinged white.

Hab. —?

A very slight species partaking of the form and general character of *Cyrenoides*.

Species 37. (Mus. Cuming.)

LUCINA ANFILLARUM. *Luc. testâ subcordato-ovato, crassiusculâ, radiatim subobsoletè lirate, liris planis, subdistantibus, striis elevatis concentricis concinnavè chelatis, lunulâ parvâ, cordatâ; albâ, luteo lineatâ.*

THE WEST INDIA LUCINA. Shell somewhat cordately ovate, rather thick, radiately rather obsolete ridged, ridges flattened, rather distant, neatly latticed with concentric raised striae, lunule small, cordate; whitish, tinged with yellow.

Hab. Island of St. John's, West Indies; Hartvig.

Of an unusually gibbous cordate form, very neatly latticed throughout.

Species 38. (Mus. Cuming.)

LUCINA PECTEN. *Luc. testâ suborbiculari, obliquè productâ, valde inequilaterâ, compressâ, liris subtilibus radiatibus et concentricis densicollatâ, lunulâ lanceolato-oblongâ; lutescente-albâ.*

THE COMB LUCINA. Shell nearly orbicular, produced obliquely, very inequilateral, compressed, closely latticed with fine radiating and concentric ridges, lunule lanceolately oblong; yellowish-white.

LAMARCK. *Anim. sans vert.* (Deshayes' edit.) vol. vi. p. 230.

Hab. Mediterranean.

This, and not the shell described and figured at Sp. 31, appears to be the true *L. pecten* inhabiting the Mediterranean and coast of Senegal. For the former species from

the West Indies and the Pacific, I propose to substitute the name *L. occidentalis*.

Fig. 41 b. (Mus. Cuming.)

The shell here figured represents a larger and finer state than that given at Pl. VIII. of *L. leucoma*, Sp. 41.

Species 58. (Mus. Cuming.)

LUCINA OVULUM. *Luc. testâ globosâ, inflatâ, levigatâ, aut, sub lente, radiatim tenuissimè striatâ, lunulâ oblongo-cordatâ, superficiali, cardiacæ edentulâ; albâ, intus hic illic pallidè erodâ.*

THE LITTLE EGG LUCINA. Shell globose, inflated, smooth, or, beneath the lens, radiately very finely striated, lunule oblong-cordate, superficial, hinge toothless; whitish, tinged here and there with light saffron-colour.

Hab. Mauritius.

A light toothless shell similar to *L. bullata*, but more gibbous and truly globose.

Fig. 56 b. (Mus. Cuming.)

A small variety of the British *L. rotundata*.

Species 59. (Mus. Cuming.)

LUCINA LEUCOPHOTA. *Luc. testâ suborbiculari, crassiusculâ, concentricè rugoso-striatâ, lunulâ plenâ, vix nullâ, cardiacæ dentibus duobus dicerivatis, quorum uno duplicato, in utroque valvâ; sordide albâ, quasi erodâ, epidermide olivaceâ partim indatâ.*

THE RUSSET-GLAD LUCINA. Shell nearly orbicular, rather thick, concentrically roughly striated, lunule flattened, scarcely any, hinge composed of two divaricate teeth in each valve, one of which is duplicate; dead white, as if eroded, partially covered with an olive epidermis.

Hab. —?

This is rather a doubtful *Lucina*, of stout growth, and covered with an epidermis, which is not usual in the genus.

Fig. 39 *b*. (Mus. Cuming.)

An authentic specimen of Philipp's *Lucina Hiatellodes*, which proves to be identical with *L. spirifer*.

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

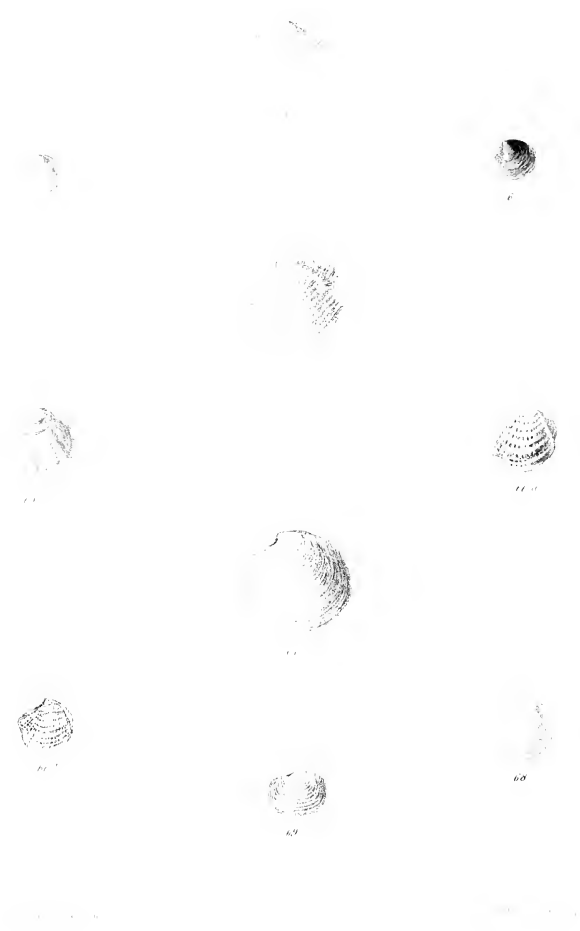
LUCINA ICTERICA. *Luc. testâ subtriangulo-orbiculari, solidâ, subcompressâ, concentricè truncato-striatâ, striis umbones versus plus minus obassis, sub lente minutissimè radiatim striatâ: lutescente-albâ.*

THE JAUNDICED LUCINA. Shell somewhat triangularly orbicular, solid, rather compressed, concentrically laminately striated, the striae being more or less abraded towards the umboes, beneath the lens very minutely radiately striated; yellowish-white.

Hab. — ?

In this species the ligament is situated in an oblique internal pit, as in the British *L. leucogaa*, partaking in that respect of the character of *Auriphidisma*.





LUCINA.

PLATE XI.

Species 61. (Mus. Cuming.)

LUCINA ARIFUTA. *Luc. testâ obliquè orbiculari, subaenipressâ, laevigatâ, striâs undulatis transverse excavatâ, lunulâ oblongo-ovalatâ; unâ pellucidâ-âlbâ.*

THE RIPPLED LUCINA. Shell obliquely orbicular, rather compressed, smooth, transversely engraved with wavy striae, lunule oblong-ovate; semitransparent white.

Cardium arcuatum, Montagu, T. & F. Brit. p. 85, pl. 3, f. 2.

Lucina arcuata, Fleming.

Tellina divaricata pars, Linnaeus.

Lucina divaricata, Forbes and Hanley.

Lucina eusant-ta, Philippi.

Hab. Mediterranean.

This is one, among many instances, in which two or three species were confounded by Linnaeus under one head. Irrespective of its small size, it differs from the true *L. divaricata* of the West Indies in not being denticulated on the posterior side, and in the waved transverse striae being less sharply divaricate.

Species 62. (Mus. Cuming.)

LUCINA FLEXOSA. *Luc. testâ subtriangulo-orbiculari, laevigatâ, posticè salicatâ, sulco latiusculo subgraculo ab umbone in atriqve radiâ radiatè, cardine deute unico subobscuro; albâ.*

THE FLEXUOUS LUCINA. Shell somewhat triangularly orbicular, smooth, grooved posteriorly, the groove being rather broad and deep, radiating in each valve from the umbo, hinge with a single obscure tooth; whitish.

Lucina sinuosa, Donovan, British Shells, vol. ii. pl. 12, f. 2.

Tellina flexuosa, Montagu.

Ampelodesma flexuosa, Lamarck.

Lucina sinuata, Lamarck.

Cyprina flexuosa, Turton.

Lucina flexuosa, Lovén.

Hab. Britain; Sweden; Massachusetts, U. S.

The accompanying figure of this species is taken from an American specimen, supplied by Dr. Gould. Upon our own shores it is of a more irregular and flexuous growth.

Species 63. (Mus. Cuming.)

LUCINA FERRUGINOSA. *Luc. testâ orbiculatâ, antestricque posticè obsolete salicatâ, cum atriâ obscure costulatâ, lunulâ les subpinnaculo-orbitâ; spiculatè ferruginæ-âlbâ.*

THE RUSTY LUCINA. Shell orbicular, somewhat oblique, posteriorly obsolete grooved, concentrically obscurely ribbed, umbones rather prominent; dirty rust-brown.

Forbes and Hanley, Brit. Moll. vol. ii. p. 60, pl. 31, f. 1.

Kelbia ferruginosa, Forbes.

Chorina ferruginosa, *obliquata*, and *Cyprina*

Jeffreys.

Hab. Crete and the Morea; Captains Graves and Spratt, Loch Fyne and Skye, North Britain (in mud at the depth of 120 fathoms); McAndrew.

This little species may be easily recognized by its thick ferruginous coating.

Species 64. (Mus. Cuming.)

LUCINA GEMMA. *Luc. testâ quadrato-oblongâ, pinnatè tenuissimâ, atriqve salicatâ et ulatâ, concavitate obscure pinnatâ, levissimè subtilissimè serratâ, ad latera squamato-pinnatâ; pellucidâ-âlbâ.*

THE GEM LUCINA. Shell squarely oblong, flattened, very thin, grooved and winged on each side, concentrically elegantly laminated, laminae very finely serrated, squamately produced at the sides; transparent white.

Hab. Loay, Island of Bohol, Philippines.

An exquisitely sculptured species, allied to *L. dealifera*.

Species 65. (Mus. Cuming.)

LUCINA DIGITALIS. *Luc. testâ subtriangulo-orbiculari, concavâ, atriqve obliquè circularitè striatâ-salicatâ albâ, rufa radiatâ, epidermide intercostâ indatâ.*

THE DIGITAL LUCINA. Shell somewhat triangularly orbicular, convex, obliquely circularly striately grooved throughout; whitish, rayed with red, covered with a yellowish epidermis.

Lamarck, *Anim. sans vert.* (Deshayes' edit.) vol. vi. p. 251.

Hab. Gibraltar; McAndrew.

Very characteristically engraved with fine grooves, ranging obliquely across the shell in a circular manner.

August, 1850.

Species 66. (Fig. *a, b*, Mus. Cuming.)

LUCINA PISCUM. *Luc. testâ globoso-cordatâ, solidâ, costis concentricis et radiatis densicubitatâ, interstitiis foveolatis, latere postico subolato, antico brevi, lunulâ parvâ, profunde excavatâ: albida.*

THE PEA LUCINA. Shell globose-ely cordate, solid, thickly latticed with concentric and radiating ribs, of which the interstices are pitted, posterior side grooved, anterior short lunule small, deeply excavated; whitish.

Hab. Port Essington; Jukes. Singapore (in sandy mud at the depth of seven fathoms): Cuming.

A small solid Isocardia-like species about the size and form of a pea, engraved with strong blunt latticed sculpture.

Species 67. (Mus. Cuming.)

LUCINA LENTICULA. *Luc. testâ orbiculari, depressusculâ, concentricis exherrensâ laminato-striatâ, lunulâ oblongo-cordatâ: albâ.*

THE LITTLE LENS LUCINA. Shell orbicular, rather depressed, concentrically very closely laminately striated, lunule oblong-cordate; white.

Hab. —: ?

Partaking very much of the form of *Ardenis*, but wanting the lanceolate pallial sinus which is characteristic of that genus.

Species 68. (Mus. Cuming.)

LUCINA CALCULUS. *Luc. testâ cordato-ovata, altiore quam longâ, crassiusculâ, levigatâ, politâ; nitide albâ.*

THE PEBBLE LUCINA. Shell cordately ovate, higher than long, rather thick, smooth, polished; shining white.

Hab. Gulf of Nicoya (dredged from among coarse sand at a depth of from ten to thirteen fathoms): Cuming.

A small smooth shining white shell of rather solid growth.

Species 69. (Mus. Cuming.)

LUCINA FABULA. *Luc. testâ oblongâ, planiusculâ, utriusque subulatâ, concentricè eleganter laminato-striatâ, area ligamenti lanceolato-planâ, lunulâ lanceolatâ, convexâ; pellucido-albâ.*

THE LITTLE BEAN LUCINA. Shell oblong, rather flattened, slightly winged on each side, concentrically elegantly laminately striated, area of the ligament lanceolately flattened, lunule lanceolate, convex, transparent white.

Hab. Batangas, Island of Luzon, Philippines (in coarse sand at a depth of nine or ten fathoms): Cuming.

Slightly produced on each side, and sculptured throughout with delicate concentric laminae.

LUCINA.

	Plate		Species.		Plate.		Species.
<i>Adansonii</i> , D'Orbigny	VI.		30	<i>Jamaicensis</i> , Reece	VIII.		43
<i>alba</i> , Turton	III.		13	<i>lactea</i> , Lamarck	VIII.		41
<i>Asaphidesmaoides</i> , Desh.	VIII.		41	<i>lenticula</i> , Reece	XI.		67
<i>Anatellinoides</i> , Reece	IV.		19	<i>leuconca</i> , Turton	VIII.		41
<i>annulata</i> , Reece	IV.		17	<i>leucophaeota</i> , Reece	X.		59
<i>Antillarum</i> , Reece	X.		37	<i>malum</i> , Reece	V.		26
<i>arcuata</i> (<i>Cardina</i>), Montagu	XI.		61	<i>muricata</i> (<i>Tellina</i>), Chemn.	VIII.		16
<i>argentea</i> , Reece	II.		6	<i>nitens</i> , Reece	IX.		50
<i>aurantia</i> , Deshayes	VI.		31	<i>Novo-Zelandica</i> , Reece	IX.		14
<i>barbata</i> , Reece	IV.		16	<i>obliqua</i> , Reece	VIII.		42
<i>bicornis</i> , Reece	II.		8	<i>occidentalis</i> , Reece	VII.		34
<i>borealis</i> (<i>Venus</i>), Linn.	III.		13	<i>ochracea</i> , Reece	VIII.		44
<i>bullula</i> , Reece	X.		35	<i>ornata</i> , Reece	VIII.		48
<i>carinata</i> , Reece	VI.		27	<i>ovulum</i> , Reece	X.		58
<i>calculus</i> , Reece	XI.		68	<i>ovum</i> , Reece	V.		21
<i>Childrevii</i> , Gray	III.		12	<i>pectea</i> , Lamarck	X.		38
<i>columbella</i> , Lamarck	VI.		30	<i>Pennsylvanica</i> (<i>Venus</i>), Linn.	VI.		29
<i>conantata</i> , Philippi	XI.		61	<i>Philippiana</i> , Reece	V.		23
<i>cornica</i> , Reece	IX.		25	<i>Philippinarum</i> , Hanley	IV.		18
<i>dentifera</i> , Jous	III.		10	<i>pila</i> , Reece	V.		24
<i>digitalis</i> , Lamarck	XI.		65	<i>pistum</i> , Reece	XI.		66
<i>divaricata</i> (<i>Tellina</i>), Linn.	VIII.		47	<i>punctata</i> (<i>Venus</i>), Linn.	I.		2
<i>divaricata</i> , Forbes & Hanley	XI.		61	<i>radula</i> , Lamarck	III.		13
<i>eburnica</i> , Reece	VIII.		49	<i>rotundata</i> , Turton	VII.		36
<i>edentula</i> (<i>Venus</i>), Chemn.	II.		9	<i>rugifera</i> , Reece	I.		1
<i>edentula</i> , Philippi	V.		23	<i>Sarsii</i> (<i>Lecteus</i>), Loeven	IX.		52
<i>exasperata</i> , Reece	I.		4	<i>scabra</i> , Lamarck	VIII.		45
<i>fabula</i> , Reece	XI.		69	<i>Senegalensis</i> , Reece	IX.		51
<i>ferruginosa</i> , Forbes & Hanley	XI.		63	<i>sericata</i> , Reece	IX.		55
<i>fibula</i> , Reece	VII.		33	<i>simplex</i> , Reece	III.		11
<i>flexuosa</i> (<i>Venus</i>), Donovan	XI.		62	<i>sinuata</i> , Lamarck	XI.		62
<i>friabilis</i> , Reece	IX.		57	<i>speciosa</i> , Reece	VI.		32
<i>funiculata</i> , Reece	VII.		40	<i>spinifera</i> (<i>Venus</i>), Montagu	VII.		39
<i>gemma</i> , Reece	XI.		64	<i>sulcata</i> , Reece	IV.		20
<i>gibba</i> , Gray	IX.		54	<i>Tellinoides</i> , Reece	IX.		56
<i>globularis</i> , Lamarck	IX.		53	<i>tigerina</i> (<i>Venus</i>), Linn.	I.		3
<i>Hortleoides</i> , Philippi	VII. and X.		39	<i>tumida</i> , Reece	V.		22
<i>ietrica</i> , Reece	X.		60	<i>venusta</i> , Philippi	III.		15
<i>interrupta</i> (<i>Cyth.</i>), Lamarck	II.		5	<i>virgo</i> , Reece	VI.		28
<i>Jamaicensis</i> (<i>Venus</i>), Chemn.	II.		7				

ERRATA.

- Sp. 31. For *L. pectea*, Lamarck, read *L. occidentalis*, Reece
 Sp. 51. For *L. Adansonii*, read *L. Sargalensis*, Reece

MONOGRAPH

OF THE GENUS

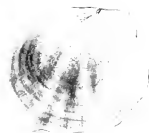
H E M I P E C T E N .

Much more eath to tell the stars on hy,

Albe they endless seeme in estimation,

Than to recount the sea's posterity :

So fertile be the floods in generation,—*Spenser*



HEMIPECTEN.

PLATE I.

GENUS HEMIPECTEN, Adams and Reeve.

Testa adhaerens, inaequaliter, irregularis, hyalina, cutri superiori valvæ simpliciter, posticè via auriculatâ, cutri inferiori valvæ simpliciter, posticè conspicuè auriculatâ, infra auriculam profundè sinuatâ et denticulatâ; cardine edentulo, ligamento leviter marginali, cartilagineo parvo in cavitate centrali.

Shell attached, inequivalve, irregular, hyaline, upper valve simple anteriorly, very slightly auriculated posteriorly, lower valve simple anteriorly, conspicuously auriculated posteriorly, deeply sinuated and denticulated beneath the auricle; hinge edentulate, ligament slightly marginal, with a small cartilage in a central cavity.

The subject of the present new genus, proposed by Mr. Arthur Adams and myself in the 'Mollusca of the Voyage of the Samarang,' is an inequivalve shell of the lamellibranchiate family *Pectinacea*, intermediate in its characters between *Pecten* and *Anomia*. Like *Anomia* it is a thin hyaline substance, adhering to some foreign body, and of an irregular growth, according to the inequalities of its place of attachment. Like *Pecten* the hinge consists of a slight marginal ligament, intersected in the middle by a small triangular cartilage, situated in the hollow of a superficial cavity in each valve. The under valve is distinguished by a conspicuous auricle on the posterior side, and beneath this is a sinus so deeply cut in the direction of the hinge-margin as to remind one of *Pecten*, especially when presented with the under valve closed upon the hollow of the upper one, as in Fig. 1 *b*, 2 *b*; and the margin of this sinus, as indicated in some of the *Pectens*, is furnished with a row of sharp erect denticles. The shell bears some resemblance to *Pecten*, from the circumstance of there being no corresponding sinus in the upper valve; but it is apparently only a character of resemblance, not one of affinity. The shell has no umbonal area, nor are the sides of either valve reflected.

The observations to be derived from the microscopic structure of *Hemipecten* which has been kindly exhibited to me by Dr. Carpenter, are, however, singularly contradictory to the views presented by its external characters. Of the two specimens collected, the texture and composition of both valves consist of a hyaline semi-perlaraceous lamina, presenting a series of closely-packed concentric lines, the intervals of which are minutely rayed with much finer lines. Submitted to the microscope, the

ditto valve in both specimens (Fig. 1 *a*, 2 *d*.) is penetrated by copious tubuli, a character in which the genus agrees with *Pecten* and with some species of *Lima*, and differs from *Pecten*. This tubularity Dr. Carpenter observed to exist also in the upper valve of the colourless specimen (Fig. 1 *c*), but not in the other (Fig. 2 *e*), so far as the Bryozoon upon its surface allows of an examination.

The upper valve of the coloured specimen (Fig. 2 *c*.) possesses a rudimental sculpturing over its entire surface, but as it may have received this from the parasite, and exhibits no other appreciable point of difference, we have not ventured to distinguish it specifically from the white specimen.

Species 1. (Fig. 1 and 2, Mus. Belcher.)

HEMIPECTEN FORBESIANUS. *Heav. testâ orbiculatâ, Anomiaeforini, tenuissimâ, hyaliâ, concentricè lineatâ, lineâ interna intersitibus externè reticulatâ; cutri inferiori planulatâ, auriculâ longitudinally valvâ, sinu profundo, cutri superiori convexâ, via auriculatâ; pol-lacoides-âlibi, colâ superiori interduâ rufo-auriculatâ valvâ.*

FORBES' HEMIPECTEN. Shell orbicular, Anomia-shaped, very thin, hyaline, concentrically lineated, interspaces between the lines delicately reticulated; lower valve flattened, auricle longitudinally rayed, sinus deep, upper valve convex, scarcely auriculated; transparent white, upper valve sometimes rayed with orange-red.

ADAMS and REEVE, Proc. Zool. Soc. 1849, p. 133, *Mollusca*, pl. 1. f. 2. and Moll. Voy. Samarang.

Hab. Sooloo Archipelago, Eastern Seas (diverged from a coral and stony bottom at a depth of about fourteen fathoms); Belcher.

Two specimens of this interesting new form were collected during the voyage of H.M.S. Samarang, one smooth and white, the other slightly sculptured in a decussately corrugated style, probably from the effect of the Bryozoon which covers it, and rayed with orange-red. The under valve is smooth in both specimens, showing it to have been attached; the upper valve is more or less covered in both with various parasitic objects.

We have the pleasure to name the species in honour of Professor Edward Forbes, who notices the genus, in his valuable work on the British Mollusca, as affording a curious intermediate link between *Pecten* and *Anomia*.

HEMIPECTEN.—PLATE I.

Fig. 1 represents the smooth colourless specimen,—*a*, interior of the under valve; *b*, the valve closed, presenting the exterior of the under valve; *c*, the valves closed, presenting the exterior of the upper valve.

Fig. 2, represents the coloured and slightly corrugated specimen,—*a*, interior of the upper valve, which is

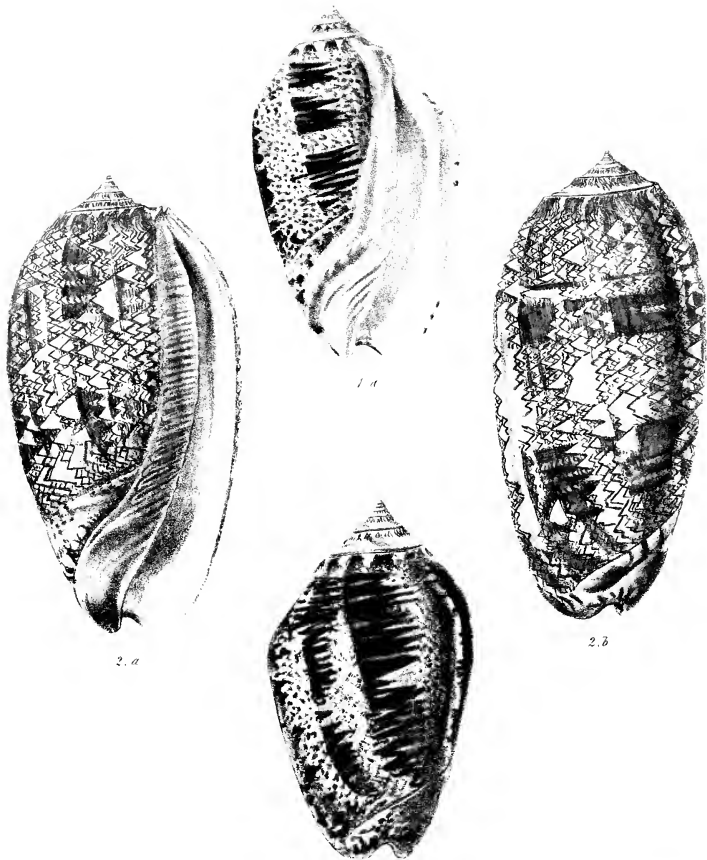
not shown of the former specimen; *b*, the valves closed, presenting the exterior of the under valve; *c*, the valves closed, presenting the exterior of the upper valve; *d*, interior of the under valve,—*all of the natural size.*

MONOGRAPH

OF THE GENUS

O L I V A .

What hidst thou in thy treasure-caves and cell,
Thou hollow-sounding and mysterious man,
Pale glistening pearls, and lily-coloured shells,
Bright things that gleam unreck'd of and in vain. — *M. V. H. 1850.*



2. a

2. b

1. a

1. b

OLIVA.

PLATE I.

Genus OLIVA, Brugière.

Testa oblonga, laevis, subcylindracea, basi emarginata, spiris plerumque brevisculis, suturis peculiariter canaliculatis, columella plicata, pliris obscuris, variis, saepe planulatis et callosis. Apertura elongata, angusta, interdum subpatula.

Shell oblong, smooth, somewhat cylindrical, emarginated at the base, spire generally rather short, with the sutures peculiarly canaliculated, columella plaited, plait: obscure, variable, often flattened and callous. Aperture elongate, narrow, sometimes rather wide.

The Olives are a very distinct group of mollusks, partaking of the characters of *Cyprea* and *Ancillaria*, but more of the latter than of the former genus. The shell, as may be gathered from its enamelled interior, is enveloped by certain parts of the animal, and like that of *Cyprea* is generally composed of two or more layers of different pattern. This variety of colouring is not, however, shown at different stages of the shell's growth as in *Cyprea*: it is only to be discovered by removing the outer coat with acid. Hence it may be inferred that the different coatings are deposited simultaneously during the formation of the shell, whilst the mantle is furled, so to speak, over the edge of the lip, and held in a state of tension by a cord which passes into the narrow sutural channel of the spire. Specimens of *O. gibbosa* and *Brazilensis* are frequently sold by dealers with the outer coating removed to show the pattern beneath, in order to give them the appearance of other species.

The genus *Oliva* has generally been regarded as one of which the species are extremely difficult to determine. They have not proved so on examination. Species, like *O. reticularis*, for example, which differ very much in form, are distinguished by a marked peculiarity of pattern; and others, like *O. inflata*, which present an almost endless variety of pattern, are characterized by some peculiarity of form. In *O. ispidata*, which varies in an extraordinary degree both in form and pattern, the shell is constantly distinguished by the same particular colour in the interior, and there are several species, like *O. erewata*, whose varieties are but so many different phases of the same idea of pattern.

The principal localities of this genus are Mauritius and the Philippine Islands in the eastern hemisphere, and Central America in the western. Out of a hundred species

described in the following monograph, the habitats of about seventy are determined.—Mauritius, Ceylon, the Molucca and Philippine Islands yield about twenty-five species, including the large and richly-coloured *O. tremulini*, *eclytrocetana*, *Olysiptilina*, *nobilis*, *lectitina*, &c.; and Central America about thirty species. Fifteen of these are from Panama, Guayaquil, Nicaragua, Mexico, &c., among which are the giant *O. porphyria*, and the beautiful *O. angulata*, *splendidula*, *postata*, *testacea*, &c., and fifteen from the West Indies, all of which are small, with the single exception *O. fusiformis*. The most northern range of the genus is at Senegal, West Africa, where, of five species, two belong to distinct types, one, *O. annuata*, having a representative on the coast of Sumatra in *O. subata*, and the other, *O. hirtula*, a representative at Real Lijos, Mexico, in *O. testacea*. At Zanzibar on the opposite shore of Africa is the characteristic *O. inflata*; and two very peculiar species, *O. Indusica* and *Ancillarioides*, are recorded from Kurrahee at the mouth of the Indus. Three species from the coast of Brazil, *O. Brasilensis*, *patula*, and *aquatilis*, present forms which are quite peculiar to that locality. Only two species, of very different typical character, are recorded from the west coast of South America, one of tolerable size and extremely variable in colouring, *O. Peruviana*, the other of small dimension, *O. columellaris*. Three species are described from the Society and Feejee Islands, and two from Australia.

The following may be noted as peculiar instances of distribution. The only two species at present known from the Red Sea are identical with two inhabiting the West Indies, *O. umbica* and *jaspidica*. *O. reticularis*, inhabiting the Gulf of California, is found in a smaller state in the West Indies. *O. Duclouxi* is found at the Philippines in the Eastern Seas, and at the Society Islands in the Pacific. *O. kalenutina* inhabits the Gulf of California, and also one of the Galapagos Islands. Lastly, we have a species, *O. erewata*, from four different localities singularly remote from each other,—the Philippine Islands, Zanzibar, Australia, and the Society Islands.

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

OLIVA ANGULATA. *Oliv. testâ ventâ, ventricosa, crassissimâ, puerorivâ, sphaeræ orbina angulato-ventrâ, spirâ brevisculâ, columellâ valde callosâ, planiplicatâ, pliris ferè obsolete; cincto-umbilicâ, olivaceo et griseo mar-*

aurata, *striis transversis anguato-castaneis, aulæ angulatis, hic illic longitudinaliter pictâ, columellâ pallidâ carasolâ, rosea tinctâ.*

THE ANGLED OLIVE. Shell ovate, ventricose, very thick, ponderous, angularly swollen above the middle, spire rather short, columella very callous, flatly plaited, plaits almost obsolete. ash-white, mottled with olive and grey, longitudinally painted here and there with sharply angled transverse very dark chestnut streaks, columella pale carnelion tinged with rose.

LAMARCK. *Anim. sans vert* (Deshayes' edit.) vol. x. p. 607

Voluta incrassata, Dillwyn.

Eadem var. *Olive acroata*, DuRoi.

Hab. Gulf of Nicoya, Central America (in sandy mud at the depth of nine fathoms). Cuming.

There is little variation in this fine species, which is distinguished from all others by its very thickened angular growth, and sharply zigzag bold splashes of colouring.

Species 2. (Fig. *a*, Mus. Cuming; Fig. *b*,

Mus. Steere.)

OLIVA PORPHYRIA. *Oliv. testâ cylindrico-oblongâ, ventricosâ, perisphæ. spirâ brevi, subdepressâ, apice*

plato, columellâ tumidâ, nudique densè plicatâ, plicis paululum obscuris; violaceo-carasolâ, lineis ustulato-rufis nudique angulato-reticulatâ, maculis grandibus obscurè bifasciatâ, columellâ basi violacea tinctâ.

THE PORPHYRY OLIVE. Shell cylindrically oblong, ventricose, very large, spire short, rather depressed, apex raised, columella swollen, densely plaited throughout, plaits a little obscure; violet-flesh colour, angularly reticulated throughout with burnt-red lines, and obscurely two-banded with large blotches of the same colour, columella tinged at the base with violet.

Voluta porphyria, Linnaeus, *Syst. Nat.* (12th edit.) p. 1187.

Olive porphyria, Lamarck.

Cylindrus porphyreticus, D'Argeville.

Hab. Panama (in sandy mud at low water); Cuming

This fine species, the largest of the genus, is remarkably distinct from any other. From the peculiarity of its marking it has been long known as the 'Camp Olive.' Regarding the shell in the position in which it would be if the animal were placed with its head to the left of the observer, the interstitial spaces of the net-work have the appearance of a dense encampment of various-sized tents.



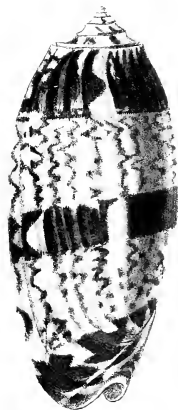
3.4



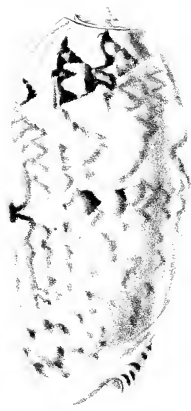
3.5



3.6



3.7



3.8

OLIVA.

PLATE II.

Species 3. (Fig. 3 a and 3 c, Mus. Steere :

Fig. 3 b, Mus. Cole.)

OLIVA NOBILIS. *Oliv. testâ elongato-cylindraceâ, crassiusculâ, spirâ seorsimâ arcuato-exsertâ, anfractibus propè ad suturas et ante medianâ subcontractis, plieis columellaribus vix numerosis, anterioribus fortissimis; pallide lacteis, nigricante-fuscis reticulatè trifasciatâ et longitudinaliter undato-striptâ, columellâ et aperturae fovee carneo-lacteis.*

THE NOBLE OLIVE. Shell elongately cylindrical, rather thick, spire most frequently acuminate exserted, whorls somewhat contracted near the sutures and before the middle, columellar plaits not very numerous, the front ones rather strong; pale cream-colour, reticulately three-banded and longitudinally wave-streaked with blackish-brown, columella and interior of the aperture carmine cream-colour.

Hab. Mauritius.

In a genus of which the species are so nearly related, and the individuals of species so variously painted, opinions must necessarily differ greatly as to the value and limit of specific character. Although it has been my endeavour to restrict the number of species where an observation of many specimens shows them to have been founded upon varieties, I cannot bring my mind to believe that the shell under consideration, which has been named sometimes to *O. treasillian* and sometimes to *O. cythrostoma*, belongs to either species. Not uncommon in collections, and easy of recognition, it is uniformly of larger and more solid growth than its congeners, and of a pale carmine cream-colour, richly banded and blotched in network style with dark brown, the brown being blue-clouded as in other species. M. Dacles gives a very characteristic

figure of it under *O. cythrostoma*, at Pl. 31. f. 7, and two rather indifferent figures of it under *O. treasillian*, at Pl. 11. f. 5 and 7, of his monograph.

Species 4. (Fig. a, Mus. Cole : Fig. b, Mus. Steere.)

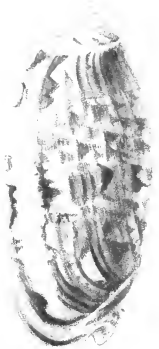
OLIVA PONDEROSA. *Oliv. testâ oblongo-cylindraceâ, crassâ, obtusâ, spirâ parvâ exsertâ, anfractibus ultimâ apicem ceras plus minus producta, plieis columellaribus subnumerosis, parvis crenatis; lacteis, strigis undatis aut reticulatis hecibus interruptis obscurè carneo-albis aut violaceis, hic illis fuscis, sparsim pictâ, columellâ et aperturae fovee carneo-albis, apertura interiorâ carneo-roseo-lacteis.*

THE PONDEROUS OLIVE. Shell oblong-cylindrical, thick, stout, spire but little exserted, last whorl more or less produced towards the apex, columellar plaits rather numerous, but partially faded; cream-white, sparingly painted with obscure bluish or violet short interrupted streaks, here and there brown and reticulately, columella and interior of the aperture carmine-white, aperture sometimes tinged with flesh-pink.

Dacles, Mon. Oliv. Pl. 15. f. 8 and 9.

Hab. Mauritius.

This fine species is distinguished from the preceding and allied forms, by its solid structure and by the produced growth of the last whorl at its hind extremity, where it rises into a callosity above the suture after the manner of *O. nutara*. The painting consists of scattered interrupted brown streaks, reticulately in places, obscured into a bluish violet or milky aspect, by an overcharge of the same colourless enamel as the ground.



5.a



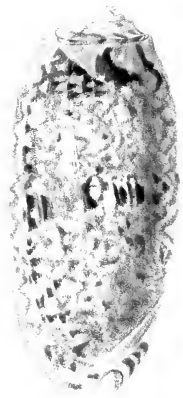
5.b



5.c



5.d



5.e

OLIVA.

PLATE III.

Species 5. (Fig. *a, c*, and *d*, Mus. Cole; Fig. *b*,
Mus. Sevré, and Fig. *e*, Mus. Cuming.)

OLIVA OLYMPIADINA. *Oliv. testâ oblongo-cylindrica, crassa, infra suturas subcontractâ, spirâ exsertâ, apertura altius ad extremitatem posticam aperturâ callosa-producta, plieis columellaribus plus minus evanidis-ubâ, purpurascens-fusca subobscurè dilutè reticulatâ, intusè fusca sæpè peraequaliter maculatâ, columellâ et apertura foveâ albâ.*

THE OLYMPIAN OLIVE. Shell oblong-cylindrical, thick, slightly contracted beneath the sutures, spire exerted, last whorl callously produced at the hind extremity of the aperture, columellar plaits more or less faint; white, somewhat obscurely dilutely reticulated with purplish-brown, often very largely blotched with dark brown, columella and interior of the aperture white.

DUCLOS, Mon. Oliv. pl. 12. f. 10 to 12.

Hab. Mauritius.

A magnificent series of about two hundred specimens,

all of this species, collected at the Island of Mauritius by Miss Cole, has enabled me to trace the connection of its varieties with great accuracy. As represented at Fig. 5 *b* and Fig. 5 *c*, the shell is faintly mottled throughout with light milky-purplish net-work, interrupted with two broken bands of scattered brown blotches. In the variety Fig. 5 *a* the brown increases in quantity, the faint mottling is broken up, and, except on the under surface of the shell, is almost obliterated. In the shell represented at Fig. 5 *d* the brown is richer, more largely blotched, and the interstices between the blotches present only very faint indications of the mottled network. The species approaches very nearly in this state to the dark variety of *O. Uraniana*, Fig. 5 *e*, which on being introduced in this plate was thought to belong to it. *O. Olympiadina* is always to be distinguished in addition to the above-named characters by the pure white enamel of the interior and columella, which latter is always more callous. The ground is always pure white, and even the dark brown painting is not infrequently over-laid by a very thin milky coating of the same.



6. a.



6. b.



6. c.



6. d.



6. e.

OLIVA.

PLATE IV.

Species 6. (Fig. *a*, *c*, and *d*, Mus. Steere; Fig. *b*,
Mus. Cole, and Fig. *e*, Mus. Cuming.)

OLIVA TREMBLINA. *Oliv. testâ subelongato-cylindrica, anfractibus postice et ante medium leviter contractis, apice exserto, plicis columellaribus anterioribus fortissimis; caracolo albo, nigricante-fusco interrupte trifasciata et dilute longitudinaliter striptâ, strigis corruen-nelulatis, valde confusis, interdum antice intense fuscâ, hic illic caracolo albo interruptâ, columellâ et aperture fauce albidis, plerumque caracolo-rufescente lineatis.*

THE TREMBLING OLIVE. Shell somewhat elongately cylindrical, whorls slightly contracted posteriorly and before the middle, apex exserted, front columellar plaits rather strong, carnelion-white, sometimes three-banded with dark brown, and painted longitudinally with blue-clouded streaks very much confused, sometimes dark brown throughout, interrupted

here and there with carnelion-white, columella and interior of the aperture whitish, generally tinged with flesh-red.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 607.
Hab. Mauritius and Philippine Islands.

This well-known species has mostly a carnelion-rouge tinge, but not a positive red interior as in *O. erythrostoma*. The specimens figured at 6 *c*, *d*, *e*, represent the ordinary state of it, densely clouded throughout with blue-shaded streaks and obscurely three-banded with dark-brown blotches. In Fig. *a*, *b*, the shell is entirely brown except in a few scattered patches, in which state it passes into the variety represented in the preceding plate at Fig. 5 *c*. This last variety, of which M. DuRoi represents a characteristic specimen at Pl. 11. f. 8 of his monograph, is generally of larger size and of more solid growth, presenting almost sufficient character to be regarded as a distinct species.



7.4



7.4



7.6



7.4



7.4



7.4



7.4

OLIVA.

PLATE V.

Species 7. (Fig. *a, e, f, g*, Mus. Cuming,
Fig. *b, c, d*, Mus. Steere.)

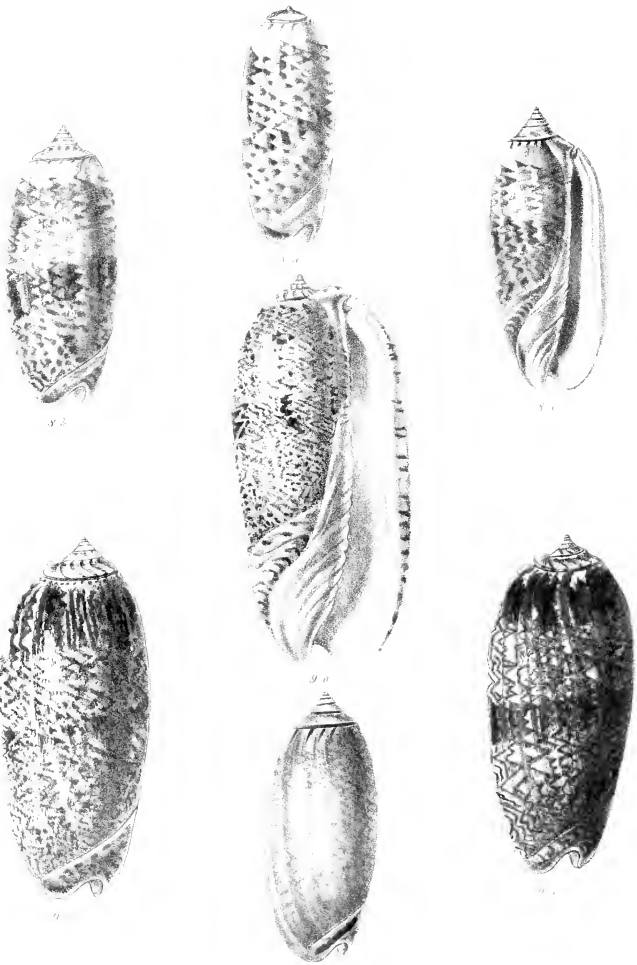
OLIVA ERYTHROSTOMA. *Oliv. testâ oblongo-cylindrica, crassiusculâ, spirâ exsertâ, anfractibus posticè saepe tumidis, ad suturas contractis, plicis anticis columellaribus fortiusculis; caracolo-albâ, caracolo-ciridi, vel olivaceo, vel purpureo nubilato-strigatâ et trifasciata maculatâ, nunquam intus fava maculatâ vel aurato fuscâ, columellâ lobrope variegato-albis, aperture fauce ciliè refâ.*

THE RED-MOUTH OLIVE. Shell oblong-cylindrical, rather thick, spire exserted, whorls often swollen posteriorly, contracted at the sutures, front columellar plait rather strong; caracolon-white, cloud-streaked and three-banded with blue-green, or olive, or purple, sometimes blotched with dark brown or altogether brown, lip and columella caracolon-white, interior of the aperture deep red.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 506.

Hab. Fig. *a, g*, Ceylon. Fig. *e, f*, Island of Mindanao, Philippines (sandy mud, in deep water); Cuming.

This fine species is distinguished from *O. treautonii*, its nearest ally, first, in the aperture being stained with deep red, secondly, in being mostly rather swollen posteriorly beyond the middle, and, thirdly, in exhibiting a greater variety of colouring in the painting. At Fig. *a, g*, the painting is simply purple-lake upon a white ground. At Fig. *b* the ground is caracolon, and the painting is of purple-lake shaded with a rich golden yellow. Fig. *c* represents a very richly painted dark olive-brown, blue-shaded upon a caracolon ground. At Fig. *d* the streaks are of a milky blue-green shaded with the same golden yellow as in the purple variety *b*. Fig. *e* is a variety very richly painted with dark in miscellaneous angular blotches, neither streaked, nor disposed in bands; and Fig. *f* is almost an uninterrupted brown, obscurely banded. These figures illustrate only a few of the most striking varieties of this beautiful species, which might be considerably added to if space permitted.



OLIVA.

PLATE VI.

Species 8. (Fig. *a, b, d*, Mus. Steere; Fig. *c*,
Mus. Cuming.)

OLIVA IRISANS. *Oliv. testâ elongato-cylindraceâ, subangustâ, spirâ unice acuminato-exsertâ, unice brevis, plus minus callosâ, plâcis columellaribus interduâ subcarni-
dis; albâ vel carneo-albâ, strigis linearibus purpureo-
olivaceis, rivis lateque nebulatis, acutè nublatis, plus minus bifasciatis reticulatis, utriusque pictâ, nonnunquam late-fusco aut nigricante omnino indatâ, anfractuum margine spirali fusco punctato, columellâ pullidè car-
neâ, apertura fusce carulescente-albâ.*

THE IRIDESCENT OLIVE. Shell elongately cylindrical, rather narrow, spire sometimes acuminately exerted, sometimes short and more or less callous, columellar plaits not unfrequently rather faint; white or carnelion-white, neatly painted with purple-olive linear streaks, clouded with green and yellow, sharply waved, and more or less reticulately two-banded, sometimes altogether covered with yellow-brown or blackish, spiral edge of the whorls brown-dotted, columella pale carnelion, interior of the aperture bluish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 610.
Hab. Mauritius.

This appears to be a very well defined species, allied to *O. tremula*, but uniformly of smaller size and narrower. The spire, mostly exerted, is sometimes short, buried nearly to the apex, as in Fig. *a*, by a callous deposit of enamel. The painting is distributed in a scattered interrupted zigzag style, rarely or never blotched, though mostly aggregated in bands about the middle and posterior portion of the shell. In Fig. *b* and *c* the streaks are dark olive, clouded, iris-like, with blue-green and yellow upon a warm carnelion ground. In Fig. *d* the shell is pure

white, and the painting simple blue-purple. In Fig. *d* the pattern is entirely overlaid with a uniform yellow-brown coat, which in some specimens is nearer black.

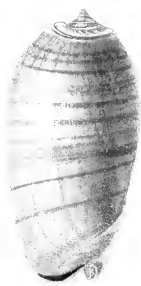
Species 9. (Fig. *a, c*, Mus. Steere; Fig. *b*,
Mus. Cuming.)

OLIVA TEXTILINA. *Oliv. testâ oblongo-cylindraceâ, late-
usculâ, crassâ, spirâ breviusculâ, anfracta altimo in callositate ad extremitatem posteriorem aperta. protracta,
plâcis columellaribus fortiusculis; carneo-albâ, punctis livisve punctura nigris, angulato-reticulatis,
interduâ subprovisis, cinereo-nebulatis, plus minus saturatè bifasciatis, utriusque pictâ, columellâ et apertura fusce cinctè carneis.*

THE FINE-TEXTILE OLIVE. Shell oblong-cylindrical, rather broad, thick, spire rather short, last whorl produced into a callosity at the posterior end of the aperture, columellar plaits rather strong; carnelion-white, painted throughout with black dots and lines of dots, angularly reticulately, sometimes rather prominent, ash-clouded, more or less darkly aggregated into two bands, columella and interior of the aperture bright carnelion.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 606.
Hab. Islands of Ticao and Mindanao, Philippines (sandy mud in deep water); Cuming.

There is perhaps less variety in this species than in any other of the genus, the pattern consisting always of an angular ash-clouded network of dark dots, sometimes very regular and close-set, but more frequently prominent and confused in its arrangement. The shell is generally of large size, thick, and rather broad, the last whorl rising upon the spire into a callosity.



OLIVA.

PLATE VII.

Species 10. (Fig. 41 *a, b, c, d, f, g*, Mus. Steere;
Fig. *e*, Mus. Cuming.)

OLIVA MACRA. *Oliv. testâ oblongo-ovata, crassa, posticâ tumidiusculâ, jacta solutus contractâ, spirâ subobpressâ, anfractu ultimo ad extremitatem posticam aperturâ in collositate erectâ producto, plâis columellaribus subplanulatis, labro subplicato; circumcirculâ vel intusâ atrâ, vel nigra, lamaculâ aut foveâ angulato-striatâ aut fulguratâ, strigis interruptis, hecibus, interdum sâculari bifasciatis, columellâ albâ, basi pallidâ sanguinea tinctâ, aperturâ foveâ carnositate albâ.*

THE MOOR OLIVE. Shell oblong-ovate, thick, rather swollen posteriorly, contracted next the sutures, spire rather depressed, last whorl produced at the posterior end of the aperture into an erect callosity, columellar plaits somewhat flattened, lip subplicato; ash-carnation, or dark olive or black, sometimes mottled, sometimes mottled with brown angular streaks, or lightning-marked, the streaks being interrupted, short, sometimes amalgamated darker with two bands, columella white, faintly tinged at the base with blood-red, interior of the aperture bluish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x, p. 608.

Varieties.

Oliva fulvianus, sepulturalis, and fasciata, Lamarck.
Oliva leucostoma and Mocheaga, DuRoi.
Hab. Ceylon, Mauritius, Philippines.

This species is extremely variable in its style of painting except in one important point, the base of the columella, which is, with rare exception, tinged with a blush of red. In other respects it varies chiefly as represented in the accompanying plate. Fig. *e* and *f* may be regarded as Lamarck's type of the species, dark black or olive, uniform and unspotted, while the zigzag lightning-marked pattern at Fig. *b* is his *O. fulvianus*. The shell Fig. *a*, with black, splashed bands and waved streaks, upon a mottled-olive ground, represents Lamarck's *O. fasciata* and DuRoi's *O. leucostoma*; those at Fig. *c* and *g* with two obscure bands upon a mottled-olive ground, often lighter than here represented, the *O. Mocheaga* of DuRoi; and the rich dark-olive variety with scattered indications of bands and waved streaks constitutes Lamarck's *O. sepulturalis*.

The *Oliva Macra* is mainly distinguished by its constancy of form, having always the same tumid growth towards the spire, which is rather depressed, and the same produced callosity production of the last whorl at the posterior end of the aperture.



OLIVA.

PLATE VIII.

Species 11. (Fig. a, Mus. Steere; Fig. b, c, Mus. Cuming.)

OLIVA FUSIFORMIS. *Oliv. testâ fusiformi-oratâ, crassissimâ, posticè truncatâ, spirâ subnuda, cœvâ, plicis columellaribus posticis subarcuatis; albâ, rufescente-sordida multique longitudinaliter fulguratâ, interlucâ bis foveatâ, columellâ et aperturâ fuscæ chruceis.*

THE FUSIFORM OLIVA. Shell fusiformly ovate, very thick, swollen posteriorly, spire rather large, exerted, posterior columellar plaits rather faint; white, longitudinally zigzag-streaked with reddish-fawn, sometimes two-banded, columella and interior of the aperture ivory-white.

LAMARCK, *Ann. sans vert.* (Deshayes' edit.) vol. x. p. 618. *Hab.* West Indies.

A very distinct species of stout solid growth, belonging to the same type as *O. reticulata* and *Julista*, in which the pattern is gathered along the spiral edge of the whorls into points of a darker colour.

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

OLIVA GIBBOSA. *Oliv. testâ fusiformi-oratâ, obtusâ, crassissimâ, callâ callusâ, spirâ acuminatâ, columellâ callâ callusâ, plicis fuscè oculatis; carinâ aut foveatâ, acuminatâ aut strigatâ, foveâ laterâ conspicuâ, nigricante-fusca uncinatâ ad basin, spirâ et columellâ luteo-albidis, aperturâ fuscæ cœcubescente-albâ.*

THE GIBBOUS OLIVE. Shell fusiformly-ovate, stout, very thick, very callous, spire acuminated, columella very callous, plaits almost buried; blue or pale yellow, mottled or streaked, with a conspicuous black-

spotted yellow band at the base, spire and columella yellowish-white, interior of the aperture bluish-white.

Volata gibbosa, Boru, *Mus. Vind.* p. 215.

Olivâ ciugulata, Chemnitz.

Volata atricalus pars, Gmelin.

Olivâ atricalus, Chemnitz.

At cadem var.: *Olivâ umbulosa*, Lamarek.

Hab. Africa.

This and the following species are both remarkable for the callous deposit of enamel on the columella, which extends to and almost covers the spire.

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

OLIVA BRASILIENSIS. *Oliv. testâ subtrigono-oratâ, crassissimâ, solidâ, spirâ plano-depressâ, apicè subacutâ, columellâ callâ callusâ, plicis fuscè oculatis; fulco-sordidâ, albo strigatâ, lineis fuscoseculibus capillaribus interruptis sub lente transversim notatâ, zonâ latâ saturatiorè ad basin.*

THE BRAZILIAN OLIVE. Shell somewhat triangularly ovate, rather thick, solid, spire flatly depressed, rather sharp at the apex, columella very callous, the plaits almost buried; fulvous-fawn, streaked with white, transversely marked, beneath the lens, with brown interrupted hair lines, and with a broad darker zone at the base.

CHEMNITZ, *Conch. Cab.* vol. x. pl. 147. f. 1367, 1368.

Volata pinguis, Dillwyn.

Hab. Brazil.

A shell of very solid growth, remarkably characterized by its depressed callous spire.



OLIVA.

PLATE IX.

Species 14. (Fig. *a, b, c, e*, Mus. Cuming;
Fig. *d*, Mus. Steere.)

OLIVA PERUVIANA. *Oliv. testâ ovata, crassa, gibbosa, posticè tumida, interstria annulata, spirâ breviuscula, columella basi versus pliatâ, supra lævigatâ; purpurascens vel purpurascens-albâ, purpureo-costæ longitudoinaliter fulguratâ aut strigatâ-punctatâ, interdum immaculatâ, interdum omnino purpureo-costatâ, columellâ albâ, apertura foveæ purpurascens-laciatâ.*

THE PERUVIAN OLIVE. Shell ovate, thick, gibbous, swollen posteriorly, sometimes annulated, spire rather short, columella plaited towards the base, smooth above; light purple or purplish white, longitudinally zigzag-marked or streak-dotted with purple-chestnut, sometimes unspotted, sometimes entirely purple-chestnut, columella white, interior of the aperture tinged with purple.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 617.
Eadem var. *Olivæ Sanguineis*, Lamarck.

Hab. Coquimbo, Copiapo, and Bay of Callao, Peru (in sandy mud, at depths varying from four to seven fathoms); Cuming.

The specimens selected for the illustration of this species are particularly characteristic of its varieties of painting, in which only two colours are employed. At Fig. *a* the shell is purplish-white, unspotted, whilst that at Fig. *c* is of a uniform dark purple-chestnut. At Fig. *b* the chestnut appears in bold distant zigzag stripes upon a light purple ground, which state of the species was named *O. Sanguineis* by Lamarck, from some erroneous information of its locality. Fig. *d* represents a variety with more of the chestnut colouring, broken up as it were into dots and short interrupted streaks; whilst in the shell represented at Fig. *e* the chestnut appears in very prominent and still smaller dots, overcharged with a general tinge of the same colour.

The form of this species varies in being sometimes very tumid, and produced into a ring towards the spire as indicated at Fig. *c*.

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

OLIVA JULIETA. *Oliv. testâ ovata, crassiusculâ, medio tumidâ, deinde spiram versus attenuatâ, columellâ multiplicatâ, basi callosa-gibbosa; lutescente-albâ, punctis grandibus nigricante-fuscis, caruleo-nubulatis, interruptè angulatè dispositis, nudique ricicè pictâ, fusca in antris acuminatis juxta suturas, apicè pallidè rictata, basi antrâ ciliareâ obscure laciatâ, columellâ et apertura foveæ lutescente-albis.*

JULIET'S OLIVE. Shell ovate, rather thick, swollen in the middle, then attenuated towards the spire, columella many-plaited, callously gibbous at the base; yellowish-white, brightly spotted throughout with large blue-clouded black-brown dots, arranged in confused or broken angles, the brown rising in acuminated blotches next the sutures, apex pale violet, base obscurely marked with a faint violet blotch, columella and interior of the aperture yellowish-white.

DUCLOS, *Mém. Oliv.* pl. 16. f. 3 and 4.

Hab. Real Llanos, Central America (in sandy mud, at the depth of six fathoms); Cuming.

This beautiful species bears the same relation to *O. reticularis*, through the variety named *O. rosulata* by Duclos, represented at Fig. 16 *b* in the next plate, as *O. nobilis* has with *O. lineatula*. Regarded separately, the allied forms in both instances appear specifically distinct from each other, but it is impossible to deny that there is only one prevailing idea of form and pattern in each. The typical pattern of *O. reticularis* is a network composed of brown dots, gathered into lines or acuminated blotches at the sutures. The dots become larger, more confused or broken up, and more conspicuous, as in the variety *O. angulata*, Duclos, and the character of this passes by an easy transition into *O. Julieta*, distinguished by the same hieroglyphical marking at the base, and an indication of the violet blotch which is very characteristic throughout the series.



16. b



16. a



16. c



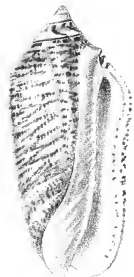
16. d



16. e



16. f



16. g

OLIVA.

PLATE X.

Species 16. (Fig. *a, b, c, e, g, i*, Mus. Cuming;
Fig. *d, f, h*, Mus. Steere.)

OLIVA RETICULARIS. *Oliv. testâ ovata, vel oblongâ, vel elongato-cylindraceâ, interdum posticè tumida, apice exertiusculâ, plicis columellaribus numerosis, plurius sæpè exanidis; albidâ aut cinerascente, fusco vel nigricante-fusco profusè acutè punctata-reticulatâ, reticulâ ad suturas lineatâ aut uncinatâ, columellâ ad basim plerumque plus minus violaceo-fusco tinctâ, apertura faucè albidâ.*

THE RETICULATED OLIVE. Shell ovate, or oblong, or elongately cylindrical, sometimes swollen posteriorly, apex rather exerted, columellar plaits numerous, many of them frequently obscured, whitish or pale-ash, painted with a brown or black dotted net-work, which is gathered at the sutures into lines or acuminate blotches, columella mostly stained more or less with violet-brown, interior of the aperture whitish.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. v. p. 613 Varietates.

Oliva urucosa, Lamarck.

Oliva Timoria, exanlata, obsiana, and pamborian, DuRoi. *Hab.* Gulf of California; Bonnet. Island of Granada, West Indies; J. Cuming.

The specimens represented in the accompanying plate are selected with the view of illustrating the different phases of this extremely variable species, that have been

distinguished by other specific names. Fig. *a* is Lamarck's type *O. reticularis*, narrow in its proportions, and mostly of smaller size, with the net-work more spaced, after the manner of *O. flamantata*, and the sutural lines of pattern more prolonged. Fig. *b* represents DuRoi's *O. exanlata*, in which the net-work is broken up into large blotches, and the basal violet-brown blotch rather prominent. Fig. *c* is the *O. obsiana* of the same author, stouter and more gibbous in form, with the net-work somewhat similar but more or less obscured by an overcharge of milky-white enamel. Fig. *d*, the finest state of the species, of which a dark chestnut-rooted variety is represented below at Fig. *g*, is Lamarck's *O. urucosa*, and has the net-work small, crowded, and confused. Fig. *e*, a remarkable form, in which the posterior portion of the shell is very stout and swollen, and the pattern small, confused, and partially banded, is DuRoi's *O. Timoria*, though certainly not an inhabitant of Timor. Lastly, the oblong contracted variety, Fig. *f*, is the *O. pamborian* of the same author.

Besides the above-mentioned named varieties, are two very characteristic states of the species, Fig. *h, i*, in PL. XI. In the former the net-work is peculiarly waved, and in parts is over-coated with streaks of bright chestnut. In the latter the shell is of a peculiar oblong-cylindrical form, and the net-work is small, confused, and aggregated in bands. This variety is not far removed from *O. splendenda*.



OLIVA.

PLATE VI.

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

OLIVA SPLENDIDULA. *Oliv. testâ cylindraceo-oblongâ, spirâ brevissimâ, apiceolato, plieis columellaribus subdistantibus; cinereo-albicatis, fasciis duabus, alterâ supra medianâ, alterâ basali, uncialis triplicis fasciis reticulatis, elongatis, fasciarum interstitiis fusco-nigro sparsâ punctatis et maculatis, apice basinque purpureo-cinereis, aperturæ foveæ lutescenti-âlbâ.*

THE SPLENDID OLIVE. Shell cylindrically oblong, spire rather short, apex raised, columellar plaits rather distant; ash-white, encircled with two bands, composed of triangular reticulated brown spots, one above the middle, the other basal, interstices between the bands sprinkled with black-brown spots and blotches, base and apex purple-violet, interior of the aperture yellowish-white.

SOWERBY, Tankerville Catalogue, App. p. 52.

Hab. Island of Tobago, Bay of Panama (in sandy mud at low water); Cuming.

This fine species belongs to the same type as the preceding, *O. reticulata*. It is distinguished by a peculiarity of marking, which is constant in all specimens, consisting of two broad confused brown bands, of which the interstices are sprinkled with curved linear dots and triangular blotches. The spire is short and rounded, with the apex raised, which, together with the base of the columella, is tinged with purple-violet.

Species 18. (Mus. Cuming.)

OLIVA LITERATA. *Oliv. testâ elongatâ, spirâ exertâ, plieis columellaribus intervallo subnervatis; pallidè sparsâ, lutescente parva luctâ, reticulâ fusâ subnervâ, acutè triplici, bifasciatâ dispositâ, hic illuc characteribus castaneis, inscriptâ, ornâtâ, columellâ albâ, aperturæ foveæ circû violacè.*

THE LETTERED OLIVE. Shell elongated, spire exerted,

columellar plaits sometimes rather concealed; light fawn-colour, partially tinged with yellow, ornamented with a rather large brown net-work, sharply triangular, disposed so as to show two bands, marked here and there with chestnut characters, columella white, interior of the aperture deep violet.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 614.
Hab. West Indies.

Belonging also to the type of *O. reticulata*, to which species it more closely approximates than *O. splendidula*. In form it is peculiarly elongated, the net-work is of rather a large flame-pattern, showing two bands, which are marked here and there with dark characters. The aperture is characterized by a deep tinge of violet.

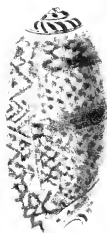
Species 19. (Mus. Cuming.)

OLIVA CUMINGII. *Oliv. testâ cylindraceo-oblongâ, posticè unciali, rotundatâ, spirâ brevi, apice subexserto, acuto, plieis columellaribus planulatis, subnervatis, columellâ basi unciali; arcuatis-ovatis, castaneæ et nigricante-fusæ, maculata, variè fasciatâ, columellâ basi lridulo-purpureo-âlbâ pallidè luctâ, aperturæ foveæ castaneocinereâ-âlbâ.*

CUMING'S OLIVE. Shell cylindrically oblong, swollen posteriorly, rounded, spire short, apex rather exerted, sharp, columellar plaits flattened, almost concealed, columella swollen at the base; orange-saffron colour, variously banded with unspotted chestnut and blackish-brown, base of the columella faintly tinged with livid-purple, interior of the aperture bluish-white.

Hab. Gulf of California; Donnet.

This appears to be very distinct from any species yet described, and is remarkable for the absence of any pattern of marking in the painting, which is of a warm orange-saffron hue, simply cross-banded.



OLIVA.

PLATE XII.

Species 20. (Fig. *a, b, c*, Mus. Steerc.)

OLIVA ELEGANS. *Oliv. testâ cylindrico-ovata, medio tumidiusculâ, spirâ brevi, angustâ altâ et extrorsitate posticâ aperturâ in callusitate erectâ productâ; virescente aut lutescente-albâ, strigis olivaceo-rufis, caruleo et croceo-rufo nebulatis, interdum fusco-âgro acutè prominèe undatâ, columellâ basi pallidè sanguineo luctâ, aperturâ fovee caruleo-âgro-albâ.*

THE ELEGANT OLIVE. Shell cylindrically ovate, rather swollen in the middle, spire short, last whorl produced into an erect callosity at the posterior end of the aperture: greenish or yellowish-white, sharply promiscuously waved with olive-green or brown-black streaks, clouded with blue and saffron-red, columella faintly tinged at the base with a blush of blood-red, interior of the aperture bluish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 611.
Hab. Feejee Islands.

This species is chiefly distinguished from those which accompany it in the plate, by its shorter and more tumid growth, and the erect callous production of the last whorl upon the spire, which is proportionably depressed. The specimen represented at Fig. *a* is promiscuously waved with dark green broken streaks, clouded with blue and saffron-red; that at Fig. *b, c* presents the same colouring overlaid with a profusion of rich black-brown zigzag streaks.

Species 21. (Fig. *a, b*, Mus. Steerc.)

OLIVA TIGRINA. *Oliv. testâ cylindrico-ovata, medio tumidâ, subinflatâ, spirâ brevi, angustâ altâ et extrorsitate posticâ aperturâ calluso-productâ, plievâ columellaribus plus minusve albis; cinerescete-albâ, maculis parvis cinerescete-griseis profusè varioratâ, interdum âgro-fusco maciis undatâ, columellâ basi pallidè sanguineo luctâ, aperturâ fovee caruleo-âgro-albâ.*

THE TIGER-SPOTTED OLIVE. Shell cylindrically-ovate, swollen in the middle, rather inflated, spire short, last whorl callously produced at the posterior end

of the aperture, columellar plaits more or less faint, ashy white, profusely mottled with small blue-grey spots, sometimes covered entirely with black-brown, columella faintly tinged at the base with a blush of blood-red, interior of the aperture bluish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 625.

Hab. Madagascar.

Distinguished mainly by its swollen growth, being uniformly of larger size than the preceding species, and by its livid grey aspect of colour, except when altogether black-brown, as it not infrequently is.

Species 22. (Fig. *a, b*, Mus. Steerc.)

OLIVA TRICOLOR. *Oliv. testâ cylindrico-oblongâ, interdum subangustâ, spirâ breviusculâ, peculiariter callusâ, plievâ columellaribus basi croceo-fusis, foveolis; albâ aut virescente, caruleo et croceo-rufo profusè nebulatâ, rivis macularatâ et fasciatâ, spirâ nigro obliquè tessellatâ.*

THE TRI-COLOURED OLIVE. Shell cylindrically oblong, sometimes rather narrow, spire rather short, peculiarly callous, columellar plaits rather strong towards the base; whitish or greenish, profusely clouded with blue and saffron-red, marbled and banded with green, spire obliquely tessellated with black, base of the columella tinged with a blush of blood-red, interior of the aperture white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 615.

Varities. *O. Philontha*, DuRoi.

Hab. Mauritius.

The colouring of this species consists of a profuse mottling of clouded blue and saffron-yellow spots, with in most specimens, a large proportion of green, showing two bands, one round the middle of the shell, and one beneath the sutures; but the most characteristic feature of the species consists in the spire being obliquely tessellated with black, and a slight mixture of saffron-red



24 a



25 a



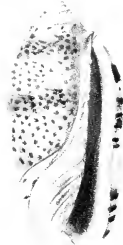
26 a



27



28 c



29



30



25 b



25 b



26 b

OLIVA.

PLATE XIII.

Species 23. (Mus. Steere.)

OLIVA MUSTELINA. *Oliv. testâ cylindraceo-oblongâ, spirâ plano-depressâ, apice acutâ, inflexâ altiliaâ posticè subpendulâ, plieis columellaribus uniaeriosis; interscote, strigis angustis flexuosis uniaeriosis prominèntiâ pictâ, columellâ albivante, aperturae fauce violaceâ.*

THE WEASEL-LIKE OLIVE. Shell cylindrical oblong, spire flatly depressed, sharp at the apex, last whorl somewhat produced posteriorly, columellar plaits numerous; yellowish, promiscuously painted with numerous flexuous narrow streaks, columella whitish, interior of the aperture violet.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 616.
Hab. Singapore (in fine sand at a depth of about seven fathoms); Cuming.

There is little variation in this species, which is well characterized by its straight cylindrical form, depressed spire, flexuous line painting, and violet interior.

Species 24. (Fig. *a, b, c*, Mus. Steere; Fig. *d*, Mus. Cuming.)

OLIVA EPISCOPALIS. *Oliv. testâ subelongato-oblongâ, crassissimâ, spirâ exertâ, apice acutâ, plieis columellaribus fortibus; alni, punctis aut lineis brevibus intercryptis caruleis et crasso-rufa nebulatis prominèntiâ pictâ, interstria livido-olivacea saturatè variegatâ, aperturae fauce intrasè violaceâ.*

THE EPISCOPAL OLIVE. Shell rather elongately oblong, very thick, spire exerted, sharp at the apex, columellar plaits strong; white, promiscuously painted with blue and saffron-red clouded dots and short interrupted lines, sometimes darkly variegated with livid-olive, interior of the aperture very deep violet.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 611.
Varietas, *O. longicostis*, DuRoi.
Hab. North Australia; Jules.

A species of very solid growth, prominently distinguished by the very deep violet colouring of the interior. The specimens Fig. *c, d* represent the typical state of the species. Fig. *a, b* represents a dwarf variety (*O. longicostis*, DuRoi), in which there is an unusually copious supply of the dark livid-olive painting.

Species 25. (Fig. *a, b*, Mus. Steere.)

OLIVA SANGUOLENTA. *Oliv. testâ cylindraceo-oblongâ,*

basî subabbreviatâ, spirâ brevi, depressâ, inflexâ altiliaâ ad costreatulæa posticam aperturae callosa, plieis columellaribus subplanulatis; albâ, lineis olivaceis undatis, univâ aiens uniaeriosis confertis, univâ grandibus plus aiens distantibus, ornatâ, columellâ et callositate posticâ sanguineo-roseiscentibus, aperturae fauce caralescente-albâ.

THE BLOODY OLIVE. Shell cylindrical oblong, somewhat shortened at the base, spire short, depressed, last whorl callous at the posterior end of the aperture, columellar plaits rather flattened, whitish, ornamented with wavy olive lines, which are sometimes minute, very numerous and close-set, sometimes large and more or less distant, columella and posterior callosity blood-red, interior of the aperture bluish-white.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 615.
Hab. Island of Negros, Philippines (in sandy mud at low water); Cuming.

Several species of the genus are characterized by a tinge of red at the base of the columella, but in this the whole of the columella is of a uniform blood-red, and this colour not infrequently appears in the callosity of the spire and along the outer lip.

Species 26. (Fig. *a, b*, Mus. Cuming; Fig. *c*, Mus. Steere.)

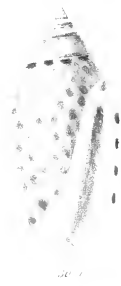
OLIVA BULBIFORMIS. *Oliv. testâ abbreviato-oratâ, inæquâ, crassissimâ, spirâ brevi, parvâ, plieis columellaribus plus aiens callosis; griseo-lutescentibus, olivaceo coriâ unicoloratâ et reticulatâ, plerumque bifasciatâ, columellâ basî interstria pallidissimâ sanguinea lividâ, aperturae fauce caralescente-albâ, interstria livido-olivaceâ.*

THE BULB-SHAPED OLIVE. Shell abbreviated ovate-swollen, rather thick, spire short, small, columellar plaits more or less callous; greyish-yellow, variously spotted and reticulated with olive, generally two-banded, columella sometimes very faintly tinged with red, interior of the aperture bluish-white, sometimes livid violet.

DuRoi, *Mon. Oliv.* pl. 27. f. 10 to 13.

An varieties? *O. dactyloida* and *Caroliniana*, DuRoi.
Hab. Moluvas.

This species may be readily distinguished by its swollen bulbous form, varying more or less convexity



OLIVA.

PLATE XIV.

Species 27. (Mus. Steere.)

OLIVA SCRIPTA. *Oliv. Testâ cylindrica-oblongâ, posticè latiusculâ, spirâ annuântâ antea depressâ, plicis columellaribus parvis, anarosis; lutescente, foveovente nulyque pallide reticulatâ, charactèribus fuscis acutè undatis bifoveolâ sparsâ notatâ, columellâ et apertura foveâ carulescente-albis.*

THE INSCRIBED OLIVE. Shell cylindrically oblong, rather broad posteriorly, spire acuminate but depressed, columellar plaits small, numerous, yellowish, faintly reticulated throughout with pale brown, sparingly marked with brown wavy characters in two bands, columella and interior of the aperture bluish-white.

LAMARCK, *Anim. sans vert.* (D. Shays' edit.) vol. x. p. 615.
Hab. — ?

Very closely resembling *O. literata* in its style of painting, but uniformly of smaller size, and less elongately acuminate. The shell is broader beneath the suture, the spire being a little depressed, and has more the form of *O. unicolor*.

Species 28. (Fig. a, Mus. Steere; Fig. b, Mus. Pickering.)

OLIVA HARPULARIA. *Oliv. testâ oblongo-ovata, posticè truncatiusculâ, spirâ erectâ, plicis columellaribus fere nullis; alba, lineis fuscis plicariis flexuosis longitudinaliter pictis, columellâ et apertura foveâ albis.*

THE HARP-STRIED OLIVE. Shell oblong-ovate, posteriorly rather swollen, spire erect, columellar plaits almost concealed; white, painted longitudinally with numerous brown flexuous lines, columella and interior of the aperture white.

LAMARCK, *Anim. sans vert.* (DeShays' edit.) vol. x. p. 620.
Hab. — ?

I have felt some hesitation in publishing this species, because the shells, of which only three are known in this country (the third in the British Museum), have very much the appearance of being uncoloured and polished. It was, however, described by Lamarck, and figured some years before by Clemnitz in a plate of miscellaneous un-named Olives which he termed remarkable varieties, "*varietates notabiles Olivarum*." It belongs to the *O. reticulata* type, and is characterized by numerous long flexuous markings

which may or may not be the outer natural coating of the species.

Species 29. (Fig. a, Mus. Steere; Fig. b, c, Mus. Cuming.)

OLIVA FOLPASTA. *Oliv. testâ ovata, crassâ, ponderosâ, posticè obtusâ, truncatâ, spirâ breviusculâ, apice obtusâ, plicis columellaribus anarosis, heretibus, nulyis interdum subplanis; cinereo-nilivaceâ, maculis hieroglyphicis punctisque nigris obliquè notatâ, nulyis tuberculibus ad suturam reticulatis, columellâ et apertura foveâ carulescente-albis.*

THE TUMID OLIVE. Shell ovate, thick, ponderous, stout and swollen posteriorly, spire rather short, obtuse at the apex, columellar plaits numerous, short, anterior plaits sometimes rather flattened; ash-olive, obliquely marked with hieroglyphic spots and dots, with yellowish reticulated spots next the sutures, columella and interior of the aperture bluish-white.

DUCLOS, *Mon. Oliv.* pl. 16, f. 1.

Hab. Bay of Montija, Veragua, Central America (in sandy mud at a depth of about thirteen fathoms). Cuming.

It is not difficult to connect this Olive, as well as *O. Julista*, with *O. reticulata*, in both of which forms the network of the typical species is broken up into a confusion of dots and dashes.

Species 30. (Fig. a, Mus. Cuming; Fig. b, c, d, Mus. Steere.)

OLIVA ORIENTA. *Oliv. testâ oblongo-cylindrica, spirâ plevaque annuântâ, interdum supra medianâ annulâ, apice ovata, plicis columellaribus anarosis, sub-irregularibus, duplicatis; foveovente-lactei aut rubro-vente, guttis obscure violaceo-purpureis nulyque notatâ, guttis ad suturam et ad basim internis violaceo-purpureis, interdum preparporeo-aurato variorum aut reticulatâ, apertura foveâ sepissime aurantâ.*

THE SPOTTED OLIVE. Shell oblong-cylindrical, spire generally acuminate, sometimes annulated above the middle, sharp at the apex, columellar plaits numerous, somewhat irregular, duplicate, pale brownish cream-colour or ruddy, marked throughout with obscure violet-purple spots, which are deep violet-purple

round the base and at the sutures, sometimes mottled or reticulated with purple-flesh colour.

Falata eruenta, Dillwyn, Catalogue of Shells, vol. i. p. 511.

Oliva guttata and *leucophaea*, Lamarek.

Oliva maculata and *mantichora*, DuRoi.

Eadem var. *Falata aciculata*, Gmelin.

Hab. Zanzibar, East Africa; Thorn. Australia: Jukes. Island of Siquijor, Philippines (on sand-banks at low water): Cuming. Society Islands (in coral sand at low water): Cuming.

This is a species of a very distinct character, and stands alone in the genus. The typical variety, Fig. 30 *a*, is of a brownish cream-colour, covered with violet-purple spots, which are obscured by an overcoating of cream-colour, except round the base and along the edge of the whorls next the sutures. Fig. 30 *b, c*, represent a state of the

species (*O. mantichora*, DuRoi) in which the shell is mottled with a delicate flesh-purple net-work, and the spots are smaller, patched with white and scattered more irregularly. In the variety at Fig. 30 *d* (*O. leucophaea*, Lamarek) the spots have the character of scattered triangular blotches, and the ground is frequently of a ruddy tinge. Sometimes the shell is characterized by a more or less obsolete ring, which variety Gmelin named *F. aciculata*.

The *O. eruenta* has a remarkably wide range. At the Society Islands it occurs in the fine state represented at Fig. *a*. At Zanzibar the shell is nearly colourless, the spots being only faintly indicated and fewer in number. The specimens from the Philippines are of a warm hue, but nearly colourless; while those from Australia are small and characterized by the confused style of painting represented at Fig. *b, c*.



31. b



31. a



31. c



31. d



31. e



31. f



31. g

OLIVA.

PLATE XV.

Species 31. (Fig. *a, b, c, d, e, f*, Mus. Steere;
Fig. *g*, Mus. Cuming.)

OLIVA INFLATA. *Oliv. testâ ovatâ, inflatâ, medio gibbosâ, crassissimâ, spirâ depresso-planâ, apice elato, acuto, safractu nullâ ad exte-scitatum posticam aperture callosa-producta, columellâ tuberculis duobus callosis arcuatâ, plicis suboculis; cinerascens-albâ, grisea punctatâ, nigro-fusca plicatâ, aut maculatâ, aut fuscâ, interdum caruleo-silicea et arcuatis nebulatâ, vel omnino nigro-fuscâ, vel churâ, tuberculis interdum livido-fusca lividis.*

THE INFLATED OLIVE. Shell ovate, inflated, gibbous in the middle, very thick, spire depressly flattened, apex raised, sharp, last whorl callously produced at the posterior end of the aperture, columella armed with two callous tubercles, plait's rather faint; ash-white, dotted with grey, lightning-marked or blotched or banded with black-brown, sometimes clouded with blue-olive and orange, or altogether

black-brown or ivory-white, tubercles sometimes tinged with livid-brown.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. X, p. 619

Varieties. *Oliva nudata* and *livida*, Lamarck

Hab. Zanzibar; Thoni.

The form of this species is very characteristic, being invariably distinguished by its swollen gibbous growth and by the presence of two plicate tubercles upon the columella. The painting is extremely variable, and its varieties have been selected to characterize different species.

Fig. *a*, mottled with grey dots and encircled by two broad splashed brown bands, represents Lamarck's *O. livida*, whilst the specimens Fig. *d, f, g*, dotted and lightning-marked with black-brown upon a greyish-white ground, belong to his *O. nudata*. The varieties Fig. *b, c* are very richly banded, clouded, and zigzag-marked with livid-blue, olive, and orange. Fig. *e* represents a broad-streaked and zigzag brown-black painted variety. Sometimes the species is entirely black, sometimes entirely white.



32.



32. a.



32. b.



33. b.



33. a.



33. c.



33. d.

OLIVA.

PLATE XVI

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

OLIVA NERULOSA. *Oliv. testâ cylindrico-oblongâ, tumidiorentâ, interstima subangustâ et acuminatâ, columellâ basin versus concavo-depressâ, plicis columellaribus uniacrosis, confertis; cœulescenti-âlbâ, griseo-cœrulea uelulatâ aut strigatâ, zonâ fuscâ, fascio flammulatâ, ad basin, columellâ cœrulescenti-âlbâ, auriculâ purpureâ basin versus uolutâ.*

THE CLOUDED OLIVE. Shell cylindrically oblong, rather swollen, sometimes rather narrow and acuminate, columella concavely depressed towards the base, columellar plates numerous, close-set; bluish-white, clouded and streaked with grey-blue, with a fulvous band, flamed with brown, at the base, columella bluish-white, marked with a purple spot towards the base.

LAMARCK. ANIM. SANS VERT. (Deshayes' edit.) vol. x. p. 628.

Hab. — ?

M. DuRoi regards this species as the young of *O. gibbosa*, and I have myself quoted it with doubt as a variety; it appears, however, to be distinct, especially as regards the narrow form represented at Fig. 32 *b*. Both varieties are distinguished by a characteristic purple spot towards the base of the columella.

Species 33. (Fig. *a, c*, Mus. Steere; Fig. *b, e*, Mus. Cuming.)

OLIVA ACUMINATA. *Oliv. testâ elongatâ, angustâ, spirâ erectâ, acuminatâ, plicis columellaribus uniacrosis, basi callosa-coarctatis; purpureo-âlbâ, auriculis parvis purpureis punctatis aspersâ, ad suturas reticulatâ anulatâ, zonâ latâ spaliatâ, interstima interruptâ, ad basin cingulatâ, columellâ et apertura fauce cœrulescenti-âlbâ.*

THE ACUMINATED OLIVE. Shell elongated, narrow, spiræ exerted, acuminate, columellar plates numerous, callously twisted at the base; purplish-fawn, sprinkled with a few small pale spots, marked with a network pattern at the sutures, and encircled at the base with a broad fawn zone, which is sometimes

interrupted with light splashes, columella and interior of the aperture bluish-white.

LAMARCK. ANIM. SANS VERT. (Deshayes' edit.) vol. x. p. 625.

Eadem var. *Oliva latrolo*, Lamarck.

Hab. Senegal, north-west coast of Africa.

In the young state of this species the delicate network beneath the sutures is elaborately constructed, and the middle portion of the shell is frequently marked with interrupted zigzag streaks. After the first few whorls this design of pattern becomes obscured.

Species 100. (Fig. 33 *d*, Mus. Steere.)

OLIVA SUBULATA. *Oliv. testâ elongatâ, angustâ, tumidâ, subventricosâ, spirâ erectâ, acuminatâ, plicis columellaribus ad basin callosa-coarctatis; fulvo-spaliatâ aut griseo-cœrulescenti-âlbâ, auriculis parvis albidis uelulatis anulatâ, strigis brevibus nigricantibus obliquè concentricis infra suturas, zonâ latâ spaliatâ ad basin cingulatâ, columellâ et apertura fauce cœrulescenti-âlbâ.*

THE SUBULATE OLIVE. Shell elongated, narrow, rather thin, slightly ventricose, spiræ exerted, acuminate, columellar plates callously twisted at the base; fulvous-fawn or grey-blue, marked with small whitish shaded spots, with short obliquely concentric blackish streaks beneath the sutures, encircled with a broad fawn band at the base, columella and interior of the aperture bluish-white.

LAMARCK. ANIM. SANS VERT. (Deshayes' edit.) vol. x. p. 626.

Hab. Bencoolen, west coast of Sumatra (in sandy mud at low water); Cuming.

The irregular numbering of this species arises from the circumstance of my having completed the arrangement of the genus before discovering that Lamarck's *O. subulata* is truly distinct from his *O. acuminata*. It is a more ventricose, thinner shell, marked next the sutures with short obliquely concentric streaks in place of network, and inhabits a widely different locality.



32.4



32.5



32.6



32.7



32.8



32.9



32.10



32.11



32.12



32.13

OLIVA.

PLATE XVII.

Species 34. (Fig. *a, e, h*, Mus. Cuming

Fig. *b, c, d, g, i, k*, Mus. Steere.)

OLIVA ISPIDULA. *Oliv. testâ oblongâ vel elongata-oblongâ, cylindricâ, crassiusculâ, spirâ brevi, recessu apiceâ excavatâ, columellâ subdepressâ, callusâ, plâcis plus minus obsoletis; allâ, vel infuscata, vel aurantiâ, vel roseâ, punctis aut arenulis linearibus transversis fuscis aut albidis, interduâ nigro-fusca fuscis aut eâcâ maculatâ, columellâ eburnâ, apertura foveâ chordatâ, foveâ.*

THE VARIOCOLOURED OLIVE. Shell oblong or elongately oblong, cylindrical, rather thick, spire short, exerted towards the apex, columella rather depressed, callous, with the plaits more or less obscure; white or yellowish, or orange, or ash, marked with brown dots and transverse linear spots, sometimes banded or variously blotched with black-brown, columella ivory-white, interior of the aperture chocolate-brown.

Falata ispidula, Linneus, Syst. Nat. 12th edit. p. 1158.

Oliva ispidula, Lamarek.

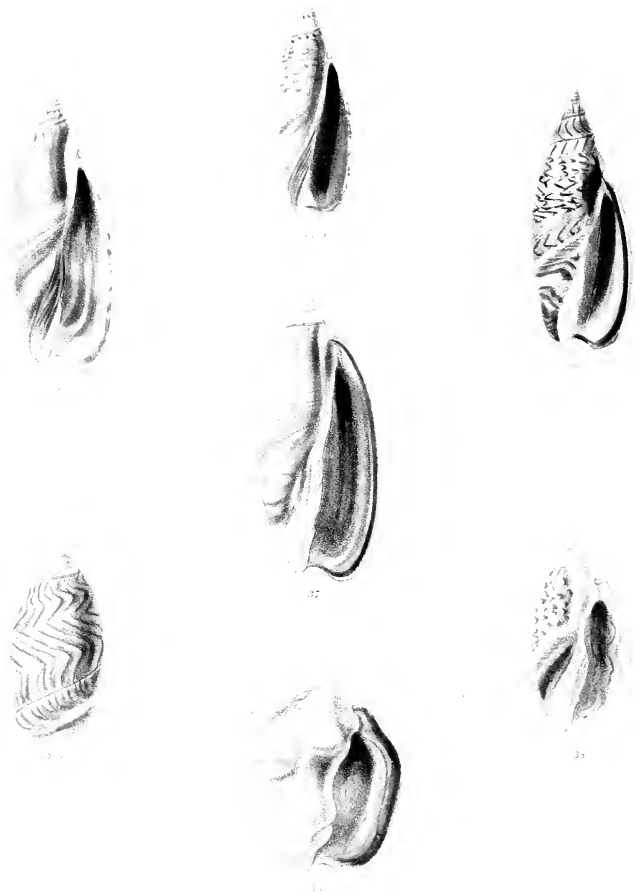
Varieties, *O. caudata*, and *oriola*, Lamarek.

Oliva flavicola, stellata and *tigrisilla*, DuRoi.

Hab. Philippine Islands.

It is almost labour in vain to describe the external colouring of this species, which is the most variable of the

genus, and does not appear to follow any particular design. The colouring of the interior of the shell is extremely characteristic, being with rare exception of a uniform chocolate-brown. Fig. *a* (*Oliva tigrisilla*, DuRoi) is splashed with triangular blotches of black-brown upon a warm cream-coloured ground. Fig. *b*, a very uncommon variety, is encircled with livid blue and reddish pencil-bands. Fig. *c* is very lightly mottled throughout with black-brown. Fig. *d* (*Oliva stellata*, DuRoi) is ivory-white, sparingly marked with sharp hieroglyphic dashes of violet-shaded black-brown. Fig. *e* (*Oliva flavicola*, DuRoi) is of a warm uniform orange tint. Fig. *f* is of a mingled ash and yellow ground covered with black-brown dashes, and encircled with a broad band of the same colour beneath the sutures. Fig. *g* is of a livid ash-colour speckled here and there with dark dots. Fig. *h* (*Oliva tigrisilla*, DuRoi) is almost entirely black-brown. Fig. *i* is of an opake livid grey, with a few scattered dots of darker colour; and Fig. *k* is of a warm yellowish hue, closely dotted and mottled throughout with olive and dark olive-black. The pure white state of the species has been named *O. caudata* by Lamarek, whose *O. oriola* appears to be another variety wanting the rich chocolate-brown interior. The shell figured for *O. oriola* by DuRoi is probably a variety of *O. reticulata*.



OLIVA.

PLATE XVIII.

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

OLIVA HATULA. *Oliv. testâ sulfasiformi-ovata, ventricosa, spirâ subacuminatâ, columella elevata, plisâ distinctâ, peculiariter calloso-ventralis, aperturaâ pitulâ, superâ emarginatâ; spathiceo-griseâ, punctis strigisque coruleo-fuscis apicâ cerasis subulnarè indatâ, zonâ latâ fuscâ ad basim circumdatâ, columellâ livido-purpureo-ventrali, aperturaâ fuscâ livido-fuscâ.*

THE GAMBING OLIVE. Shell somewhat fusiformly ovate, ventricose, spire somewhat acuminated, columella raised, plaits distinct, peculiarly callously twisted, aperture wide open, emarginated at the upper part; fawn-grey, somewhat obscurely marked towards the apex with blue-brown dots and streaks, and encircled round the base with a broad fulvous zone, columella livid-purple, interior of the aperture livid-brown.

Valuta hatula, Gmelin, Syst. Nat. p. 3442.

Oliv. hatula, var. b, Lamarck.

L. agrosti, Adams.

Avicula aviculata, Schumacher.

Hiatula Lamarckii, Swainson.

Hab. Senegal and Mouth of the Gambia, West Africa.

This and the following species were confounded together by M. Ducloux, but they are quite distinct and inhabit very remote localities. The true *O. hatula* (pl. 3, fig. 15, of his monograph) chiefly characterized by the raised constricted growth of the columella and by its livid-purple colouring, is from the west coast of Africa, collected by Adams at Senegal, and by later travellers at the mouth of the Gambia. *O. testacea* (pl. 4, fig. 19, 20, of Ducloux' monograph), concerning which Lamarck especially notices the dark brown colouring of the spire and base of the last whorl, was collected by Humboldt and Bonpland on the shores of Mexico, and more recently by Mr. Cuming in the same locality at Real Mejico.

Species 36. (Mus. Cuming)

OLIVA TESTACEA. *Oliv. testâ fusiformi-ovata, ventricosa, spirâ acuminatâ, plisâ columellaribus calloso-ventralis, aperturaâ pitulâ, superâ emarginatâ, cinereo-griseâ, lineis fibræosis fuscis coruleo-nubralis plus minus obscure pictâ, apicâ cerasis et ad basim fuscato-fuscâ, columellâ albâ, aperturaâ fuscâ cinereo-fuscâ.*

THE TESTACEOUS OLIVE. Shell fusiformly ovate, ventri-

cose, spire acuminate, columellar plaits callously twisted, aperture wide open, emarginated at the upper part; ash-grey, more or less obscurely painted with blue-shaded brown flexuous lines, smoky-brown at the base and towards the apex, columella white, interior of the aperture violet-brown.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. v. p. 627

Oliv. hatula, pars, Ducloux.

Hab. Real Mejico, Mexico (in sandy mud at a depth of about six fathoms); Cuming.

Of a more acuminated form than the preceding species, from which it is further distinguished by its smoky or purple-brown colouring, and white columella. It may be observed that the localities of the two species are very remote from each other.

Species 37. (Mus. Steere.)

OLIVA STEEREI. *Oliv. testâ oblongo-ovata, ventricosa, spirâ brevi, acutâ, columellâ arcuâ depressâ, superâ callousâ, plisâ calloso-ventralis; griseo-fuscâ, obscure maculatâ, spirâ et zonâ basali fuscato-fuscâ, columella coruleo-ventrali-lactea, insensibilis, columellâ charact. apertura fuscâ intense purpureâ.*

STEERE'S OLIVE. Shell oblong-ovate, ventricose, spire short, sharp, columella depressed in the middle, callous at the upper part, plaits callously twisted; greyish-brown, obscurely spotted, spire and basal zone smoky-brown, sometimes bluish cream-colour, unspotted, columella ivory-white, interior of the aperture deep purple.

Oliv. hatula, pars, Ducloux.

Hab. Mouth of the Gambia, West Africa.

The *O. Steerei* is chiefly distinguished from *O. hatula* of the same locality, by its depressed white columella, whilst the general colouring of the shell is more like that of the Mexican *O. testacea*. It differs, however, from the last-named species both in the depression of the columella, which gives it a boat-shaped form, and in having a shorter spire. The coloured state of *O. Steerei* is well represented by Ducloux, under *O. hatula*, Mon. Oliv. pl. 3, f. 14. The specimen figured in the accompanying plate, represents a variety in which the entire surface of the shell is overlaid with a milk-white coating, and the interior richly purple-enameled.

I have the pleasure to name this fine species in honour of Miss Steep, a lady whose magnificent collection of Olives, and nice discrimination of their varieties of character, have been of essential service to me in the preparation of this monograph.

Species 38. (Mss. Steep.)

OLIVA AQUATILIS. *Oliv. testâ ovatâ, ventricosâ, sublux emarginatâ, spirâ brevi, callusâ, columellâ medio depressâ, superâ callâ callosâ, plicis parvis, fere ovalis, duabus basilibus fortioribus, apertura patulâ: griseo-oculosecente, strigis flexuosis saturatioribus antrique pictâ, zonis duabus, alterâ fulvâ, alterâ livido-purpureâ, cingulatâ, columellâ albâ, apertura fauce livido-purpureovente.*

THE RIPPLED OLIVE. Shell ovate, ventricose, concave beneath, spine short, callous, columella depressed in the middle, callous at the upper part, plaits small, numerous, two basal plaits stronger, aperture wide open: greyish-blue, painted throughout with flexuous streaks of a darker grey-blue, encircled at the base with two zones, one of which is fulvous, the other livid-purple, columella white, interior of the aperture tinged with livid-purple.

Oliva auriculata, DuRoi (not of Lamarck)

Hab. Brazil.

The form *O. aquatilis* is just intermediate between that

of the foregoing species and of the following: and it is further characterized by the rippled painting and divided colouring of the broad basal enamel zone.

Species 39. (Mss. Cuming.)

OLIVA AURICULARIA. *Oliv. testâ depresso-ovatâ, lato, ventricosâ, sublux concavâ, spirâ brevissimâ, callusitate ovalitâ, columellâ medio depressâ, superâ callâ callosâ, cernuosâ, plicis parvis, fere ovalis, duabus basilibus calidis, apertura patulâ: carulescente-griseâ, zonâ basali latâ, livido-fuscescente, columellâ albâ, apertura fauce livido-fuscescente.*

THE EAR-SHAPED OLIVE. Shell depressly ovate, broad, ventricose, concave beneath, spine very short, concealed by callosity, columella depressed in the middle, very callous at the upper part, warty, plaits small, almost concealed, two basal plaits strong, aperture wide open: bluish-grey, broad basal zone livid-brown, columella white, interior of the aperture pale livid-brown.

LAMARCK. *Anim. sans vert.* (De-Haeyes' edit.) vol. x. p. 525

Oliva patula, Sowerby.

Oliva rhynchophila, DuRoi.

Hab. Brazil.

This shell is remarkably distinguished by its broad gibbous growth, and enormous callous deposit on the upper part of the columella.



OLIVA.

PLATE XIX.

Species 40. (Fig. a, b, Mus. Steere.)

OLIVA STAINFORTHII. *Oliv. testâ ovatâ, crassâ, supra mediana pectiniferâ truncatâ, spirâ brevi, acuminatâ, plâcis columellaribus fortibus, latiusculis; albâ, punctis infuscescentibus, griseo-nubris, viximè aspersâ, maculis periponeis nigricantibus sparsim bifoveolatis notatâ, sutura suturâ inannulatâ, columellâ et apertura fauce eburneis.*

STAINFORTH'S OLIVE. Shell ovate, thick, peculiarly swollen above the middle, spire short, acuminate, columellar plaits strong, rather broad; white, faintly sprinkled with grey-shaded reddish dots, and marked with a very few blackish blotches disposed in two bands, unspotted next the sutures, columella and interior of the aperture ivory-white.

Hab. ———?

A new and very distinct species, in the collection of Miss Steere, which gives me an opportunity of recording my sense of the valuable additions which have been made to our knowledge of this genus by the communicated experience of the Rev. F. J. Stainforth.

Species 11. (Mus. Steere.)

OLIVA FLAMMELATA. *Oliv. testâ cylindraceo-ovatâ, spirâ subannulatâ, plâcis columellaribus subcaudatis; albidâ, caraco-foveâ reticulatâ, areis reticulatis hic illuc pernapis, columellâ basi fuscescente truncatâ, apertura fauce albidâ.*

THE FLAME-MARKED OLIVE. Shell cylindrically ovate, spire somewhat acuminate, columellar plaits rather faint; whitish, reticulated with flesh-brown, the reticulated spaces being here and there very large, columella tinged with light brown, interior of the aperture white.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 613.

Hab. West Indies.

This species is very closely allied to *O. reticulata*, but differs in not having the net-work gathered in clusters of lines at the sutures. The net-work spaces are here and there remarkably large, especially on the upper surface of the last whorl, which, in the accompanying figure, has been inadvertently turned from the observer.

Species 42. (Fig. a, Mus. Steere; Fig. b, Mus. Cuming.)

OLIVA AUSTRALIS. *Oliv. testâ oblongo-cylindraceâ, spirâ exsertâ, columellâ medio subcompressâ, plâcis numerosis, atule cili vauinis; albidâ, lineis undulatis cinereo-purpureis, sæpè prouiscis, ornatâ, anfractuosa marginis suturali punctata, columellâ et apertura fauce eburneis.*

THE SOUTHERN OLIVE. Shell oblong-cylindrical, spire exserted, columella slightly compressed in the middle, plaits numerous, soon fading with age; whitish, ornamented with wavy purple-ash lines, which are often promiscuous, sutural edge of the whorls dotted, columella and interior of the aperture ivory-white.

DUCLOS, *Mon. Oliv.* pl. 5. f. 3. 4.

Hab. ———?

The wavy marking of this species appears to be invariably of an ash-purple colour. It is of an oblong-cylindrical form, and very distinctly characterized.

Species 43. (Mus. Cuming.)

OLIVA INDUSICA. *Oliv. testâ ovoidâ, truncatâ, medio gibboso-inflatâ, spirâ brevi, columellâ medio depresso-concavâ, plâcis planulatis, apertura subpatulâ; albâ, punctis fuscescentibus, prouiscis undulatis, aspersâ, margine suturali strigis fuscis irregularibus ornatâ, basi zonâ fuscescente cingulatâ, columellâ albidâ, apertura fauce ferruginâ.*

THE INDUS OLIVE. Shell ovate, rather thin, gibbously inflated in the middle, spire short, columella depressively concave in the middle, plaits somewhat flattened, aperture rather wide open; white, sprinkled with light brown dots, promiscuously waved, sutural margin ornamented with irregular brown streaks, base encircled with a light brown zone, columella white, interior of the aperture rust-brown.

Hab. Kurrachee, mouth of the Indus.

An interesting new species, allied to *O. hirtella* and *testacea*. The surface of the shell is freckled throughout with faint brown dots disposed in promiscuous waves, and the sutural edge of the whorls is conspicuously streaked.

Species 44. (Mus. Cuming.)

OLIVA DUCLOSI. *Oliv. testâ subconico-ovalâ, crassâ, spirâ tenuidâ, spirâ exsertâ, plieis columellaribus subamplis; aurantio-luteâ, olivaceo-fusco dense reticulatâ, areis reticulâ subdivisatibus, acutè trigonis, columellâ et aperture fauce aurantio-luteis.*

DUCCLOS' OLIVE. Shell somewhat conically ovate, thick, swollen round the upper part, spire exserted, columellar plaits rather large; orange-yellow, thickly reticulated with olive-brown, the spaces of the network being rather distant and sharply triangular, columella and interior of the aperture orange-yellow.

Oliva jaspidea, Duclos, Mon. Oliv. pl. S. f. 9, 10.

Hab. Banguey, Island of Luzon, Philippines (on the sands at low water); and Society Islands (in coral sand at low water); Cuming.

The net-work colouring of this species is so thickly developed as only to leave scattered sharply triangular spaces. Sometimes, however, it is much confused.

Having to apply the term *jaspidea* to Lamarek's *O. coarctatilis*, in consequence of its being so named by Gmelin

under the head of *Foluta*, I have the pleasure to dedicate this species to M. Duclos, in acknowledgment of the value of his *Oliva* figures, of which it is much to be regretted he never published any descriptions.

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

OLIVA LENTIGINOSA. *Oliv. testâ oblongâ, subcylindricâ, crassâ, spirâ exsertâ, plieis columellaribus subamplis, brevibus; lutescente-albâ, purpureo-cinereo lentiginosâ, maculis promiscuis nigricantibus infra suturas et in medio cingulatâ, columellâ et aperture fauce lutescente-albis.*

THE FRECKLED OLIVE. Shell oblong, somewhat cylindrical, thick, spire exserted, columellar plaits rather large, short; yellowish-white, freckled with light purple-ash, encircled beneath the sutures and round the middle with promiscuous blackish spots, columella and interior of the aperture yellowish-white.

Hab. ———?

An interesting new species, of which Miss Steere possesses the two characteristic specimens here figured.



52 a



52



52 b



53

OLIVA.

PLATE XX.

Species 46. (Mus. Cuming.)

OLIVA GRACILIS. *Oliv. testâ gracili-fusiformi, basi truncatâ, Terrelliformi, spirâ elongato-exsertâ, anfractâ ultimo brevi, aperturâ cernis descendente, columellâ arcuatâ, superne callosâ, plicis subcorticalis; albâ, rufescente-fusco sparsim et irregulariter reticulatâ, zonâ spiræico-fuscâ ad basim cingulatâ, spirâ callosâ, parum pictâ, columellâ et aperturâ favee albâ.*

THE SLENDER OLIVE. Shell slenderly fusiform, truncated at the base, Terrellium-shaped, spire elongately exserted, last whorl short, descending towards the aperture, columella curved, callous at the upper part, plaits somewhat twisted; white, sparingly and irregularly reticulated with red-brown, encircled with a fawn-brown zone round the base, spire callous, but little painted, columella and interior of the aperture white.

BRODERIP and **SOWERBY**, Zool. Journal, vol. iv. p. 379.

Hab. Xipixapi, West Columbia (in sandy mud at a depth of about nine fathoms); Cuming.

Remarkable for the descending convolution of the last whorl, which gives a prolonged appearance to the spire, whilst the shell, being light and broadly truncated at the base, partakes of the form of *Terrellina*. The net-work colouring is extremely partial in its distribution.

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

OLIVA CINCTA. *Oliv. testâ ovatâ, leviculatâ, inflatâ, basim versus effusâ, spirâ brevi, columellâ medio depressâ, plicis colloso-corticalis, aperturâ subpatulâ; olivocœnicâ, fusco nudique obscure minute punctatâ, strigis brevibus perpaucis infra suturas, fuscâ angustâ suturatiore in medio cingulatâ, columellâ albidâ, fusco zonatâ, aperturâ favee fusâ.*

THE GIRDLED OLIVE. Shell ovate, rather thin, inflated, effused towards the base, spire short, columella depressed in the middle, plaits callously distorted, mouth rather wide open; olive-ash, obscurely minutely dotted throughout with brown, with a few short brown streaks beneath the sutures, and encircled with a narrow darker band round the middle, columella whitish, zoned with brown, interior of the aperture brown.

Hab. — ?

There is a strong apparent resemblance between this species and *O. Indusica*, but they differ materially on comparison.

Species 48. (Mus. Cuming.)

OLIVA BIFLICATA. *Oliv. testâ abbreviato-ovatâ, crassi, obesâ, longitudinaliter substriatâ, spirâ brevi, columellâ arcuatâ, levi, superne callosâ, ad basim biflicatâ. aperturâ basi effusâ; cœrulescente-grisâ, suturis fuscis, columellâ basique intense violaceis, aperturâ cœrulescente-grisâ, margine violacâ.*

THE TWO-PLAITED OLIVE. Shell abbreviately ovate, thick, stout, slightly striated longitudinally, spire short, columella arched, smooth, callous at the upper part, two-plaited at the base, aperture effused at the base; bluish-grey, sutures brown, columella and base deep violet, aperture blue-grey, violet at the edge.

SOWERBY, Tankerville, Cat. App. p. 33.

Hab. Monterey, California (in the sands at low water); Hinds.

Well distinguished by its short obese growth, and two basal columellar plaits.

Species 49. (Mus. Cuming.)

OLIVA KALEONTINA. *Oliv. testâ oblongo-cylindricâ, spirâ exsertâ, plicis columellaribus parviscentis; purpurascete-spadicâ, rufo-castaneâ interruptè sacculatâ et variegatâ, maculis oblongo-quadratis infra suturas, columellâ et aperturâ favee purpurascete-albâ.*

THE WOVEN OLIVE. Shell oblong-cylindrical, spire exserted, columellar plaits rather small; purple-fawn, interruptedly spotted and variegated with reddish-chestnut, with oblong-square spots beneath the sutures, columella and interior of the aperture purpleish-white.

DUCLOS, Mon. Oliv. pl. 8. f. 7, 8.

Hab. Bay of Guayaquil and Gallapagos Islands (at a depth of from six to twelve fathoms); Cuming.

There is a peculiarity in the form and colouring of this species which appears constant, and renders it easy to be recognized.

Species 50. (Mus. Cuming.)

OLIVA RUFULA. *Oliv.* testâ oblongâ, spirâ brevi, depressâ, anfracta ultimo ad extremitatem posticam apertura callosoproducto, plicis columellaribus subcauculis; fuscescente-spadicâ, rufo-castaneo obliquè fuscâ, lineis obscure diagonaliter decussatâ, columellâ et apertura favee subpallidâ.

THE REDDISH OLIVE. Shell oblong, spire short, depressed, last whorl callously produced at the posterior end of the aperture, columellar plaits rather faint; brownish-fawn, obliquely banded with reddish-chestnut, and obscurely diagonally crossed with lines of the same colour, columella and interior of the aperture somewhat fawn-tinted.

DIAGNOS. *Mon. Oliv.* pl. 19. f. 9, 10.

Hab. Cagayan, Island of Mindanao, Philippines (in sandy mud at a depth of twenty fathoms); Cuming.

The form of this species is colouring is that of *O. naura*; but the cross-banded style of colouring is characteristic and appears constant.

Species 51. (Mus. Cuming.)

OLIVA CONTORTUPLICATA. *Oliv.* testâ ovatâ, tenuicatâ, medio gibbosâ, subinflatâ, spirâ brevi, acuminatâ, callosâ, apice acutâ, columellâ curvè arcuatâ, plicis peculiariter fortiter contortis; cærulescente-griseâ, zonâ angustâ castaneâ basi cingulatâ, columellâ albi, apertura favee intense castaneâ.

THE TWISTED-PLAITED OLIVE. Shell ovate, rather thin, gibbous and slightly inflated in the middle, spire short, acuminated, callous, sharp at the apex, columella much arched, plaits peculiarly strongly twisted; blue-grey, encircled round the base with a narrow chestnut zone, columella white, interior of the aperture very dark chestnut.

Hab. Senegal, West Africa.

Very remarkably distinguished by a peculiar twisted growth of the plaited portion of the columella, above and around which is a depressed groove, coloured by the same dark chestnut as the interior of the shell.

Species 52. (Mus. Cuming.)

OLIVA MULTIPLICATA. *Oliv.* testâ oblongo-cylindricâ, subangustâ, spirâ acuminatâ, plicis columellaribus subtilibus, numerosissimis, apertura angustâ; albâ, fusco-rubente nudique minutissimè et exièntè reticulatâ, maculis perparvis punctisque medio promissè cingulatâ, lineâ maculis infra suturas.

THE MANY-PLAITED OLIVE. Shell oblong-cylindrical, rather narrow, spire acuminated, columellar plaits fine and very numerous, aperture narrow; whitish, very minutely and delicately reticulated throughout with brown-red, promiscuously encircled round the middle with a few blotches and dots, with blotches of lines beneath the sutures.

Hab. — ?

This species is also remarkably distinct, having the columellar plaits much finer and more numerous than in any hitherto known. The pattern consists of a delicate net-work of most elaborate fabric, very similar to that of the *Conus gloria-maris*.

Species 53. (Mus. Cuming.)

OLIVA TESSELLATA. *Oliv.* testâ ovatâ, crassâ, spirâ brevi apice acutâ, plicis columellaribus latiusculis; luteâ, purpureo-nigricante sparsim maculatâ, columellâ et apertura favee intense purpureo-violaceis.

THE TESSELLATED OLIVE. Shell ovate, thick, spire short, sharp at the apex, columellar plaits rather broad, yellow, sparingly spotted with purple-black, columella and interior of the aperture intense, purple-violet.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 620.

Cylindrus tigrinus, Meuschen.

Voluta tigrina, Schreuer.

Hab. Island of Ticao, Philippines; Cuming.

This well-known species stands alone in the genus, there being no other allied to it in respect of its characteristic style of painting.



21



22 a



22 c



22 b



24 a



24 b



24 c



25 a



25 c



25 b

OLIVA.

PLATE XXI.

Species 54. (Fig. a, b, Mus. Steere. Fig. c.
Mus. Cuming.)

OLIVA VOLUTELLA. *Oliv. testâ oblongo-cylindraceâ, spirâ erectâ, apice acutâ, pleris columellaribus uniaeriosis, natis basalibus; carinâ-præcisâ aut fuscâ-purpureâ, inaperturâ, suturis et zonâ basali castaneo-fuscis, zonâ laterali rubra raris palliâ tubâ, columellâ allidâ, apertura foveâ latens costata.*

THE LITTLE VOLUTE OLIVE. Shell oblong-cylindrical, spire exerted, sharp at the apex, columellar plait numerous, all basal; blue-grey or brown-purple, unspotted, suture and basal zone chestnut-brown, sometimes, but rarely, pale yellow, columella whitish, interior of the aperture very dark chestnut.

LAMARCK, *Anim. sans vert.* (De-Shayes' edit.) vol. x. p. 623.
Olivæ carolinæ, Wood.

Hab. Panama (on mud banks at low water). Cuming.

The whole of the columellar plaits of this species are upon the callous basal zone. The shell varies in colour from a blue-green to a very dark chestnut-purple.

Species 55. (Fig. a, b, Mus. Metcalf.)

OLIVA ANCELLARIOIDES. *Oliv. testâ oblongâ, crassa, spirâ erectâ, uniaeriatâ, pleris columellaribus uniaeriosis, natis basalibus; suturâ carinata, zonâ albidâ, basi infra suturâ carinâ strigatâ, zonâ basali palliâ, tubâ, columellâ et apertura foveâ allidâ.*

THE ANCELLARIA-LIKE OLIVE. Shell oblong, thick, spire exerted, acuminate, columellar plait callously twisted, dull carmelion, unspotted save beneath the suture, where it is faintly streaked, basal zone paler, columella and interior of the aperture whitish.

Hab. Kurrachee, Mouth of the Indus.

The colour and general aspect of this species is very similar to that which prevails among the *Ancellaria*. The only specimen known to me, in addition to the one here

figured from Mr. Metcalf's collection, belongs to Mr. Cuming, with the above-named locality attached to it.

Species 56. (Fig. a, b, Mus. Cuming.)

OLIVA PAVILLUS. *Oliv. testâ oblongo-conicâ, crassa, obtusâ, subfusiformi, spirâ nulliter erectâ, pleris columellaribus parvis; elatâ, fuscosecate obscure notatâ, natis reticulatis costatis asperis infra suturas.*

THE PEG OLIVE. Shell oblong-conical, thick, stout, rather fusiform, spire largely exerted, columellar plaits few in number; ivory-white, obscurely marked with light brown, with scattered spots of chestnut network beneath the sutures.

Hab. —?

The form and painting of this species both remind one of certain varieties of *Claus reticulatus*.

Species 57. (Fig. a, b, c, Mus. Steere.)

OLIVA LIGNEOLA. *Oliv. testâ ovatâ, supra tumidiusculâ, spirâ brevi, subacutâ, pleris columellaribus uniaeriosis, natis basalibus; foveâ aut nigricante-costatâ, inaperturâ, zonâ basali palliâ, nigricante-costatâ, tubâ, columellâ albidâ, int. rubra purpurascente tinctâ, apertura foveâ exarabescente-allidâ.*

THE WOODEN OLIVE. Shell ovate, rather swollen round the upper part, spire short, rather sharp, columellar plaits numerous, rather faint; fulvous or blackish-brown, unspotted, basal zone paler, stained with blackish chestnut, interior of the aperture bluish-white.

Hab. —?

The specimens here figured from Miss Steere's collection appear to represent a species distinct from any described hitherto, one of a fulvous-brown colour, the other a very dark brilliant chestnut, of which colour both have a characteristic stain at the base.



OLIVA.

PLATE XXII.

Species 58. (Fig. *a*, Mus. Steere; Fig. *b, c*,
Mus. Cuming.)

OLIVA JASPIDEA. *Oliv. testâ acuminato-oblongâ, sulcisimifurcâ, spirâ exsertâ, columellâ multiplicatâ; albâ, fusco profusè minutè punctatâ, aequalis reticulatis infra suturas et ad zonam basalem, interduâ cinereo aut caruleo nebulatâ et albipunctatâ.*

THE JASPER OLIVE. Shell acuminately oblong, somewhat fusiform, spire exserted, columella finely plaited; whitish, profusely minutely dotted with brown, with blotches of net-work beneath the sutures and on the basal zone, sometimes clouded with ash or blue and dotted with white.

Valuta jaspidea, Gmelin, Syst. Nat. p. 3142.

Oliva consoidalis, Lamarck.

Hab. West Indies. Red Sea.

This pretty species is well characterized by the blotches of net-work beneath the sutures, and by a pattern of similar design on the basal zone, whilst the intermediate space is curiously wave-dotted. The specimens represented at Fig. 58 *a* and 58 *c* are from the West Indies, whilst the blue-clouded variety at 58 *b* is from the Red Sea.

Species 59. (Mus. Steere.)

OLIVA VOLVARIIFORMES. *Oliv. testâ oblongo-ovata, spirâ brevi, acutâ, columellâ multiplicatâ, plicis brevibus, subprominentibus; indigè ricidè castaneâ, columellâ et apertura fusco carulescente-albis.*

THE VOLVARIA-LIKE OLIVE. Shell oblong-ovate, spire short, sharp, columella many-plaited, plaits short, rather prominent; bright chestnut throughout, columella and interior of the aperture bluish-white.

DUCLOS, *Mon. Oliv.* pl. 25, t. 14

Hab. — ?

The uniform chestnut colouring appears to be peculiar to the species in this instance.

Species 60. (Fig. *a, b, c, f*, Mus. Cuming.

Fig. *d, e*, Mus. Steere.)

OLIVA CARNEOLA. *Oliv. testâ oblongo-cylindricâ, spirâ brevi, columellâ multiplicatâ, plicis brevibus; eburneâ, purpurascente dense reticulatâ, angustis albis marginè postico punctatâ, deinde testâ crassâ, medio tumidâ, plicis subcaulis, uncinato-caruleo ricidè fasciatâ.*

THE CARNELION OLIVE. Shell oblong-cylindrical, spire short, columella many-plaited, plaits short; ivory-white, thickly reticulated with light purple, posterior edge of the last whorl dotted, then shell thickened, swollen round the middle, columellar plaits somewhat faint, banded with bright orange-carnelion.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. v. p. 621. Varietates.

Oliva bolusina and *Athenia*, Duclos.

Hab. Philippine Islands (at depths varying from ten to sixty fathoms); Cuming.

This species varies from the oblong-cylindrical purple-netted state represented at Fig. 60 *a, b*, to the stout rich orange-carnelion banded state at Fig. 60 *e*, the latter being probably an overcoating of the former. In the specimen figured at 60 *d, c*, a mixture of these patterns and colours is represented, in which the purple net-work of the former state is seen beneath a layer of the carnelion enamel of the latter.



OLIVA.

PLATE XXIII.

Species 61. (Fig. *a, b*, Mus. Steere.)

OLIVA SEMI-STRIATA. *Oliv. testa annulatim-areolata spirâ erectâ, basi labe effusâ, truncatâ, angustius albâ; diaphano postico concentricè lacunosstriato, striâ exar-risâ, intusolum obscurâ; columellâ arcuatâ, depressâ, basi obsolete uniplatâ; zoniâ intusû nigricâ; operculo, spirâ callosâ, albâ, suturis castaneobrunneis, columellâ basiq;e albis, apertura foveâ intusû castaneobrunneâ.*

THE HALF-STRIPED OLIVE. Shell acuminate ovate, spire exerted, base broadly effused, truncated, posterior half of the last whorl concentrically deeply striated, striæ close-set, sometimes obsolete, columella arched, depressed, absolutely one-plaited at the base; greyish lead-colour, encircled with a narrow yellowish zone, spire callous, whitish, sutures chestnut-brown, base and columella white, interior of the aperture dark chestnut-brown.

GRAY, Zool. Beechey's Voyage, p. 130, pl. 36, f. 10.
Hab. Salango, West Columbia; Cuning.

This species is well characterized by the upper or posterior portion of the last whorl being very closely concentrically grooved with striae, which in the preceding whorls become obliterated by the flow of enamel from the aperture.

The locality of *O. semi-striata* is not given in Beechey's Voyage. The species was observed at Salango, by Mr. Cuning, moving about by hundreds with great rapidity in the wet sand.

Species 62. (Mus. Steere.)

OLIVA COLUMELLARIS. *Oliv. testa annulatim-areolatâ, depressâ, spirâ breviusculâ, erectâ, basi labe effusâ, truncatâ, columellâ usque ad spicam crassè callosâ, basi obsolete uniplatâ; operculo uniplatâ, intusolum lacunosstriatâ, columellâ albidâ, apertura, foveâ intusû castaneobrunneâ.*

THE COLUMELLAR OLIVE. Shell acuminate ovate, depressed, spire rather short, sharp, base broadly effused, truncated, columella thickly callous all along to the spire, obsolete one-plaited at the base; bluish lead-colour, two-zoned with yellowish-white, columella white, interior of the aperture dark chestnut-brown.

SOWERBY, Tankerville Catalogue, App. p. 35.

Hab. Payta, Peru (in fine sand at low water). Cuning.

Remarkably distinguished by a very copious deposit of enamel along the columella on to the spire.

Species 63. (Fig. *a, b*, Mus. Steere.)

OLIVA LINEOLATA. *Oliv. testa non annulatim-areolatâ, erectâ, spirâ callosè erectâ, callusâ, columellâ arcuatâ, basi subseriatè uniplatâ et uniplatâ, spanducâ latâ, foveâ foveâ infra suturas striatâ et reticulatâ, basi uniplatâ et albidâ et operculo foveâ intusû castaneobrunneâ.*

THE LINE-NEPTED OLIVE. Shell acuminate oblong, thick, spire much exerted, callous, columella arched, somewhat obscurely many-plaited and twisted at the base; fawn-white, streaked and reticulated beneath the sutures with brown lines, base unspotted, columella and interior of the aperture deep violet-purple.

GRAY, Wood's Index Testaceologicus, Supp. pl. 5, f. 37.
Oliva lineata, Duroi.

Hab. California.

The net-work of this species descends in rather long lines from the sutures. The columella and interior of the shell are well distinguished by their rich violet-purple colouring.

Species 64. (Fig. *a*, Mus. Steere; Fig. *b* Mus. Cuning.)

OLIVA NIVA. *Oliv. testa annulatim-areolatâ, erectâ, spirâ callosè erectâ, callusâ, columellâ obsolete uniplatâ, operculo uniplatâ; intusolum albidâ, infra suturas roseo-purpureâ crassè granosâ; reticulatâ, foveâ castaneâ intusû uniplatâ et albidâ, basi uniplatâ et operculo foveâ albidâ.*

THE SNOWY OLIVE. Shell acuminate oblong, thick, spire much exerted, callous, columella obscurely many-plaited, callous at the upper part; yellowish-white, delicately prominently reticulated beneath the sutures with rose-purple, the reticulated band being paler in the middle, base unspotted, columella and interior of the aperture white.

GRAY, Zool. Gmelin, Syst. Nat. p. 3142.

Oliva nivea, Lamarek.

Hab. West Indies.

Embezzled with a broad band of delicately painted rose-purple net-work upon a semitransparent yellowish-white ground, the columella and interior of the aperture being free from any tinge of colour.

Species 65. (Fig. *a, b*, Mus. Steerc.)

OLIVA ESTHER. *Oliv. testâ ovatâ, crassâ, obsâ, spirâ levissimâ, columellâ arcuatâ, obscure multiplicatâ, superâ callosâ; albâ, lineis plerisque fuscisradialibus irregulariter undatâ, rix reticulatâ, fasciâ castaneâ angustâ ad basim, columellâ et aperturâ foveâ albis*

THE ESTHER OLIVE. Shell ovate, thick, stont, spire rather short, columella arched, obscurely many-plaited, callous at the upper part. white, irregularly waved, scarcely reticulated, with numerous pale brown lines, with a narrow chestnut band at the base, columella and interior of the aperture white.

DUCLOS, Mon. Oliv. pl. 3. f. 7, 8

Hab. —?

A shell of short stout growth, in which the painting has the character of an unravelled net-work.

Species 66. (Mus. Cuning.)

OLIVA NANA. *Oliv. testâ subtrigono-ovatâ, superâ tumidâ, callosâ, spirâ brevi, columellâ callâ callosâ, præcipuè reversâ spiram, basi obscure uni-bi-pliatâ; albâ aut spadicæo-lutescente, medio lineis castaneis arcuâ angulâris concentricè undatâ.*

THE DWARF OLIVE. Shell somewhat triangularly ovate, swollen and callous round the upper part, spire short, columella very callous towards the spire, base obscurely one- or two-plaited; whitish or light fawn-yellow, concentrically waved round the middle with zigzag chestnut lines.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 631.

Toluta micans, Billwyn.

Hab. West Indies.

This little species is well characterized by its swollen callous growth round the upper or posterior edge of the whorls, and by its concentric zigzag style of painting.



OLIVA.

PLATE XXIV.

Species 67. (Fig. *a*, Mus. Steere; Fig. *b*,
Mus. Cuming.)

OLIVA TILICOZONIAS. *Oliv. testâ acuminato-oblongâ, spirâ acutè exsertâ, columellâ multiplicatâ, plâcis subtilibus, confertis; antrâto-luteâ, zonâ angustâ distinctâ, albâ, rugulatâ, ângro prominènti leuigitâ et punctatâ, columellâ et apertura fuscâ albis.*

THE WHITE-ZONED OLIVE. Shell acuminately oblong, spire sharply exserted, columella many-plated, plaits fine, close-set; orange-yellow, encircled with two distant narrow white zones, and prominently freckled and dotted with black, columella and interior of the aperture white.

GRAY. Zool. Beechey's Voyage, p. 130, pl. 36, f. 24.
Hab. Senegal.

Distinguished by a very peculiar style of painting, which consists of a uniform orange-yellow irregularly freckled and spotted with black, and encircled by two narrow white bands, one next the sutures, over which the black appears in larger freckles, and one a little above the anterior or basal zone.

Species 68. (Mus. Steere.)

OLIVA HIEROGLYPHICA. *Oliv. testâ oblongâ, supra in-aequalisulcâ, spirâ subretractâ, plâcis columellaribus anarctis, distinctis; cincturâ, albâ, antrâto haeroglyphicâ fuscâ albis triseriali rugulatâ.*

THE HIEROGLYPHIC OLIVE. Shell oblong, rather swollen round the upper part, spire slightly retracted, columellar plaits numerous, distinct; ivory-white, shining, encircled by three rows of pale brown hieroglyphic marks.

Hab. — ?

Amplly distinguished by its peculiarities of form and marking.

Species 69. (Fig. *a, b, c, d*, Mus. Cuming.)

OLIVA ZENOPTRA. *Oliv. testâ ovali, crassâ, plus angustâ, spirâ brevi, columellâ obsolete leuigitâ, superiôrè calidè callusâ et chloracâ, lineis subtilibus nodatis*

ântio bifosculatâ rugulatâ, lateriorâ griseo-fuscâ-veatè, antrâto parvis aut strigis nigricantibus, carinâ-midiatâ, prominènti nodatâ, zonâ pallidâ costatâ ad basim, columellâ albiâ, antrâto naphi costatâ lateriorâ luteâ.

THE VARIABLE OLIVE. Shell ovate, thick, more or less stout, spire short, columella obsolete finely plaited very callous at the upper part; ivory-white, encircled round the middle with two bands of five zigzag lines, sometimes grayish-brown, prominently marked with blue-shaded blackish streaks or small spots, with a pale chestnut zone at the base, columella white, sometimes stained with a large chestnut blotch.

DUCLOS. Mon. Oliv. pl. 3, f. 11, 12.

Hab. Madagascar

The colouring of this species is so exceedingly variable, that it requires a collection of many specimens to understand the relation that subsists between the external conditions of it, represented in the accompanying plate.

Species 70. (Fig. *a, b*, Mus. Cuming; Fig. *c*,
Mus. Metairie.)

OLIVA CARULLA. *Oliv. testâ acuminato-oblongâ, spirâ exsertâ, columellâ acutâ, basi contractâ, plâcis confertis; albâ, cincturâ circuli luteâ, lateriorâ fuscâ subtilissimè punctatâ, sutureis basi que plus antrâto callosâ, apice nigricatè, columellâ et apertura fuscâ plus-âque costatâ luteâ.*

THE BLUE OLIVE. Shell acuminately oblong, spire exserted, columella arched, twisted at the base, plaits obsolete; whitish, brightly stained with blue, sometimes very finely dotted with brown, base and sutures more or less deeply stained with chestnut, grey blackish, columella and interior of the aperture generally stained with chestnut.

Hab. Carthagenâ, Central America?

An interesting small species, of mostly a bright blue porcelain character, sometimes, but rarely, finely dotted with brown, and encircled at the base with very dark chestnut.



72 a



72 b



72 c



72 d



72 e



OLIVA.

PLATE XXV.

Species 71. (Mus. Steere.)

OLIVA BIALBATA. *Oliv. testâ acuminato-oblongâ, subangustâ, spirâ exsertâ, apice acutâ, columellâ leviter arcuata, plâcis obliquis, distantibus, foveâ ecaudâ; chlorâ, punctis foveâ sagittariis infra sulcum nodatâ, basi foveâ sparsâ tractâ.*

THE BILWAILED OLIVE. Shell acuminate oblong, rather narrow, spire exerted, sharp at the apex, columella slightly curved, plaits oblique, distant, almost faded; ivory-white, marked beneath the suture with arrow-headed brown dots, base sparingly stained with brown.

Hab. — ?

This species appears to be distinct in respect of form, and may prove to be uniformly as colourless as the specimen here figured.

Species 72. (Fig. a, Mus. Cuming;
Fig. b, Mus. Steere.)

OLIVA STRIGATA. *Oliv. testâ ovatâ, tumidiusculâ, Eburnâ, spirâ exsertâ, columellâ callousâ, basi nâplicitâ; sulcâ subplicâ, strigis foveasculâbus nodatis longitudinaliter pictâ, columellâ albâ, apertura foveâ foveasculâ.*

THE STREAKED OLIVE. Shell ovate, rather swollen, Eburna-shaped, spire exerted, columella callous, one-plaited at the base; dull fawn-colour, painted longitudinally with light brown streaks, columella white, interior of the aperture light brown.

Hab. West Indies.

Distinguished by its Eburna-like form, and characteristic striped painting.

Species 73. (Fig. a, Mus. Cuming;
Fig. b, c, d, e, Mus. Steere.)

OLIVA UNDATELLA. *Oliv. testâ cylindrico-ovâtâ, spirâ breviusculâ, apice acuminatâ, columellâ basi quadruplicatâ, plâcis planulatis, suprâ multiplicatâ, plâcis ecaudatis, subdistansibus; albâ, verrucâ-præco et foveâ euriâ nodatâ et notatâ, arcuâ trigonis albidis prænotatis, interduâ unânio verrucâ-singulatâ, zonâ basali lateascente, lineis foveis strigatâ, columellâ albidâ, plâcis basalibus sæpissimâ intusâ purpureâ tractis.*

THE WAVED OLIVE. Shell cylindrically ovate, spire rather short, acuminate, columella four-plaited at the base, plaits flattened, many-plaited above, plaits rounded and rather distant; whitish, variously waved and clouded with blue-grey and brown, with promiscuous whitish triangular spaces, basal zone yellowish, streaked with brown lines, columella whitish, basal plaits most frequently stained with deep purple.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 650. Varieties.

Oliva nodulosa and *azobona*, DuRoi.

Hab. Bay of Panama (in sand and on mud banks at low water); Cuming.

It has been necessary to figure several examples of this species to show its variety of colouring, the pattern of which is sometimes disposed in promiscuous waves and sometimes in broad triangular dashes.

Species 74. (Fig. a, b, Mus. Steere.)

OLIVA ANZORUA. *Oliv. testâ acuminato-oblongâ, subangustâ, spirâ exsertâ, columellâ superâe callousâ, infra arcuatâ, latè hiplicatâ, plâcis divise multiplicatis, plâcis superioribus peculiariter interruptis, apertura basi subeffusâ; cinerescens-albâ, lineis foveis acutè longitudinaliter nodatâ, zonâ basali spulicâ-castaneâ, columellâ et apertura foveâ purpureasculâ-albis.*

THE BELTED OLIVE. Shell acuminate oblong, rather inflated, spire exerted, columella callous at the upper part, arched beneath and broadly two-plaited, the plaits being divided into numerous other small plaits, of which the upper are peculiarly interrupted, aperture somewhat effused at the base; ash-white, sharply longitudinally waved with brown lines, basal zone fawn-chestnut, columella and interior of the aperture purpleish-white.

DUROU, *Mon. Oliv.* pl. 5. f. 3, 4.

Hab. Nipisapi, West Columbia (in sandy mud at the depth of ten fathoms); Cuming.

This very pretty species is constantly distinguished by its delicate wave-streaked painting and dark-brown basal zone. The plaiting of the columella, as above described, is also peculiar.



OLIVA.

PLATE XXVI.

Species 75. (Mus. Steere.)

OLIVA PYGMEA. *Oliv. testâ cylindraceo-oblongâ, spirâ brevî, apice acutâ, columellâ levigatâ, nisi ad basin pliatâ, plicis angustis, interstitiis subprofundis; aurantiâ-luteâ, rubi-fusco curvè nebulatâ et punctatâ, columellâ et apertura foveâ albâ.*

THE PYGMY OLIVE. Shell cylindrical oblong, spire short, sharp at the apex, columella smooth, except that it is plaited at the base, the plaits being small and the interstices between them rather deep; orange-yellow, clouded and dotted with red-brown, columella and interior of the aperture white.

Hab. — ?

This is, perhaps, nearest allied to *O. ispidata*, but differs sufficiently from any of the varieties of that species.

Species 76. (Mus. Cuming.)

OLIVA ZANOEIA. *Oliv. testâ ovata-nutulo-oblongâ, truncatâ, basi sub-fusâ et truncatâ, spirâ exsertâ, columellâ basin versus pliatâ, plicis parvisoculis; albâ, purpureo-ceruleo-fusco latè bifasciatâ, subpellucidâ, quasi curvâ, zonâ angustâ laterali operâ prope ad basin.*

THE HORNY OLIVE. Shell acuminately oblong, rather thin, somewhat effused and truncated at the base, columella plaited towards the base, plaits rather small; whitish, broadly two-banded with purple-brown, rather transparent, as if horny, with a narrow opaque yellowish band at the base.

DECELOS, Mon. Oliv. pl. 2. f. 9, 10.

Hab. — ?

A very distinct species, remarkable for its shining horny appearance, whilst the dark purple-brown bands which encircle the shell are seen through in the interior.

Species 77. (Mus. Steere.)

OLIVA PANNICULATA. *Oliv. testâ oblongâ, superâ truncatâ, spirâ exsertâ, columellâ undique pliatâ; eburnâ, porpanceo-fusco pallidissimè nudato-nebulatâ, maculis quadratis in medio et infra suturas notatâ.*

THE SILK-CLAD OLIVE. Shell oblong, rather swollen round the upper part, spire exserted, columella plaited throughout; ivory-white, very faintly wave-

clouded with purplish-brown, marked round the middle and beneath the sutures in square spots.

DECELOS, Mon. Oliv. pl. 5. f. 15-18.

Hab. — ?

Very faintly marked, but well characterized by its form, and by the rows of square spots round the middle and beneath the sutures.

Species 78. (Fig. *a, b*, Mus. Cuming.)

OLIVA FULGIDA. *Oliv. testâ fusiformi-oblongâ, truncatâ, subinflatâ, spirâ eadè exsertâ, basi sub-fusâ et truncatâ, basi biplicatâ; albâ, aurantiâ-fusco pallidissimè undato-nebulatâ, lineis aut maculis parvis linearibus supra et infra marginatâ, zonâ basali callosâ, lactâ.*

THE GLITTERING OLIVE. Shell fusiformly oblong, rather thin and inflated, spire much exserted, base rather effused and truncated, columella arched, two-plaited at the base; white, very faintly wave-clouded with orange-brown, margined above and below with lines or small linear spots, basal zone callous, cream-coloured.

Hab. West Indies.

A delicately-coloured species, of which the basal zone is more than usually callous and of a clear cream-colour.

Species 79. (Mus. Cuming.)

OLIVA PICTA. *Oliv. testâ cylindraceo-acutâ, superâ truncatâ, spirâ brevissimâ, columellâ subcallosâ, antique pliatâ; fulvo-olivaceâ, fusco nebulatâ punctisque castaneis subtrigonis undique promiscuè pictâ, anfractuâ marginâ infra suturas castaneo punctatâ, columellâ exarabescente-albâ, apertura foveâ olivaceo-fusâ.*

THE PAINTED OLIVE. Shell cylindrical ovate, swollen round the upper part, spire very short, columella rather callous, plaited throughout; fulvous orange, clouded with brown and everywhere promiscuously painted with subtriangular chestnut dots, edge of the whorls beneath the sutures dotted with chestnut, columella blueish-white, interior of the aperture olive-brown.

Hab. Philippine Islands; Cuming.

A characteristic new species, distinguished by its short and cylindrical form and triangularly dotted marking.

October. 1850.

Species 80. (Fig. a, b, c, Mus. Steerc.)

OLIVA TERGINA. *Oliv. testâ oblongâ, tumidiusculâ, crassâ, basi truncatâ, spirâ exsertâ, callusâ, columellâ arcuatâ, subexcavatâ, superiè callusâ, infriâ obliquè plicatâ: lutescente-albâ aut lacteâ, fusco vel caruleo-fusco densè reticulatâ, arcis interdum interruptis, spirâ et zonâ basali immaculatâ, columellâ et apertura fauce cernulescente-albâ.*

THE HIDE OLIVE. Shell oblong, rather swollen, thick, truncated at the base, spire exerted, callous, columella arched, slightly excavated, callous at the upper

part, plaited obliquely beneath; yellowish-white or cream-colour, thickly reticulated with brown or blue-brown, the spaces being sometimes interrupted, spire and basal zone unspotted, columella and interior of the aperture bluish-white.

DUCLOS, Mon. Oliv. pl. 2. f. 13-16.

Hab. Conchagua. Central America (on sand-banks).
Cuming.

Distinguished mainly by its callous growth and densely splashy pattern of net-work.



OLIVA.

PLATE XXVII.

Species 81. (Fig. *a, b*, Mus. Steere.)

OLIVA ORAZA. *Oliv. testâ acuminato-oblongâ, crassiusculâ, spirâ erectâ, columellâ multiplicatâ; choracâ, lineâ flavâ, fasciâ fuscâ, costâ latâ rubra pallidissimâ tectâ, apicâ apicâ caruleo-viride, anagâ rufâ-aurantâ.*

THE RING-GRAIN OLIVE. Shell acuminately oblong, rather thick, spine exerted, columella many-plaited, ivory-white, sometimes faintly marked with light brown flexuous lines, apex now bluish, now reddish-orange.

LAMARCK, ANIM. SANS-VERT. (Deshayes edit.) vol. x. p. 631.
Hab. — ?

The colouring of the apex seems to be a characteristic feature in this species.

Species 82. (Fig. *a, b*, Mus. Steere.)

OLIVA TRITICOLA. *Oliv. testâ subfuscatâ, spirâ rectâ erectâ, columellâ basi obscure multiplicatâ, callusâ-aurantâ, albâ, rufâ-fuscâ, conspurcâ tessellatâ et striatâ.*

THE WHEAT-GRAIN OLIVE. Shell somewhat fusiform, spine much exerted, columella obscurely one-plaited at the base, callously twisted, whitish, conspicuously tessellated and streaked with red-brown.

DECIOS, MON. OLIV. pl. 1. f. 3.

Hab. — ?

Distinguished by its elongated form and blotely tessellated painting.

Species 83. (Fig. *a, b*, Mus. Steere.)

OLIVA MODESTA. *Oliv. testâ cylindrico-oblongâ, spirâ recumbentâ, columellâ rectâ, multiplicatâ, albâ, fuscâ, costâ latâ fuscâ, anagâ punctatâ, fuscâ, piceâ, anagâ subalbâ-âretâ.*

THE MODEST OLIVE. Shell cylindrically oblong, acuminate at the apex, columella straight, many-plaited,

whitish, promiscuously rather obscurely blotched and dotted with brown.

Hab. — ?

The marking of this species bears some little resemblance to that of *O. kalcutana*.

Species 84. (Fig. *a, b*, Mus. Steere.)

OLIVA MONILIFERA. *Oliv. testâ subacuminato-oblongâ, spirâ erectâ, columellâ subarcuatâ, basi multiplicatâ, albâ, rufâ-fuscâ, costâ saturatâ in strigis descendente, debile dense variegatâ, anfractuum anagâ superâ nitide castanea punctatâ, basi castanea fasciatâ.*

THE NECKLACE-MARKED OLIVE. Shell somewhat acuminately oblong, spine exerted, columella slightly arched, many-plaited at the base, white, with reddish-brown descending in streaks from the sutures, then thickly variegated, upper edge of the whorls marked with a neat row of chestnut dots, with a dark chestnut band at the base.

Hab. — ?

A shell of rather solid growth, richly streaked and variegated with reddish-brown, whilst the upper edge of the whorls presents a characteristic necklace of chestnut dots.

Species 85. (Fig. *a, b*, Mus. Steere.)

OLIVA PELLUCIDA. *Oliv. testâ oblongo-ovata, tenui, spirâ inflatâ, spirâ erectâ, columellâ arcuatâ, basi basi multiplicatâ; pallidulo-aurantâ, lineâ nublâta, costâ albâ pictâ, columellâ basi opacâ, callusâ.*

THE TRANSPARENT OLIVE. Shell oblong-ovate, thin, slightly inflated, spine exerted, columella arcuated obscurely one-two-plaited at the base; transparent horny, neatly painted with undulating brown lines, columella opaque and callous at the base.

Hab. — ?

Very prettily painted with broadly waved red-brown lines upon a transparent ground.



OLIVA.

PLATE XXVIII.

Species 86. (Fig. *a, b, c*, Mus. Steere.)

OLIVA MUTICA. *Oliv. testâ ovata, subobesa, spirâ brevicaulis, acuminatâ, callusâ, columellâ arcuatâ, obscure plicatâ, superâe valde callusâ; cincturae-âlbâ aut griseâ, lineâ nigricante-fuscâ plus minus distinctè undulata, zonâ costarum angustâ ad basin.*

THE BLADELESS OLIVE. Shell ovate, rather stout, spire rather short, acuminated, callous, columella arched, obscurely plaited, very callous at the upper part; ash-white or greyish, more or less distinctly waved with black-brown lines, with a narrow chestnut zone at the base.

SAY, Journ. Acad. Nat. Sci. Phil. vol. ii. p. 228.

Hab. West Indies. South Carolina. Red Sea.

An extremely variable species, with a wide range of habitation. The waved lines are sometimes narrow and close-set, sometimes broader and more distant, and oftentimes they are nearly obscured by a coating of blue-grey.

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

OLIVA MILLEPUNCTATA. *Oliv. testâ abbreviata-ovata, superâe truncatâ, spirâ brevissimâ, rathe callusâ, columellâ subarcuatâ, basin reversâ obscure leviplicatâ, superâe valde callusâ; cincturae-pubescenti, sublimè minute fuscâ-punctatâ, punctis angustis infra suturas, columellâ albat, aurantâ costarum à trunci.*

THE THOUSAND-DOTTED OLIVE. Shell shortly ovate, swollen round the upper part, spire very short, very callous, columella slightly arched, obscurely finely plaited towards the base, very callous at the upper part; ash-fulvous, minutely dotted throughout with brown, dots larger beneath the sutures, columella white, stained with a chestnut blotch.

DELOS, Mon. Oliv. pl. 25. f. 1, 2.

Hab. West Indies.

So closely related to *O. nana*, that the two species almost pass one into the other.

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

OLIVA RETICULATA. *Oliv. testâ ovata, obesa, solidiusculâ, spirâ brevi, acuminatâ, columellâ arcuatâ, obscure leviplicatâ, superâe callusâ; albidâ, costarum-rufa levifuscâ.*

THE RED-BANDED OLIVE. Shell ovate, stout, rather solid, spire short, acuminated, columella arched, obscurely finely plaited, callous at the upper part. whitish, broadly banded with chestnut-red.

Hab. ———?

This shell agrees very nearly with one figured by M. DuRoi as a variety of *O. mutica*, but it differs from that species in form as well as in its plan of colouring.

Species 89. (Fig. *a, b*, Mus. Steere.)

OLIVA GUILDINGII. *Oliv. testâ acuminata-oblongâ, spirâ erectâ, columellâ arcuatâ, leviplicatâ; griseo-cæruleo-tesente, cinctâ fusca strigatâ et punctatâ, anfractuum marginem superiorem late-scute, strigis e suturis descendens. Illius, apice angustate.*

GUILDING'S OLIVE. Shell acuminately oblong, spire exerted, columella arched, finely plaited; grey-blue, faintly streaked and dotted with brown, upper edge of the whorls yellowish, with the streaks descending from the sutures, apex blackish.

Hab. Island of St. Vincent's. West Indies.

I dedicate this pretty species to the memory of the Rev. Lansdowne Guilding, by whom it was collected, and to whom we are indebted for so many interesting shells from the same locality.



21.



22.



23.



24.



25.



26.



27.



28.

OLIVA.

PLATE XXIX.

Species 90. (Fig. *a, b*, Mus. Steere.)

OLIVA ATTENUATA. *Oliv. testâ ovata, basin versus latiusculâ, apicem versus peculiariter acuminatâ, columellâ subarcuatâ, cir plicatâ, superièe callôsâ; pellucido-cornâ, fusco-rufo latè bifasciatâ.*

THE ATTENUATED OLIVE. Shell ovate, rather broad towards the base, peculiarly acuminate towards the apex, columella slightly arched, scarcely plaited, callous at the upper part; transparent-horny, broadly banded with brown-red.

Hab. — : — :

This species might readily be confounded with the following from the similarity of its texture and painting, but from a comparison of numerous specimens of each I feel assured of their being distinct. The *O. attenuata* is uniformly more attenuated towards the apex and broader at the base, whilst the sutures of the spire are less deeply excavated, and the brown-red bands broader and lower on the shell.

Species 91. (Fig. *a, b*, Mus. Steere.)

OLIVA ZONALIS. *Oliv. testâ ovata, superièe acutiuscula, spirâ subarcuatâ, columellâ arcuatâ, basi subobscure uniplicatâ; semi-pellucido-cornâ, fusco-rufo trifasciatâ, maculâ castaneâ supra columellam.*

THE ZONED OLIVE. Shell ovate, rather swollen above the middle, spire slightly acuminate, columella arched, somewhat obscurely one-plaited at the base; semitransparent horny, three-banded with brown-red, with a chestnut blotch at the upper part of the columella.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 631. *Hab.* Near Acapulco, Mexico: Humboldt and Bonpland.

The comparative difference in the forms of this and the preceding species is well shown by Mr. Sowerby in the accompanying figures, especially in Fig. 90 *b* and 91 *a*. The conformation of the columella varies slightly, the bands are narrower and three in number, and there is a characteristic dark blotch on the body-whorl above the columella.

Species 92. (Fig. *a, b, c*, Mus. Cuming; Fig. *d*, Mus. Steere.)

OLIVA FIMBRATA. *Oliv. testâ ovata, superièe tumidiusculâ, spirâ subexsertâ, columellâ arcuatâ, cir plicatâ, plicis callôsâ; teneo-fuscâ, longitudinaliter obscure subtilissimè strigatâ, fasciâ pallidâ, reticulo maculatâ, infra suturas.*

THE FRINGE-BORDERED OLIVE. Shell ovate, rather swollen round the upper part, spire somewhat exserted, columella arched, scarcely plaited, plait callous; yellowish-brown, longitudinally obscurely very finely streaked, encircled beneath the sutures with a pale band, blotched with net-work.

Hab. West Indies.

This little species, which is liable to be confounded with *O. natica*, has a very characteristic border of fringe-painting round the upper part of the whorls, where it has a brighter enamelled aspect and is more swollen.

Fig. 93 *a, b*. (Mus. Metcalf.)

This little shell proves on further examination to be a delicate discoloured specimen of the zigzag variety of *O. natica*, represented in Pl. XXVIII, Fig. 86 *b, c*.



85. a.



87. a.



88. a.



89.



90. a.



90. b.



91.



93. a.



97. b.



98. c.

OLIVA.

PLATE XXX.

Species 94. (Mus. Cuming.)

OLIVA MYRIADINA. *Oliv. testâ subsfusiformi-oblongâ, spirâ casertâ, columellâ brevi, arcuatâ, basi obscure vâpili-cata, charact. albente, semipellucidâ.*

THE MYRIAD OLIVE. Shell somewhat fusiformly oblong, spire exerted, columella short, arched, obscurely one-plaited at the base; ivory-white, shining, semi-pellucid.

DELOS, Mon. Oliv. pl. 5. f. 1, 2.

Hab. — ?

There is no indication of colour or marking in this species, which is of a pure pellucid-white.

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

OLIVA LANCOLATA. *Oliv. testâ fusiformi-oblongâ, solidi-ossilâ, spirâ caldè casertâ, acuminatâ, columellâ arcuatâ, basi calloso-plicatâ, plicis subtilibus, numerosis; albidâ, fovea sparsim tenuissimè lineatâ et striatâ punctatâ, punctis majoribus infra suturas.*

THE LANCULATE OLIVE. Shell fusiformly oblong, rather solid, spire much exerted, acuminated, columella arched, callously plicated at the base, plaits fine, numerous; whitish, sparingly very delicately lineated and spotted in rows with brown, the dots being larger beneath the sutures.

Hab. Cataman, Island of Luzon (in sandy mud at eight fathoms), and Loay, Island of Bohol, Philippines (at the depth of sixty fathoms); Cuming.

A delicately-marked narrow acuminated shell, of rather solid growth.

Species 96. (Fig. a, b, Mus. Cuming.)

OLIVA BUBBLA. *Oliv. testâ acuminatâ-oblongâ, tenui, subopleta, spirâ caldè casertâ, columellâ arcuatâ, basi subcallosâ; pellucidâ-albidâ, zonâ angustâ opacâ infra suturas.*

THE LITTLE BUBBLE OLIVE. Shell acuminately oblong, thin, rather inflated, spire much exerted, columella arched, rather callous at the base; transparent-white, with a narrow opaque zone beneath the sutures.

Hab. West Indies.

Like the smaller *O. agrifolium*, this shell is of a thin pellucid substance without colour or marking.

Species 97. (Fig. a, b, Mus. Metcalf.)

OLIVA PURA. *Oliv. testâ lanceolatus-oblongâ, spirâ caldè casertâ, columellâ brevi, arcuatâ, basi obscure bicipitatâ; pellucidâ-albidâ, ad suturas sub-paci.*

THE PURE OLIVE. Shell lanceolately oblong, spire very much exerted, columella short, arched, obscurely two-plaited at the base; transparent-white, slightly opaque at the sutures.

Hab. — ?

Like the preceding species this shell is of a pellucid unspotted white, but its proportions are different, being narrower, more acuminated, and more solid.

Species 98. (Fig. a, d, b, Mus. Cuming.)

OLIVA PUCHELLA. *Oliv. testâ acuminatâ-oblongâ, tumidi-gentilâ, spirâ casertâ, columellâ arcuatâ, obscure multiplicatâ; albidâ, opaco-fusca tenuissimè lineatâ, supra et infra seriatim punctatâ, juxta suturas isoculatâ.*

THE PRUTTY OLIVE. Shell acuminately oblong, rather swollen, spire exerted, columella arched, obscurely many-plaited; whitish, very delicately lineated and dotted in rows above and below with red-brown, unstained next the sutures.

DELOS, Mon. Oliv. pl. 5. f. 11, 12.

Hab. West Indies.

The painting of this species is very similar to that of *O. lanceolata*, a smaller and more slenderly acuminated shell, but it differs in having spots invariably removed from the sutures.

Species 99. (Mus. Steere.)

OLIVA ROSOLINA. *Oliv. testâ ovatâ, subconicâ, Torna-telliforâ, spirâ brevi, apice obtû, columellâ brevi, superâe callosâ, basi calloso-ventratâ; albidâ, lineis flexuosis fuscescentibus exâmie rotatâ, basi columellâ rotundè rosâ.*

THE ROSE-TIPPED OLIVE. Shell ovate, slightly ventricose, Tornatella-shaped, spire short, raised at the apex, columella short, callous at the upper part, callously twisted at the base; whitish, delicately marked with faint brown flexuous lines, base of the columella deep rose.

DELOS, Mon. Oliv. pl. 1. f. 1, 2.

Hab. West Indies.

Remarkably distinguished from all other species of the genus by its *Tornatella*-like form, and by the rich pink colouring of the base of the columella.

OLIVA.

	Plate.	Species.		Plate.	Species.
acuminata, Lamarek	XXI.	33	<i>fulvicaus</i> , Lamarek	VII.	10
amazona, Duclou	XXV.	74	<i>fuarbralis</i> , Lamarek	VII.	10
Ancillarioides, Reeve	XXI.	55	fusiformis, Lamarek	VIII.	11
apantilis, Reeve	XXVIII.	88	gibbosa (Volata), Born	VIII.	12
araneosa, Lamarek	X.	16	gracilis, Brod. & Soc.	XX.	46
Athena, Duclou	XXII.	60	Guilingüi, Reeve	XXVIII.	89
attenuata, Reeve	XXIX.	90	guttata, Lamarek	XIV.	30
auricularia, Duclou	XXVIII.	38	harpularia, Lamarek	XIV.	28
auricularia, Lamarek	XXVIII.	39	hiatula (Volata), Gucliu	XXIII.	35
australis, Duclou	XIX.	42	hieroglyphica, Reeve	XXIV.	68
bivincta, Lamarek	XV.	31	Indusica, Reeve	XIX.	43
biplacata, Sowerby	XX.	48	inflata, Lamarek	XV.	31
Brasilensis, Chevrolt	VIII.	13	irisaus, Lamarek	VI.	8
bulbiformis, Duclou	XIII.	26	ispidula (Volata), Linnaeus	XXII.	34
bulbula, Reeve	XXX.	96	ispidula, Duclou	XIX.	14
caerulea, Wood	XXI.	54	jaspidica (Volata), Gucliu	XXII.	58
caudata, Lamarek	XXII.	34	Julica, Duclou	IX.	15
carinola, Lamarek	XXII.	60	kalkontina, Duclou	XX.	19
Caroliniana, Duclou	XIII.	26	laucolata, Reeve	XXX.	95
cincta, Reeve	XIX.	47	lentiginosa, Reeve	XIX.	45
ciagulata, Chemnitz	VIII.	12	leucophora, Lamarek	XIV.	30
clausophala, Duclou	XXIII.	39	leucostoma, Duclou	VII.	10
columellaris, Sowerby	XXIII.	62	leucozonias, Gray	XXIV.	67
conoidalis, Lamarek	XXII.	58	liguola, Reeve	XXI.	57
contortuplicata, Reeve	XX.	51	lineolata, Gray	XXIII.	63
erucata (Volata), Dillwyn	XIV.	30	literata, Lamarek	XI.	18
Guiningüi, Reeve	XI.	19	lygchris, Duclou	XIII.	21
cyanea, Reeve	XXIV.	70	luteola, Lamarek	XVI.	33
dauglytola, Duclou	XIII.	26	Macleana, Duclou	VII.	10
dausa, Duclou	XXIII.	63	maculata, Duclou	XIV.	30
dealbata, Reeve	XXV.	71	maulchura, Duclou	XIV.	30
Duclou, Reeve	XIX.	44	Maura, Lamarek	VII.	10
eborena, Lamarek	XXIII.	61	millepunctata, Duclou	XXVIII.	87
elegans, Lamarek	XII.	24	modesta, Reeve	XXVII.	83
episcopalis, Lamarek	XIII.	24	monilifera, Reeve	XXVII.	84
erythrostoma, Lamarek	V.	7	multiplicata, Reeve	XX.	52
Esther, Duclou	XXIII.	65	mustelina, Lamarek	XIII.	23
fimbriata, Reeve	XXIX.	92	mutica, Say	XXVIII.	86
flammatula, Lamarek	XIX.	11	myriadina, Duclou	XXX.	94
flavola, Duclou	XXVII.	34	nana, Lamarek	XXIII.	66
fulgida, Reeve	XXVI.	78	nebulosa, Lamarek	XVI.	32

	Plate	Species	Plate	Species
<i>acculata</i> , DuRoiis	XXV	73	<i>Senegalensis</i> , Lamarek	IX.
<i>nivea</i> (<i>Volata</i>), Guelin	XXIII.	64	<i>septentrionalis</i> , Lamarek	VII.
<i>nobilis</i> , Reece	X.	3	<i>splendidula</i> , <i>Sowerby</i>	XI.
<i>obscura</i> , DuRoiis	X.	16	<i>Stainforthii</i> , <i>Reece</i>	XIX.
<i>Olympiada</i> , DuRoiis	III.	5	<i>stellata</i> , DuRoiis	XVII.
<i>oriola</i> , Lamarek	XVII.	34	<i>Stevia</i> , <i>Reece</i>	XVIII.
<i>oryza</i> , <i>Lamarck</i>	XXVII	81	<i>strigata</i> , <i>Reece</i>	XXV.
<i>ozodona</i> , DuRoiis	XXV.	73	<i>subulata</i> , <i>Lamarck</i>	XVI.
<i>panniculata</i> , DuRoiis	XXVI.	77	<i>tergina</i> , DuRoiis	XXVI.
<i>putala</i> , <i>Sowerby</i>	XXIII.	39	<i>tescellata</i> , <i>Lamarck</i>	XX.
<i>pavillus</i> , <i>Reece</i>	XXI.	56	<i>testacea</i> , <i>Lamarck</i>	XXIII.
<i>pellucida</i> , <i>Reece</i>	XXVII.	85	<i>textilina</i> , <i>Lamarck</i>	VI.
<i>Peruviana</i> , <i>Lamarck</i>	IX.	11	<i>tigrinella</i> , DuRoiis	XXII.
<i>Philanthe</i> , DuRoiis	XII.	22	<i>tigrina</i> , <i>Lamarck</i>	XII.
<i>pieta</i> , <i>Reece</i>	XXVI.	79	<i>Timoria</i> , DuRoiis	X.
<i>piNDARIA</i> , DuRoiis	V.	16	<i>Indusia</i> , DuRoiis	XXII.
<i>polypata</i> , DuRoiis	XIV.	29	<i>tremulina</i> , <i>Lamarck</i>	IV.
<i>ponderosa</i> , DuRoiis	II.	4	<i>tricolor</i> , <i>Lamarck</i>	VII.
<i>pulehella</i> , DuRoiis	XXX.	98	<i>triticea</i> , DuRoiis	XXVII.
<i>pura</i> , <i>Reece</i>	XXX.	97	<i>undata</i> , Lamarek	XX.
<i>pygmaea</i> , <i>Reece</i>	XXVI.	75	<i>undatella</i> , <i>Lamarck</i>	XXV.
<i>reticularis</i> , <i>Lamarck</i>	X.	16	<i>ulriculus</i> , Chemnitz	VIII.
<i>rosolina</i> , DuRoiis	XXX.	99	<i>vesulata</i> , DuRoiis	X.
<i>rufifasciata</i> , <i>Reece</i>	XXVIII.	88	<i>volutella</i> , <i>Lamarck</i>	XXI.
<i>rufula</i> , DuRoiis	XX.	50	<i>Volvarioides</i> , DuRoiis	XXII.
<i>sanguinolenta</i> , <i>Lamarck</i>	XIII.	25	<i>zancoeta</i> , DuRoiis	XXVI.
<i>scripta</i> , <i>Lamarck</i>	XIV.	27	<i>zenopira</i> , DuRoiis	XXIV.
<i>semi-triata</i> , <i>Gray</i>	XXIII.	61	<i>zonalis</i> , <i>Lamarck</i>	XXIX.

ERRATUM

Species 70 For *O. caprea*, read *O. nigra*.

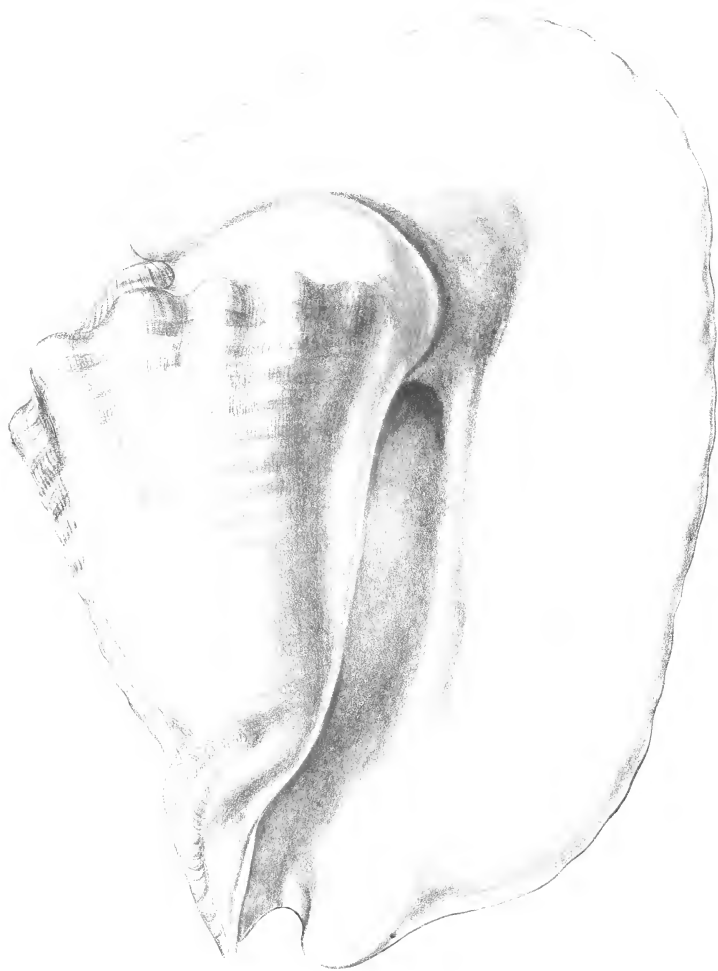
MONOGRAPH

OF THE GENUS

S T R O M B U S .

Of what all's endless work have I the part
To count the seas' abundant progeny
Whose mortal work farre passeth those of God
And therefore I bid welcome to the year 1602.





STROMBUS.

PLATE I.

Genus STROMBUS - *Linnaeus.*

*Testa ovata, convexa, imbricatim, super forat tuberculata, intus
laevi, nigerrima, tuberculatis red, vel albis, limbo lineato
oculato, columella laevi, peristoma callosa, color
interius nigerrimus, exterior albus aut saepe nigerrimus, et
limbo limbo nigerrimo, prope basin line nigerrimo
aperturam peristoma excavatum, limbo callositate. Oper-
culum, varium, pectus, color alternans.*

Shell sometimes conical or ovate, sometimes fusiformly
tapered; whorls most frequently tubercled or nodu-
lated; imbricated or carved at the base, columella
smooth, generally callous, sometimes wrinkled; lip
usually less enlarged into a simple or lobed wing,
usually sinuated near the base, aperture mostly
wrinkled (enlarged at the base). Operculum
large, small, triangular anteriorly.

The genus *Strombus* comprises those species of the
genus family *Testa*, in which the expanded wing-like
lip is simple, not developed into channelled claws. The
shell is conical, broad, and compact, with a short
spire, as in *S. galeatus*, or with the spire acuminate into
a tall pyramidal as in *S. Thais*. Again, it is strictly
conical, as in *S. flexuosus*, or drawn out into an elongated
apex, as in *S. (Strombus) Str.* The expanded wing-like lip is
the principal seat of specific character. Every species has
its peculiar condition of lip, varying in form, sculpture,
and colour. The principal variation in the form of the
lip is in the upper, or rather hinder, part, which is widely
flatly spread, as in *S. flexuosus* and *S. striatus*, prolonged
into a channelled lobe, as in *S. galeatus* and *S. strabus*, into
a short fingershaped lobe, as in *S. arcus, Dufren.* and *S. arcus*,
S. strabus, or ensted, as in *S. arcus*, whilst in some
species, as *S. halimatus* and *S. strabus*, the lip is expanded
in the lower or front part.

The chief peculiarity in the sculpture of this genus lies
in the aperture and columella, which are mostly wrinkled
or granulated. The *Strombus* are generally heavily tubercled
or nodulated round the upper part of the whorls, such
as in the *Volutas*, the tubercles or nodules are more or
less developed in different individuals of the same species.
The *Strombus* are brilliantly coloured, the most characteristic
varieties of colour residing in the aperture, that is, in
the columella and on the inner surface of the expanded lip.

The whorls of the shell are not always covered by a
membrane. In *S. galeatus* and *S. strabus*, the opercu-

ple, the spire show the whorls to be very widely imbricated
one upon the other in the process of accretion. The
first few whorls of most of the species have a narrow band
deposited at intervals, but this, instead of increasing in
size and regularity with the growth of the shell is in
Voluta or *Testa*, gradually disappears. The only one
of those characters which, being a prominent feature of
the allied family of *Cantharus*, exists here only in a tertiary
form.

The habitats of all the *Strombus* are known with the ex-
ception of the large *S. Galath* and the little *S. arcus*.
By the greater portion inhabit the eastern world,
twenty-six out of fifty-three species were collected by Sir
Cunning at the Philippine Islands. Of these 200 *S. strabus*
and *S. halimatus*, are found also at Ceylon and the
S. rugosus, was collected by Sir E. Belcher on the shores of
Korea. Another Philippine species, *S. flexuosus*, occurs
also the Society Islands, a fourth, *S. strabus*, is found
also on the shores of the Red Sea; and two species, *S. strabus*
and *arcus*, range southward to North Australia.
As in the genus *Cantharus*, the Philippine *Strombus* are all of
small size, with the single exception of the fine *S. strabus*.
There are no *Strombus* in the Mediterranean or on
any part of the Atlantic north of the West Indies (the
Cape de Verd Islands); but a fine species, *S. strabus*,
of a type inhabiting the Philippine Islands, is recorded
from Japan, in the geographic latitude of the southern
shores, but in the isothermal latitude of the northern
shores of the Mediterranean. As in the case of many
genera which are so abundantly and typically represented
among the islands of the Eastern Archipelago, there is no
species on either side of South America below the equator,
with the singular exception of the fine *S. galeatus* from
the Galapagos Islands. The fine large *S. strabus* is
from the Bay of Camaguey. Six species, inhabiting the
shores of the West Indies, are all of large size, and one of
these, *S. strabus*, as in the case of the *Olivas*, occurs also
on the Red Sea. Another West Indian species, *S. strabus*,
is represented in the Gulf of Mexico adjoining, by the
S. strabus and at Panama by *S. strabus*. The only other
American species is the fine large *S. galeatus* from the
Gulf of Mexico. The only *Strombus* recorded from the
Antarctic coast are two from Zanzibar, *S. strabus*, and
S. strabus, one identical in species with the same from the
Philippine Islands, the other of a similar type. One
species, *S. strabus*, is reported from the Sandwich Islands.

one *S. Neco-Zelandiæ*, from New Zealand; and four, *S. testiformis*, *deformis*, *Australis*, and *Campbelli*, as being peculiar to Australia.

Species I. (Mus. Brit.)

STROMBUS GOLIATH. *Stromb. testâ subquadrato-ovata, percampylâ, crassa, ponderosa, spirâ brevi, anfractibus tenuissimis biserialibus solentis, superâe plicato-tuberculatis, tuberculis rotundatis, obtusis, columellâ callusâ, basi incurvâ, tubo in aliam rotundatam supra spiram callusâ expansâ; alibi, rufa-fusca apicem versus conchula, columellâ et apertura foveâ laterâ et rufescente pallide tinctis.*

THE GOLIATH STROMBUS. Shell somewhat squarely

ovate, very large, thick, ponderous, spire short, whorls transversely grooved in double rows, plicately tubercled round the upper part, tubercles rounded, obtuse, columella callous, incurved at the base, lip very broadly expanded above the spire into a rounded wing; whitish, spotted towards the apex with red-brown, columella and interior of the aperture faintly tinged with pink and yellow.

CHEMNITZ, Conch. Cab. vol. xi. p. 147. pl. 195 A.

Hub. — ?

This is a very distinct species from *S. gigas*, although it partakes in a manner of the character of some of its varieties. The bold lofty expansion of the lip is very characteristic, and it has none of the bright pink colouring of *S. gigas*.





STROMBUS.

PLATE II

Species 2. (Mus. Ital.)

STROMBUS ALGAS. *Strombus testis squamulato-orata*, nec
capite *truncato*, *costis contractis et costata*, *dent. con-*
tortis, *spira* *evoluta*, *acuminata*, *angustibus transverse*
superficialiter sulcatis et rugosis, *superius squamulato-*
lobulatis, *tuberculis anarosis*, *prominentibus*, *diver-*
gentibus, *aperturâ perispiralâ*, *labiis late expansis*, *super-*
ioribus angulatis *probusis*, *palatis squarosis*, *quadr-*
angulis *transverse* *radialis*, *colomelli* *et* *aper-*
turâ *fauces* *interse* *rotas*.

THE GIANT STROMBUS. Shell somewhat squarely ovate,
very large, contracted and ribbed towards the base,
then twisted, spire exerted, acuminated, whorls
transversely superficially grooved and rough, squa-
mately tubercled round the upper part, the tubercles
being numerous, prominent, divergent, aperture very

large, lip broadly expanded, undented at the upper
part into a circular wing, light brown-colour, covered
with a rather thin fatty epidermis, columella and in-
terior of the aperture deep pink.

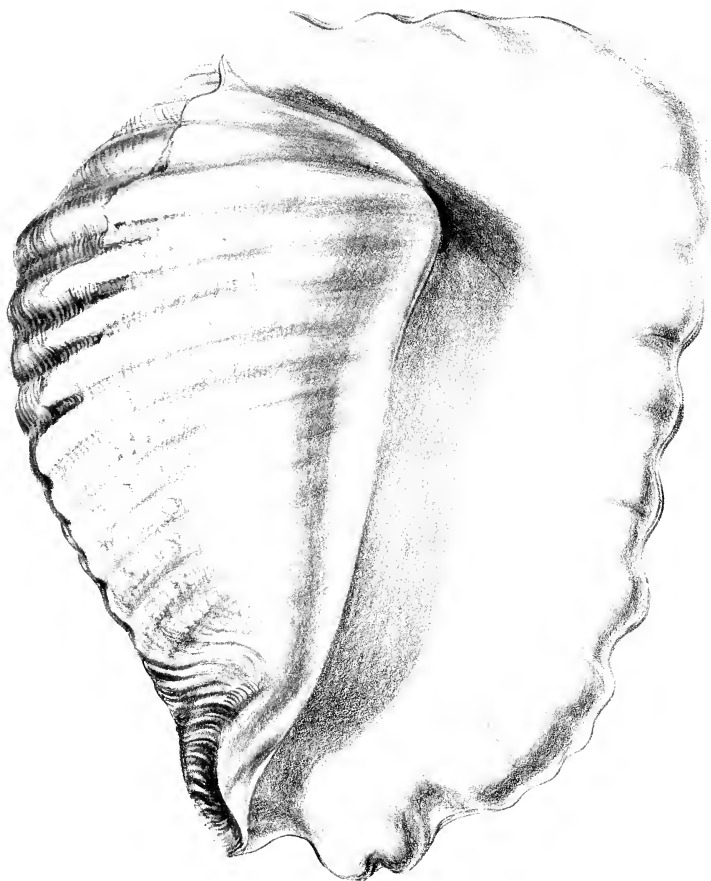
LINNÆUS, Syst. Nat. (12th edit.) p. 1210.

An endemic: *Strombus lueyeri*, Lamour.

Hab. West Indies.

This fine species, which is sometimes imported in large
quantities from the West Indies for the use of the canco
artist, is remarkable for the delicate pink colouring of its
widely expanded aperture. The tuberculated growth of the
spire is also a conspicuous feature; the tubercles are
not, however, always quite so prominently developed as
in the specimen selected for illustration, which is one of
rather small dimensions.









STROMBUS.

PLATE IV.

Species I. (Mus. Cuming.)

STROMBUS LUTISSIMUS. *Strombus h. h. fusiformis-ovatus, nucleis ovalibus et tuberculatis, spiræ emicæ, acuminate, rugose et anhilæ, inflexionis superioris leviter emarginatæ, labium cerasus, columella præmorsivè lincata, strigillosa spirata latissima, cypæum, labium albatas præmorsivè, epissè efflexo, anacutus-fusoid, longitudo 1.5, latitudo 0.6, nucleis albis præmorsivè in terræ-purpurea fovea extrorsum-alba.*

THE VERY BROAD STROMBUS. Shell fusiformly ovate, rudely gibbous and tubercled in the middle, spiracose, acuminate, regularly noduled, whorls slightly concave round the upper part, smooth, promiscuously rudely ridged toward the lip, which is

broadly expanded beyond the spire, edge of the lip peculiarly thickly reflected at the side; orange-brown, here and there longitudinally lined, interrupted promiscuously with white blotches, interior of the aperture carnelion-white.

LINNEUS, Syst. Nat. (12th edit.) p. 1211.

Pterocera ulula, Schumacher.

Hab. Matnog, Island of Luzon, Philippines (on the reef at low water); Cuming

The chief peculiarity of this species consists in the curious manner in which the widely expanded lip is reflected inwards at the side, and which is only slightly indicated in any other. Although known to Linnaeus, the *S. luteissimus* is still of rare occurrence.







STROMBUS.

PLATE V.

Species 7. (Mus. Saul.)

STROMBUS MEXICANUS. *Strombus testis subulnari-rotundus, lip. alb. conspersis 2. subulnae, spiram aciculis transversis, columella chelataque (18). Longitudinaliter plerisque, spiram et subulnae rotunditatis, costa trilinea post. subulnae, columella testis suffragata apertura parvi, abas subulnae sub. et sub. basi, spiram, non nup. subulnae, abas, et subulnae.*

THE RED-MOUTH STROMBUS. Shell somewhat oblong, here and there conspicuously and somewhat rudely various, whorls transversely very closely lined, lines raised, longitudinally plicated, irregularly tubercled at the upper part, with a swollen rib behind the lip, columella finely wrinkled, aperture small, lip rather thickened finely wrinkled within, sinus large; whitish, columella very deep pink.

SOWERBY, *Thesaurus Conch.* p. 31, pl. 7. t. 51.

An edition: *Strombus Hella*, Rousseau.

Hab. —?

A small stout species, of which the accompanying figure is a magnified presentation. It is strongly varicose, and the sinus of the lip is unusually distinct. The aperture is very much contracted, with the columella of an intense rose-colour.

Species 6. (Mus. Cuming.)

STROMBUS PERUVIANUS. *Strombus testis subulnari-rotundus, ponderosa, basi rotundata-circari, spiram depressivata, apicem ceraso-annulata, subulnae spiram et costis, superae obtuse angulatis, ad angulum tuberculatis, tuberculo medio dorsali callosa praeincaute, labra nup. plicata-trigono-dilatata, superae subulnae, columella spiram corrugata; flavescens-rosea, interlinea sub-aurantiata, columella et apertura fauce caeruleo-rufo.*

THE PERUVIAN STROMBUS. Shell somewhat triangular, thick, ponderous, recurved in a twisted manner at the base, spine rather depressed, acuminate towards the apex, whorls spirally ribbed, obtusely angled at the upper part, tubercled at the large, middle dorsal tubercle very prominent, lip largely triangularly dilated, slightly lobed above, columella wrinkled at the

upper part, yellowish-chestnut, sometime a little marbled, columella and interior of the aperture carnelion-red.

SWAINSON, *Zool. Illus.* Second Series, vol. i. pl. 39.

Hab. Bay of Caracas, West Columbia (on the reefs at low water); Cuming.

This fine species is remarkable for the triangular dilatation of the lip, and for its general massive structure, the columella and interior of the aperture being of a deep carnelion-rouge colour. Several fine specimens were collected by Mr. Cuming in the above-named locality.

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

STROMBUS TESTIFORMIS. *Strombus testis fusiformis, spiram callosa annulata, apicem ceraso-annulata, subulnae spiram et costis, superae obtuse angulatis, ad angulum tuberculatis, tuberculo medio dorsali callosa praeincaute, labra nup. plicata-trigono-dilatata, superae subulnae, columella spiram corrugata; albata, rufi-fuscescente inter-linea, fuscentia et aurantiata, apertura fauce pallide corcariata.*

THE TESTIFORM STROMBUS. Shell fusiform, spine much acuminate, varicose towards the apex, whorls margined next the suture, smooth, last whorl ridged at the base, and, in a rayed manner, behind the lip, lip rather thickened, reaching up to the suture of the penultimate whorl, wrinkled within, columella finely wrinkled; white, banded and marbled in an interrupted manner with red-brown, interior of the aperture tinged with sealet.

SOWERBY, *Thesaurus Conch.* p. 31, pl. 9, t. 91, 92.

Hab. North Australia; Jukes.

An extremely interesting species, partaking of the characters of *Bostellaria*, inasmuch as the lip reaches over the body-whorl to the suture of the one preceding. The localities—Red Sea and Indian Ocean, given, without authority, by M. Deshayes, are probably erroneous, the specimen here figured being collected by Mr. Jukes in H.M.S. Fly, at North Australia.







5 a



5 b



5 c



5 d

STRÖMBUS.

PLATE VI.

Species 8. (Fig. 3, Mus. Cuming.)

STRÖMBUS TUBIFLUS. *Strömbs, testis oblongo-cylindrico, Terbellum-rotundis, spirali haecussenti, pectiniferis quinque lambris vel sexaevantrorsum, inflexibus lacinatis, pulvis, albis, basi carinosa-alba, lacinis sinuatis, lacinis truncatis, albidis ant. flavo-roseis, endostoma-roseo, pulvis roseo-fulvis, columella et aperturae haec pectiniferis-rotundis.*

THE TUBIFLUS STRÖMBUS. Shell oblong-cylindrical, Terbellum-shaped, spire rather short, peculiarly gibbously swollen, finely varicose at the apex, whorls smooth, polished, last whorl sharply grooved at the base, lip slightly inflexed, finely wrinkled within, whitish or yellowish, prettily mottled with light chestnut; columella and interior of the aperture purple-blead.

SEWALBY, Proc. Zool. Soc., 1842, p. 141.

Hab. Island of Ticao, Philippines (on the reefs); Cuming.

Mainly characterized by the swollen appearance of the multilobed whorl, in which respect the species partakes of the character of *S. subulatus*.

Species 9. (Mus. Cuming.)

STRÖMBUS THILISTIS. *Strömbs, testis oblongo-ovato, ceraso-penduloso, spirali pectiniferis pectinulatis-ovatis, lacinis carinis, inflexibus albidis spiruliter rosulatis, pulvis roseo, carinis, deinde, loboculatis-rotundis, molis in angustia lacinis quinque, fere rotundis, aperturae subulatae carinosa, lacinis supra columnam sinuatis pulvis albidis, inflexibus truncatis, sinu carinata, albidis, endostoma pulvis roseo-fulvis, columella et aperturae haec pulvis carinosa, lacinis subulatis-pectiniferis pulvis roseo-fulvis.*

THE THILISTIS STRÖMBUS. Shell oblong-ovate thick, ponderous, spire peculiarly pyramidally acuminate, sharply nodose, whorls absolutely spirally ribbed

convex, round the upper part, then tuberculately noduled nodules. Albidus and almost faded in the last whorl aperture spirulately spirally oblong lip rather largely dilated above the columella, mouth thickened, with the sinus conspicuous, whitish variously clouded with purple-shaded red-brown, columella and interior of the aperture pale chestnut, lip blotched with pale burnt-brown.

GRAY, Sow. Thesaurus Conch., pl. 33, pl. 10, f. 109.

Hab. Society Islands on the reefs; Cuming.

This fine species, of which only two or three examples are known, is remarkably distinguished by the sharply noduled pyramidal elevation of the spire. The lip is very boldly dilated and the purple-shaded marking of the body-whorl is peculiar.

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

STRÖMBUS TERRELLIUS. *Strömbs, testis oblongo-gyro-tracto, basi truncato, Terbellum-rotundis, subulatis, spirali carinata, lambris sex, inflexibus lacinatis, pulvis, albis, sinu lacinis lambris, sinu carina, columella subulata, aperturae foveae lacinis carinatae, flavo-roseis, albis, inflexibus pulvis albidis et carinatae, ceraso-pendulosa foveae, pectiniferis.*

THE AWL-SHAPED STRÖMBUS. Shell oblong-cylindrical, truncated at the base, Terbellum-shaped, rather inflated, spire exerted, rather swollen, whorls smooth, polished, last whorl swollen as if varicose, columella slightly arched, interior of the aperture finely wrinkled, yellowish-white, prettily clouded and variegated with red-chestnut, wrinkles of the interior of the aperture purple-blead.

SEWALBY, Thesaurus Conch., p. 51, pl. 9, f. 84, 85.

Hab. Island of Ticao, Philippines (on the reef); Cuming.

The aperture of this species is peculiarly curved with colored wrinkles, not extending to the lip as in *S. velvatus*.





n. a.



n. b.



n.



n. a.



n. a.

STROMBUS.

PLATE VII.

Species 11. (Fig. *a, b*, Mus. Cuming;
Fig. *c, d*, Mus. Saul.)

STROMBUS FLORIDUS. *Stromb.* testâ oblongo-ovata, incrassatâ, basi incisio-sulcatâ, spirâ plerumque breviusculâ, internum exertâ, anfractibus spirâliter subtiliter liratis et lincatis, superâe gibbosis, juxta suturas angulatis, deinde obtusè angulatis, ad angulâ obliquè tuberculatis, tuberculis internum ferè canidus, columellâ laminato-incrassatâ, undique tenuè corrugatâ, apertura oblongâ, fauce tenuè corrugatâ, labro incrassato, superâe subtilitudo, quasi tuberculata formans. albidâ, flaviculae internum lincatâ, aurantio-fusca vel purpureo-nigro variè unculatâ aut strigatâ, aperturae fauce pallidè coccineo-rasoi.

THE FLOWERY STROMBUS. Shell oblong-ovate, thickened, sharply grooved at the base, spire generally rather sharp, sometimes exerted, whorls spirally finely ridged and lined, margined next the sutures, then obtusely angled, obliquely tubercled at the angle, tubercles sometimes fading away, columella laminately thickened, finely wrinkled throughout, aperture oblong, interior finely wrinkled, lip thickened, slightly dilated at the upper part, as if to form a tubercle; whitish, sometimes yellow-stained, variously blotched or streaked with orange-brown or purple-black, interior of the aperture delicate scarlet-pink.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. ix. p. 707.
Strombus antillalis, Swainson.

Hab. Island of Ticao and Bohol, Philippines, and Society Islands (on the reefs): Cuming.

This species, as Mr. Swainson's name for it indicates, is very changeable both in form and colouring. Its characters of sculpture are constant. The spire is mostly rather short, but sometimes it is elongated as in the specimen represented at Fig. 11 *c, d*. The more acuminated the spire is in this genus, the more noduled it is. This peculiarity is well illustrated in the specimens of *S. floridus* represented

in the accompanying plate, and we have a remarkable instance of the attenuated nodulous spire in *S. Thebesites* of the preceding plate. In *S. floridus* the columellar lamina is unusually thickened, and the outer lip is callously dilated where it joins this on the body-whorl, as if to form a tubercle.

Species 12. (Mus. Brit.)

STROMBUS ACCIPITRINUS. *Stromb.* testâ subquadrato-ovata, obsidâ, crassa, ponderosa, basi abruptè recurvâ, spirâ brevi, acutâ, spirâliter unilincatâ, obscure undulâ, anfractibus radiatâ subobsoleto costatis, superâe depresso-concavis, ad angulâ nodulo-tuberculatis, tuberculis dorsalibus anfractibus ultimâ perimplis, columellâ callosâ, labro angulatè dilatato, saepe valdè incrassato; spualter-albidâ, internum infra-fuscatâ, epidermide tenui fusca lincatâ, columellâ et aperturae fauce albis, internum rufoscutellâ.

THE HAWK-WING STROMBUS. Shell somewhat squarely ovate, stout, thick, ponderous, abruptly recurved at the base, spire short, sharp, spirally many-ridged, obscurely nodose, whorls radiately rather obscurely ribbed, depressly concave round the upper part, nodosely tubercled at the angle, dorsal tubercles of the last whorl very large, columella callous, lip angularly dilated, often very much thickened; fawn-white, sometimes faintly red-banded, covered with a thin brown epidermis, columella and interior of the aperture reddish or white.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. ix. p. 687.
Eadem var. *Strombus incertis*, Swainson.
Strombus costatus, Gmelin (not of Da Costa).

Hab. West Indies.

Distinguished by its compact massive form and noduled spire, which, though short, is always sharply acuminated. The specimen here figured from the British Museum is tinged with red, but the species is mostly white, sometimes acquiring with age a dark metallic hue.





13 a



13 b



14



15 a



15 b

STROMBUS.

PLATE VIII.

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

STROMBUS RUPPELLI. *Stromb. testâ oblongo-fusiformi, spirâ uncinato-lanceatâ, asfractibus superioribus concentricis, subangulatis, ad angulâ plicato-tuberculatis, tuberculis univariis, infracta altâque pone laberâ longitudinaliter costata et radiatâ tenuiliter, columellâ incrassatâ, laminatâ, superâ subtiliter corrugatâ, aperturae fancee corrugatâ; faricute-âlbâ, ustulato-fusca hic illic tinctâ et fasciatâ, labro purpureo-fusco. fasciâ magnâ albâ radiatâ, columellâ et aperturae fancee intusâ purpureo-fuscâ.*

RUPPELL'S STROMBUS. Shell oblong-fusiform, spire acuminately turreted, whorls concavely depressed round the upper part, slightly angled, plicately tubercled on the angle, tubercles univariis, last whorl ribbed longitudinally behind the lip and radiately finely ridged, columella thickened, laminated, finely wrinkled at the upper part, interior of the aperture wrinkled; yellowish-white, stained and banded here and there with burnt-brown, lip purple-brown, rayed with narrow white bands, columella and interior of the aperture rich purple-brown.

Hab. Red Sea; Ruppell.

An acuminately turreted species, closely plicately ribbed, in which the swollen longitudinal rib behind the lip is characterized by a purple-brown colouring crossed with narrow white rays.

The shell represented at Fig. 13*b* is in bad condition, and can scarcely be referred to this species without doubt.

Fig. 14. (Mus. Brit.)

STROMBUS ACCIPITRINUS, var. This shell is the *S. incertis* of Swainson in the Bligh Catalogue, and of Sowerby in *Thesaurus Conchyliorum*, but on com-

parison with *S. accipitrinus* I find it to be merely a state of that species in which the shell is of lighter growth, the spire more acuminate, and the tubercles smaller and more regular. The detail of sculpture is alike in both varieties.

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

STROMBUS GIBBERCLUS. *Stromb. testâ oblongo-conicâ, basi cernuâ attenuatâ, spirâ exsertâ, acutâ, asfractibus superioribus inaequaliter gibbosis, quasi distortis, hic illic varicosis, juxta solerâ marginatis, transversim rarè striatis et liris, uniuersâque partia levigatis, columellâ levigatâ, aperturae fancee scissimè levè corrugatâ; albâ aut faricute, rufo-fusco intusâ autem rarè fasciatâ, columellâ et aperturae fancee intusâ, aut purpureis aut violaceis.*

THE HUNCH-BACKED STROMBUS. Shell oblong-conical, attenuated towards the base, spire exerted, sharp, whorls unequally gibbous, as though distorted, here and there varicose, margined next the sutures, transversely variously ridged and striated, sometimes partially smooth, columella smooth, interior of the aperture most frequently finely wrinkled; whitish or yellowish, sometimes, but rarely, banded with mottled red-brown, columella and interior of the aperture sometimes pink, sometimes purple or violet.

LINNEUS, *Syst. Nat.* (12th edit.) p. 1210.

Hab. Philippine Islands (in sand at low water), and Society Islands (on the coral reefs); Cuming, Red Sea; Forshall.

This well-known gibbously distorted species has a wide geographical range in the eastern and east-Pacific Seas, varying considerably in colour, but constant in its peculiarity of form.





16.



17.



18.



19.



20.

STROMBUS.

PLATE IX.

Species 16. (Mus. Beleher.)

STROMBUS RUGOSUS. *Stromb. testâ fusiformi-oblongâ, spirâ turritâ, angustibus spirâliter echinatis leviter rotatis, superâ angulatis, ad angulum truncatis et plicatocostatis, costis excavatis, angustâ ulnâ costâ truncatâ prominenti non lobata, columellâ crassâ uncinatâ, aperturae fovee subtilissimè cœvâ; ut- ulâ, striata-fusca truci et fasciatâ, columellâ et aperturae fovee albis.*

THE WRINKLED STROMBUS. Shell fusiformly oblong, spire turrited, whorls spirally very closely ridged, roundly angled, rather swollen and plicately ribbed at the angle, ribs corrugate, last whorl with a prominent swollen rib behind the lip, columella thickly laminated, interior of the aperture very finely wrinkled; whitish, stained and banded with burnt brown, columella and interior of the aperture white.

SOVERBY, Tankerville Catalogue, App. p. v.

Strombus eurygatus, Adams and Reeve

Hab. Korea; Beleher.

Mr. Sowerby's description of this species in the Appendix to the Tankerville Catalogue was overlooked by Mr. Adams and myself, when occupied with the Mollusca of the Voyage of the Samarang.

Species 17. (Mus. Cuming.)

STROMBUS DENTATUS. *Stromb. testâ fusiformi-oblongâ, spirâ turritâ, angustibus spirâliter echinatis leviter rotatis, superâ angulatis, ad angulum confertis plicatocostatis, costis antice basi versus descendebus, tuberculis crassis granulatis compresso-tuberculatis, columellâ crassâ uncinatâ, labra incrassata, aperturae fovee subtilissimè cœvâ; griseo-olivâ, nigro-punctatâ, umbis angustis albis unguatâ, columellâ uncinatâ, aperturae fovee purpureo-olivâ.*

THE DOTTED STROMBUS. Shell fusiformly oblong, spire turrited, whorls spirally very closely finely ridged, angled at the upper part, closely plicately ribbed at the angle, front ribs descending towards the base, gradually compressly tubercled towards the lip, columella thickly laminated, lip thickened, interior of the aperture finely wrinkled; greyish-white, black-speckled, encircled with narrow white zones, columella orange, interior of the aperture purple-orange.

LINNEUS, Syst. Nat. (12th edit.) p. 1213.

Strombus plicatus, Lamarek.

Hab. Island of Ticao, Philippines (on the reefs); Cuming.

In the absence of a dentated lip, the compressed dorsal tubercles may probably have suggested the name by which Linnaeus distinguished this species.

Species 18. (Mus. Cuming.)

STROMBUS GALLUS. *Stromb. testâ oblongâ, basi attenuatâ et emortâ, spirâ erectâ, conicâ, angustibus spirâliter striatis et costatis, superâ rotatis et angulatis, ad angulum undoso-tuberculatis, tuberculis dorsalibus prominentibus, compressis, columellâ callusâ, labra latè expansa, superâ in lobum attenuatum producta; fuscivittatè-albâ, rufo-fusca nebulatâ et cœvâ; columellâ et aperturae fovee pallide caruleis.*

THE ANGEL'S WING STROMBUS. Shell oblong, attenuated and twisted at the base, spire exerted, conical, whorls spirally striated and ribbed, concave and angled at the upper part, nodosely tubercled at the angle, dorsal tubercles prominent, compressed, columella callous, lip broadly expanded, produced at the upper part into an attenuated lobe; yellowish-white, clouded and variegated with red-brown, columella and interior of the aperture pale caruncle.

LINNEUS, Syst. Nat. (12th edit.) p. 1209.

Hab. Red Sea; Earl Mountmorris.

This well-known species varies little except in the prolongation of its characteristic lobe. It exhibits scarcely any change of colour.

Species 19. (Mus. Cuming.)

STROMBUS LICHANUS. *Stromb. testâ conicâ, solidiusculâ, spirâ brevi, iocivâ, angustibus laevibus, subnè coniculis, obtusè angulatis, columellâ rectâ, brevi, apertura angustâ, labra rix incrassata ed expansa, superâ latè sinuata; albâ, rufo-fusca variegatâ, columellâ intusè purpureo-nigrâ, aperturae fovee intusè rufâ.*

THE LICH STROMBUS. Shell conical, rather solid, spire short, smooth, whorls smooth, somewhat rudely convoluted, obtusely angled, columella straight, smooth, aperture narrow, lip but little thickened or expanded, broadly sinuated at the upper part, whitish, variegated with red-brown, columella intense purple-black, interior of the aperture deep red.

December, 1850.



21 a



21 b



22.



21 c.



21 d

STROMBUS.

PLATE X.

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

STROMBUS VARIABILIS. *Stromb. testâ ovati, spirâ erectâ, turrita, carinata, infraorbibus laticibus, basi subeatis, superâe declivibus et angulatis, ad angulâa nodosis, columellâ callousâ, anula tumidiusculâ, labro incrassato, subulato, superâe striato, albiâ, aurantio-fusca variè striatâ aut fasciatâ, columellâ auratâ præparâe angulâa, testina laticâ.*

TD: VARIABLE STROMBUS. Shell ovate, spire exerted, turrited, varnoso, whorls smooth, grooved at the base, flaring and angled at the upper part, nodose at the angle, columella callous, rather swollen in the middle, lip thickened, slightly winged, sinuated at the upper part; white, variously streaked and banded with orange-brown, columella sometimes stained with a large purple blotch.

SWANSON, Sowerby Thes. Conch.

Hab. Fig. a, Durak's Island, North Australia; Jukes.

Fig. b and d, Island of Ticao, Philippines; Cuming.

Fig. c, Zanzibar, East Africa; Thorne.

This species has a wide range of habitation and considerable local variety of colouring. It is remarkably constant in form, and is well distinguished by its turrited nodulous spire, slightly alate expansion of the lip, and swollen callosity of the columella.

Species 22. (Mus. Metcalf.)

STROMBUS TRICOINIS. *Stromb. testâ ovati, suburgenti, spirâ conicâ, infraorbibus spirulite striatis et laticis, superâe carinatis et nodoso-tuberculatis, tuberculis tribus dorsibus perinodis, præminensibus, columellâ callosâ, labro incrassato, trigono-capitato, superâe in acutâ elongatâ productâ; floricantâ-albiâ, epidermide erosiusculâ indutâ, columellâ et aperturae fovee parvoparvoscule-carinatae.*

THE THREE-HORNED STROMBUS. Shell ovate, somewhat triangular, spire conical, whorls spirally striated and ridged, concave and nodosely tubercled round the upper part, the three dorsal tubercles very large and prominent, columella callous, lip thickened, triangularly expanded, produced above into a point; yellowish-white, covered with a rather thick epidermis, columella and interior of the aperture purplish-flesh.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. ix. p. 659

Hab. Red Sea; Metcalf. West Indies; Lamarck.

The specimen here figured from Mr. Metcalf's collection was received with several others from the Red Sea, along with *Mugilus*, *Polina*, and other genera peculiar to that locality, and if the habitat, West Indies, given by Humphreys and Lamarck, be correct, we have a remarkable coincidence of an observation in genus *Olivæ*—that the only two species inhabiting the Red Sea are identical with two in the West Indies.

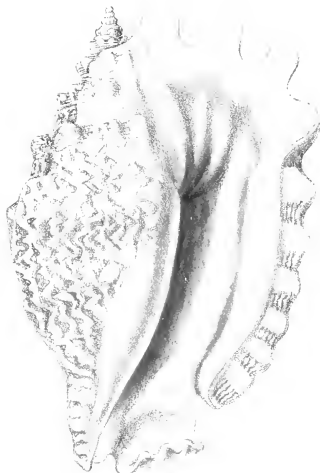




23



24



25



26



27

STROMBUS.

PLATE XI.

Species 23. (Mus. Cuming.)

STROMBUS MACULATUS. *Stromb. testâ subquadrato-ovata, crassiusculâ, spirâ brevî, ovatâ, subaristatâ, anfractibus spirâliter striatis, superâ gibboso-tumidis, subradè convolutis, basi versus contractis, columellâ et aperturae fauce levè corrugatis; albi, rufo-fusco leuoglymâ, aequalisque nigricantibus interruptè fasciatâ, columellâ et aperturae fauce albis.*

THE BLOTCHED STROMBUS. Shell somewhat squarely ovate, rather thick, spire short, sharp, slightly varicose, whorls spirally striated, gibbously swollen round the upper part, somewhat rudely convoluted, contracted towards the base, columella and interior of the aperture finely wrinkled, white, freckled with red-brown, and banded in an interrupted manner with blackish blotches, columella and interior of the aperture white.

NUTTALL, Sowerby Thesaurus Conch. p. 59. pl. 7. f. 53.
Hab. Sandwich Islands; Nuttall.

This species is well characterized by the swollen gibbous development of the whorls next the sutures.

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

STROMBUS URCEUS. *Stromb. testâ subfusiformi-oblongâ, spirâ exertâ, turritâ, plerumque varicosâ, anfractibus spirâliter striatis, basi levè sulcatis, superâ declivibus, obtusè angulatis, ad angulum umboso-tuberculatis, columellâ laminatâ, partim corrugatâ, apertura oblongâ, subangustâ, intus densè subtilissimè corrugatâ; albidâ aut rufescente, griseo-fusco rittatâ et variegatâ, columellâ et aperturae fauce sarpiusimè intusè purpureo-nigricantibus, interiorum rufo vel aurantio luctis.*

THE PITCHER STROMBUS. Shell somewhat fusiformly oblong, spire exerted, turrited, mostly varicose, whorls spirally striated, finely grooved at the base, slanting round the upper part, obtusely angled, nodosely tubercled at the angle, columella laminated, partially wrinkled, aperture oblong, rather narrow,

densely finely wrinkled within; whitish or reddish, filleted and variegated with grey-brown, columella and interior of the aperture generally intense purple-black, sometimes tinged with red or orange.

LINNÆUS, Syst. Nat. (12th edit.) p. 1212.

Cumarina isolatum, Schumacher.

Hab. Island of Ticao, Philippines (on the reef); Cuming, Australia.

This species may generally be recognized by the dark purple-black colouring of the columella and aperture, which in some specimens is, however, only partially indicated.

Species 25. (Mus. Cuming.)

STROMBUS LACINIATUS. *Stromb. testâ ovata, spirâ exertâ et conspicuè umboso-tuberculatâ, anfractibus spirâliter striatis, ultimo fortiter tuberculato, pone labrum radiatum costato, columellâ callosâ, labro late dilatato, superâ usque ad apicem producto, peculiariter cristato, latere crassè repliato; albida, aurantio-fusca pulcherrimè variegatâ, apertura fauce intusè rufo-purpureâ.*

THE CRESTED STROMBUS. Shell ovate, with the spire exerted and conspicuously nodosely tubercled, whorls spirally striated, last whorl strongly tubercled, radiately ribbed behind the lip, columella callous, lip broadly dilated, produced at the upper part as far as the spire, peculiarly crested, side thickly folded in; whitish, beautifully variegated with orange-brown, interior of the aperture deep crimson-purple.

CHEMNITZ, Conch. Cab. vol. x. p. 223. pl. 158. f. 1506, 7.

Strombus cristatus, Lamarck.

Hab. Islands of Negros and Ticao, Philippines (in coarse black sand at a depth of about eleven fathoms); Cuming.

There is little or no variation in the form or colour of this beautiful species, the finely dilated lip being always crested next the apex, while the interior of the aperture is remarkable for its very deep crimson-purple enamel.





STROMBUS.

PLATE XII.

Species 26. (Mus. Saut.)

STROMBUS COLUMBA. *Stromb. testâ ovatâ, subfusiformi, spirâ acutè cæsertâ, turrilâ, apicem versus evicosa, suturis conspicuè marginatis, anfractibus spiritaliter striatis, pæne labrum rotatum lirisitis, superiè obtusè angulatis, ad angulum plicato-nodatis, columellâ callusâ, tumidâ, corrugatâ, labro alato, longitudinaliter plicato, margine incrassato, supra anfractus penultima producta, apertura fovee unigue fortiter corrugatâ; albida, aërantio-fusco variegatâ et fusciatâ, columellâ et apertura fovee intusè purpureo tinctis.*

THE DOVE STROMBUS. Shell ovate, somewhat fusiform, spire sharply exerted, turreted, varicose towards the apex, sutures conspicuously margined, whorls spirally striated, radiately ridged behind the lip, obtusely angled at the upper part, plicately noded at the angle, columella callous, swollen, wrinkled, lip winged, longitudinally plicated, margin thickened, produced above the penultimate whorl, interior of the aperture strongly wrinkled throughout; whitish, variegated and banded with orange-brown, columella and interior of the aperture stained with purple.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 702.
Strombus Tauckereilli, Swainson.

Hab. Zanzibar; Thorne.

Distinguished by its earvel turreted spire and richly purple-wrinkled aperture.

Species 27. (Mus. Bril.)

STROMBUS RUBONIUS. *Stromb. testâ ovatâ, subrudè concolatâ, spirâ læviusculâ, sulcatâ et striatâ, hic illic varicosâ, apice acutâ, anfractibus læviusculis, superiè concavis, irregulariter supra et infra nodatis, nodis nunc ferè eanidis, nunc fortiter tuberculatis, columellâ lævigatâ, apertura oblongâ, labro vix dilatato; roseo-fuscâ, roseo fasciatâ, maculis strigisque albis variegatâ.*

THE OWL-WINGED STROMBUS. Shell ovate, somewhat rudely convoluted, spire rather short, grooved and striated, here and there varicose, spire sharp, whorls rather smooth, coneave round the upper part, irregularly nodose above and below, nodules sometimes

nearly faded, sometimes strongly tubercled, columella smooth, aperture oblong, lip but little dilated; rose-brown, banded with rose, and variegated with white spots and streaks.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 692.

Strombus fasciatus, pars, Gmelin (not of Born).

Eadem var. *Strombus dilatatus*, Lamarck.

Hab. West Indies. Porto Praya, Cape de Verd Islands. Capt. Graves.

This species is remarkable for its variegated rose painting, and for the unequal development of the tubercles.

Species 28. (Mus. Cuming.)

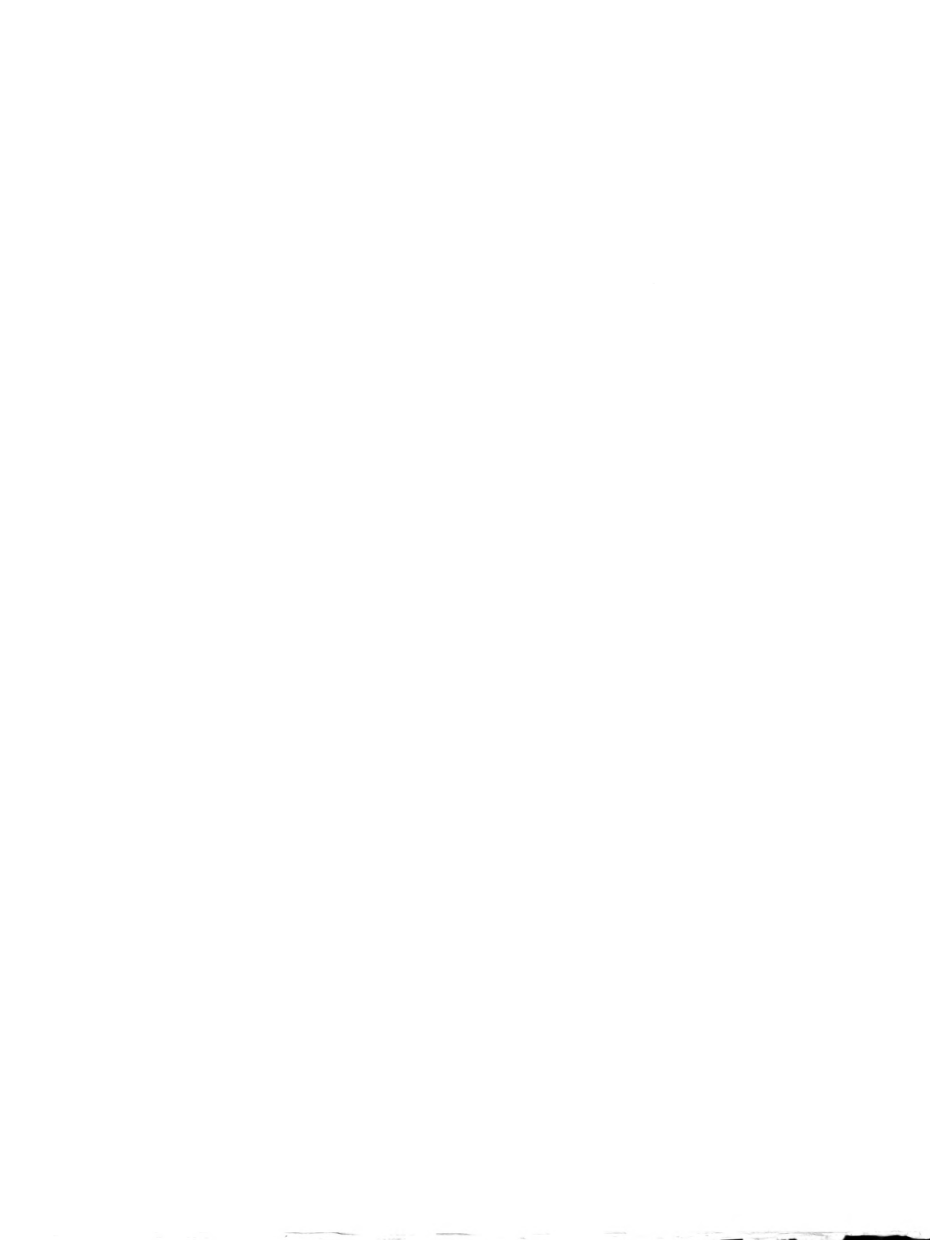
STROMBUS SWAINSONI. *Stromb. testâ fusiformi-ovatâ, spirâ acuminato-turrilâ, anfractibus unigue spiritaliter striatis, superiè rotundatis et subtilissimè plicatis, plicis in anfractu ultimo subnodosis, anticè eanidis, columellâ callusâ, tumidiusculâ, supra et infra corrugatâ, labro alato, margine acutè dilatato, supra anfractus penultima producta, apertura fovee peculiariter dense corrugatâ; albida, aërantio-fusco tinctâ, zonatis angustis albis subobscurè cingulatâ, spirâ pallidè rosacè, columellâ albâ, apertura fovee intusè purpureo lineatâ.*

SWAINSON'S STROMBUS. Shell fusiformly ovate, spire acuminately turreted, whorls being spirally striated throughout, rounded at the upper part and very finely plicated, the plaits becoming subnodose on the last whorl, but absent on the front, columella callous, rather swollen, wrinkled above and below, lip winged, edge sharply dilated, produced over the penultimate whorl, interior of the aperture peculiarly thickly wrinkled; whitish, stained with orange-brown, encircled with somewhat obscure narrow white zones, spire tinged with pink, columella white, interior of the aperture lined with dark purple.

Strombus dilatatus, Swainson (not of Lamarck) Zoological Illus. 1820.

Hab. — ?

Distinguished from *S. columba* by the finer plicated sculpture of the spire, sharply dilated lip, and peculiar wrinkling of the aperture.





26 a



30 b

STROMBUS.

PLATE XIII.

Species 29. (Mus. Sait.)

STROMBUS PAPILLO. *Stromb. testâ ovata, spirâ breviusculâ, apice ventri, anfractibus transversis tenuè lincatis et striatis, nodisque papilloso-nodatis, superne planicoarctis, ad angulum fortiter tuberculatis, columellâ callosâ, basi, labro spiram versus producto, parva expanso, superne late sinuato, aperturae fauce lenè curvata; albâ, fusco sparsim lineatâ et maculatâ, columellâ pallidè caruatâ, aperturae fauce intus parvè nigricantè.*

THE BUTTERFLY STROMBUS. Shell ovate, spire rather short, sharp at the apex, whorls transversely finely ridged and striated, papilloso-noduled throughout, flatly concave round the upper part, strongly tubercled at the angle, columella callous, smooth, lip produced towards the spire, but little expanded, broadly sinuated above, interior of the aperture finely wrinkled; whitish, sparingly lineate and blotched with brown, columella pale carmelion, interior of the aperture purple-black.

CHEMMITZ, Couch. Cab. vol. v. pl. 155. f. 1510, 1511.

Strombus albus, Swainson.

Hab. Island of Ticao, Philippines (on coral reefs at low water); Cuming.

Very closely allied to *S. lentiginosa* in form, but amply distinguished by its wrinkled and richly-coloured aperture.

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

STROMBUS BITUBERCULATUS. *Stromb. testâ conico-ovata, basi productâ et evenâ, spirâ ventri, carinata, anfractibus transversis striatis et lincatis, parva labrum radiatis, superne depressiusculis, obsolete nodatis, anfractus ultimi nodis fortioribus, tuberculis duobus caldè prominèntibus, columellâ callusâ, labro expanso, incrassato, in labrum brevè terminato; griseo-albicantè, fusco copiosè maculatâ, aperturae fauce roseo-linctâ.*

THE TWO-TUBERCLED STROMBUS. Shell conically ovate,

produced and recurved at the base, spire sharp, varicose, whorls transversely striated and ridged, rayed behind the lip, rather depressed round the upper part, obsolete noduled, nodules of the last whorl stronger, with two very prominent tubercles, columella callous, lip expanded, thickened, terminated in a short lobe; greyish-white, copiously marbled with brown, interior of the aperture tinged with rose.

LAMARCK, Ann. sans vert. (Deshayes' edit.) vol. ix. p. 690

Strombus lobatus, Swainson.

Hab. Island of Granada, West Indies.

The two very prominent tubercles which are formed, prior to the expansion of the mature lip, form a characteristic feature in this species.

Species 31. (Mus. Cuming.)

STROMBUS LENTIGINOSUS. *Stromb. testâ oblongo-ovata, crassiusculâ, spirâ brevi, anfractibus transversis lincatis et striatis, papilloso-nodatis, superne depressiusculis, ad angulum fortiter tuberculatis, columellâ callosâ, labro spiram versus producto, utrinque late sinuato; albâ, griseo-fusca antigne lentiginosâ, aperturae fauce flavoventri.*

THE FRECKLED STROMBUS. Shell oblong-ovate, rather thick, spire short, whorls transversely ridged and striated, papilloso-noduled, depressly concave round the upper part, strongly tubercled at the angle, columella callous, lip produced towards the spire, broadly sinuated at each end; white, freckled throughout with greyish-brown, interior of the aperture yellowish.

LINNEUS, Syst. Nat. (Deshayes' edit.) vol. ix. p. 693

Hab. Island of Luzon, Philippines (on the reefs in shallow water); Cuming.

Distinguished by a light grey freckled pattern upon a yellowish-white ground, which presents little variation. The edge of the lip is faintly tessellated with square brownish blotches.





STROMBUS.

PLATE XIV.

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

STROMBUS GRANULATUS. *Stromb. testâ subquadrato-oblongâ, spirâ exsertâ, acuminato-turritâ, anfractibus transverseâ striatis, superâ concavo-depressis, obtusè angulatis, ad angulum tumidiusculis, et tuberculato-nodosis, anfractu ultimo liris nodulis subirregulariter cingulato, columella callosa, labro subexpanso et flexuoso, intus peculiariter granulato; albâ, rufo-fusco maculorâ, columellâ caracoli, interliria uterâ rarè rosâci.*

THE GRANULATED STROMBUS. Shell somewhat squarely oblong, spire exerted, acuminately turreted, whorls transversely striated, concavely depressed round the upper part, obtusely angled, rather swollen and tubercularly noded at the angle, last whorl encircled somewhat irregularly with noded ridges, columella callous, lip slightly expanded and flexuous, peculiarly granulated within; whitish, marbled with reddish-brown, columella carnelion, sometimes but rarely tinged with pink.

GRAY, Wood Ind. Test. Supp. pl. f. f. 21.

Hab. St. Helena, and Galapagos Islands (in sandy mud at a depth of from six to eight fathoms); Cuming.

This species is remarkably characterized by the development of a broad cluster of granules on the internal surface of the expanded lip. They are but faintly indicated in the pink-stained variety represented at Fig. 32, b.

Species 33. (Mus. Cuming.)

STROMBUS GUTTATUS. *Stromb. testâ oblongo-ovata, basi colli recurvâ, spirâ acuminatâ, anfractibus lœvibus, ad marginem suturalem levè angulatis, deinceps concavis, ad angulum tuberculato-nodatis, columellâ unilique callosâ, excavato super spiram usque ad apicem effuso, labro subexpanso, incrassato, superâ in lobo digitiformi protungato; carneo-spadiosi, foveis albis unilique guttatâ, excavato albo, apertura foveâ intensa rosâ lineatâ.*

THE SPOTTED STROMBUS. Shell oblong-ovate, very much recurved at the base, spire acuminated, whorls smooth, finely noded along the sutural margin, then concave, tubercularly noded at the angle, columella callous throughout, the enamel flowing over

the spire as far as the apex, lip slightly expanded, thickened, prolonged at the upper part into a digitiform lobe; flesh-tinged fawn-colour, spotted throughout with white flakes, enamel white, interior of the aperture stained with deep red.

Pagil guttatus lævis, Martini, Conch. Cab. vol. iii. p. 126 pl. 84. f. 810.

Strombus guttatus, Kiener.

Strombus Auris-Diane pars, Linnæus.

Strombus Auris-Diane, Sowerby.

Hab. Island of Burias, Philippines (on the reefs in shallow water); Cuming.

Martini well distinguished this species from the true *S. Auris-Diane*, which is roughly ribbed and ridged. The *S. guttatus* is conspicuously characterized by its smooth polished surface of a pinkish-fawn colour, sprinkled with irregular flakes of white; and it is remarkable for its copious deposit of enamel, which flows over the spire even to the apex.

Species 34. (Mus. Cuming.)

STROMBUS AUSTRALIS. *Stromb. testâ subquadrato-oblongâ, spirâ exsertâ, anfractibus unilique transverseâ nodoso-tratis et striatis, superâ nodulis parvis varginatis, deinceps concavo-angulatis, nodis ad angulum majoribus, columellâ callosis, labro incrassato, expanso, dilatato, superâ in lobo obtusè digitiformi protungato, apertura foveâ conspicuè radiatâ corrugato; albâ, labi limbo intus varietio-rufa lineatâ.*

THE AUSTRALIAN STROMBUS. Shell somewhat squarely oblong, spire exerted, whorls transversely nodosely ridged and striated, edged at the upper part with small nodules, then concavely angled, the nodules at the angle being larger, columella callous, lip thickened, expanded, dilated, prolonged at the upper part into an obtusely finger-shaped lobe, interior of the aperture conspicuously radiately wrinkled; whitish, edge of the lip stained with orange-red.

OWERBY, Thesaurus Conch. p. 36. pl. 9. f. 26, 27.

Hab. Australia.

This species, which is distinctly characterized as well in form as in the strong radiating wrinkled sculpture of the aperture, is doubtless richly marked in fine condition.





35.

36. a

36. b

37.

STROMBUS.

PLATE XV.

Species 43. (Mus. Cuning.)

STROMBUS NOVÆ-ZELLANDIÆ. *Stromb. testâ oblongo-ovata, basi recurvâ, spirâ acuminato-turrilatâ, infractibus superâcè depresso-concavis, deinde vultu tuberculato-angulatis, infra antris tenuissimis liris, columellâ callousâ, labro expanso, subulobato, superâcè lobo digitiformi terminato, aperturae fovee valde callosâ fortiter corrugato-sulcata; albâ, spandiva-fusca curvè pictâ, strigatâ et maculata, columellâ albâ, antrâ costarâ usquè lineâ, aperturae fovee intusâ auratiâ, liris albâs.*

THE NEW ZEALAND STROMBUS. Shell oblong-ovate, recurved at the base, spire acuminately turreted, whorls depressedly concave round the upper part, then sharply tubercularly noduled, transversely ridged beneath the nodules, columella callous, lip expanded, somewhat dilated, terminated at the upper part with a finger-shaped lobe, interior of the aperture strongly radiately grooved and wrinkled; whitish, variously painted, streaked and marbled with fawn-brown, columella whitish, stained with a large chestnut blotch, interior of the aperture deep orange, ridges whitish.

CHEMNITZ, Couch, Cab. vol. 10, pl. 156, f. 1185-6.

Strombus pacificus, Swainson.

Hab. New Zealand.

This species is remarkably distinguished by its richly rayed aperture and by the large chestnut blotch upon the columella. The locality "shores of Peru" given by Kicour and Deshayes is not likely to be correct.

Mr. Swainson has too frequently overlooked the important "Conchylien Cabinet" of Martini and Chemnitz, by whom he is anticipated in several of his species

Species 36. (Fig. 36 a, 36 b, and 37, Mus. Cuning.)

STROMBUS ACRES-DIANÆ. *Stromb. testâ oblongo-ovata, basi recurvâ, spirâ acuminato-turrilatâ, infractibus rugosè et echinatis liris, liris pæne labrum radiatis, liris illis nodatis, infractura parte superiori marginata, concavo, deinde tuberculato-angulato, columellâ callidè callousâ, labro expanso, superâcè lobo digitiformi terminato, lobo incrassato, aperturae fovee superâcè leviter corrugatâ; albâ, fusco articulatis et maculatis, pæne labrum nigro aut fusco tessellatis, columellâ albâ vel alutâ, aperturae fovee vel antrâ, vel intusâ rosâ, lobo interloba alutâ-aurante.*

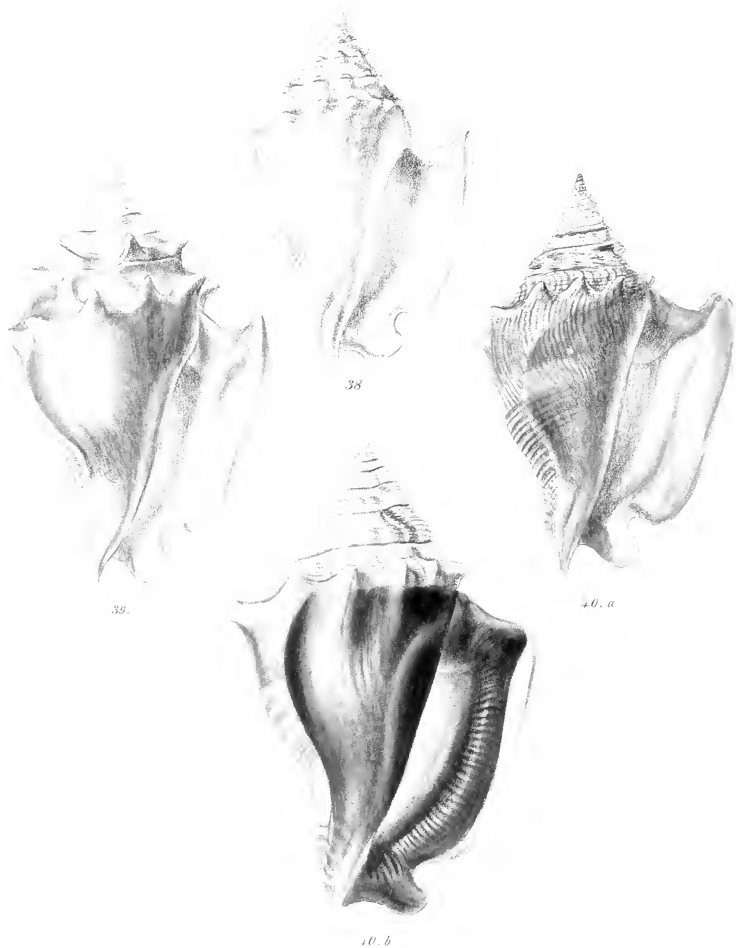
THE DIANA'S EAR STROMBUS. Shell oblong-ovate, recurved at the base, spire acuminately turreted, whorls roughly and very closely ridged, ridges rayed behind the lip, here and there noduled, upper part of the whorls margined, concave, then tubercularly noduled, columella very callous, lip expanded, terminated at the upper part in a finger-shaped lobe, edge of the lip thickened, interior of the aperture slightly wrinkled at the upper part; whitish, articulated and marbled with brown, tessellated with black or brown behind the lip, columella white or chestnut-brown, interior of the aperture cancellous, or very deep pink, lobe sometimes dust-black.

LINNEUS, Syst. Nat. (12th edit.) p. 1209.

Eadem var. *Strombus acres-dianæ*, Swainson.

Hab. Malayan Peninsula (in sandy mud at the depth of four fathoms) and Philippine Islands (on coral reef at low water); Cuning.

I quite agree with M. Deshayes that the three shells here figured are varieties of one and the same species. They differ in the colouring of the aperture, but there is no difference of form or sculpture.



STROMBUS.

PLATE XVI.

Species 58. (Mus. Cuming.)

STROMBUS GRACILIOR. *Stromb. testâ orato-conicâ, subfusiformi, spirâ acuminatâ, anfractibus levibus, basi leviter subrotatis, radiâ et subirregulariter convolutis, superne convexo-declivibus, deinde nodatis, nodis parvis, subacutis, columellâ callisâ, labro subalato, aperturae fauce prope labrum obsolete corrugatâ: palliâ rufescente-aurantiâ, labri limbo rufescente, aperturae fauce albâ.*

THE MORE SLENDER STROMBUS. Shell ovately conical, somewhat fusiform, spire acuminated, whorls smooth, slightly grooved at the base, rudely and somewhat irregularly convoluted, concavely slanting round the upper part, then noded, nodules small and rather sharp, columella callous, lip slightly winged, interior of the aperture obsolete wrinkled near the lip: pale reddish-orange, edge of the lip tinged with red, interior of the aperture white.

SOWERBY. Tankerville Catalogue, App. p. xx.

Hab. St Elena and Panama, Central America (in sandy mud at a depth of from six to twelve fathoms): Cuming.

This species is constantly distinguished from the following by its rude convolution and comparatively obsolete nodules.

Species 59. (Mus. Cuming.)

STROMBUS PUGILIS. *Stromb. testâ orato-conicâ, subobesâ, spirâ acuminatâ, anfractibus levibus, basi et apicea versus subrotatis, superne convexis, ad angulâ fortiter spinoso-nodatis, columellâ callisâ, labro subalato, aperturae fauce prope labrum interdum obscure corrugatâ, aurantiâ-rufâ, columellâ et aperturae fauce intus carneo-rufis.*

THE ARMED STROMBUS. Shell ovately conical, rather

obtusè, spire acuminated, whorls smooth, grooved at the base and towards the apex, concave round the upper part, strongly spinose-noduled at the angle, columella callous, lip slightly winged, interior of the aperture sometimes obscurely wrinkled near the lip: orange-red, columella and interior of the aperture deep carmelion-red.

LINNEUS, Syst. Nat. (12th edit.) p. 1209.

Hab. West Indies and Gulf of Mexico.

Chiefly remarkable for the strong spine-like character of the nodules.

Species 60. (Mus. Cuming.)

STROMBUS ALATUS. *Stromb. testâ orato-conicâ, subobesa, spirâ acuminatâ, anfractibus levibus, basi et apicea versus conspicue sulcatis, superne convexis, ad angulâ nodatis, nodis parvisentis, columellâ eadè callisâ, labro alato, aperturae fauce labrum versus corrugatâ: castaneo-fusâ, columellâ et aperturae fauce intus nigricante-castaneis, interdum carneo-rufis.*

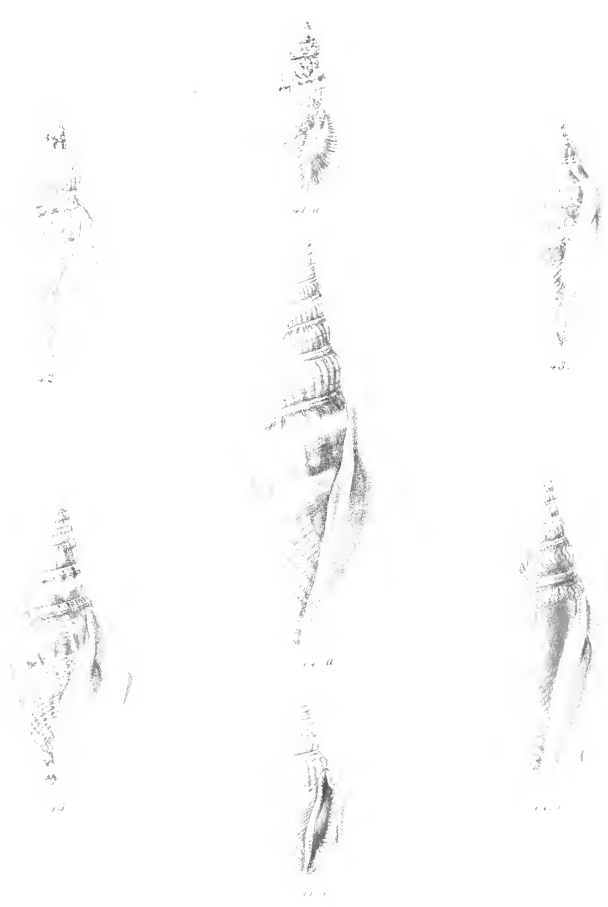
THE WINGED STROMBUS. Shell ovately conical, rather stout, spire acuminated, whorls smooth, conspicuously grooved at the base and towards the apex, concave round the upper part, noded at the angle, nodules rather small, columella very callous, lip winged, interior of the aperture wrinkled towards the lip, chestnut-brown, columella and interior of the aperture deep blackish-chestnut, sometimes carmelion-red.

GMELIN, Syst. Nat. p. 3513.

Strombus pygmalus, Lamarck.

Hab. Gulf of Mexico.

It is extremely doubtful whether this is a distinct species from the preceding. The nodules are not so prominent, and the spire is generally more strongly grooved



STROMBUS.

PLATE XVII.

Species 41. (Fig. a, b, Mus. Cuming.)

STROMBUS ELEGANS. *Stromb. testâ fissiforâ-auriculâ, spirâ exsertâ, anfractibus transversis leviteratis, superâ late rugulatis, ad angulâ plicato-analâ, costâ tenuiâ flexuâ plicatâ, columellâ crassâ laminaâ, supra et infra eorugatâ, aperturâ subcinctâ, fauce duse eorugatâ; albâ, rufo-fusca, fuscâ et punctatâ, columellâ et aperturâ fauce purpuris celâ intusâ rufâ.*

THE ELEGANT STROMBUS. Shell fusiformly turreted, spire exerted, whorls transversely finely ridged, broadly angled at the upper part, plicately noduled at the angle, with a swollen flexuous rib behind the lip, columella thickly laminated, wrinkled above and below, aperture somewhat contracted, interior densely wrinkled; whitish, banded and dotted with red-brown, columella and interior of the aperture purple or deep red.

SOWERBY, *Thesaurus Conch.* p. 20, pl. 7, f. 13 and 18.

Hab. Red Sea; Ruppell. Philippine Islands (in coarse sand at the depth of eight fathoms); Cuming.

Very closely allied to *S. rugosus*, from which it differs in being of a more fusiform turreted shape.

Species 42. (Mus. Cuming.)

STROMBUS JAPONICUS. *Stromb. testâ fissiforâ-auriculâ, spirâ callâ exsertâ, anfractibus anfractibus et regulariter subcatis, superâ declivâ-eucaris, ad angulâ subobscure plicato-analâ, apicâ versus longitudinaliter tenuiusculatis, columellâ callosâ, laminaâ, labro alato, intus conspicuâ, radiatâ eorugatâ; albâ, rufo-fusca, laetâ et eorugatâ, zonâlis albis, zonâlis sagittariis interruptis, cingulatâ, columellâ et aperturâ fauce eborâis.*

THE JAPAN STROMBUS. Shell fusiformly turreted, spire much exerted, whorls transversely very closely and regularly grooved throughout, slantingly concave round the upper part, somewhat obscurely plicately noduled at the angle, longitudinally finely ribbed towards the apex, columella callous, laminated, lip winged, conspicuously radiately wrinkled within; white, stained and variegated with red-brown, encircled with narrow white zones, interrupted with arrow-headed markings, columella and interior of the aperture ivory-white.

Hab. Japan.

This species is certainly distinct from *S. elliptus* and *Campbelli*, chiefly in the slanting concavity of the upper portion of the whorls and in their close transverse growing.

Species 43. (Mus. Cuming.)

STROMBUS SUCINCTUS. *Stromb. testâ oblongo-ovata, sub-fusiformi, spirâ acuminatâ, apice acutâ, anfractibus laevibus, superâ declivâ, anfracta altitudo obsolete rade tuberculata, labro alato, ad spiram producta, columellâ callosâ, aperturâ subangustâ, superâ conspicuâ, radiatâ, fauce radiatâ eorugatâ; fulco-spideris, fusco eximie leuciguis, zonâlis albis, zonâlis sagittariis interruptis, cingulatâ, columellâ et aperturâ fauce eborâis.*

THE GIRDLED STROMBUS. Shell oblong-ovate, somewhat fusiform, spire acuminate, apex sharp, whorls smooth, slanting round the upper part, last whorl obsolete, rarely tubercled, lip winged, produced upon the spire, columella callous, aperture rather narrow, conspicuously channelled at the upper part, interior radiately wrinkled; fulvous fawn-colour, delicately freckled with brown, encircled with white zones, interrupted with arrow-headed marks, columella and interior of the aperture ivory-white.

LINNEUS, *Syst. Nat.* (12th edit.) p. 1212.

Strombus acicatus, Born.

Hab. Island of Masbate, Philippines (on the reefs at low water); Cuming.

Chiefly characterized by the channelled growth of the lip upon the spire, and the slanting form of the whorls round the upper part.

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

(Fig. b, Mus. Sml.)

STROMBUS VITTATUS. *Stromb. testâ elongato-auriculâ, basi conspicuâ sulcatâ, anfractibus aut laevibus aut transversis leviteratis, longitudinaliter subtiliter costatis, superâ angustâ et depressâ, anfracta altitudo laetâ laetâ, columellâ callosâ, labro alato, intus obscure eorugatâ, ad anfractum penultimum producta; rufo-fusca, vittis luteo-auratis, lineâ et eorugatâ, columellâ et aperturâ fauce nigrâ.*

THE GREAT MARIANAS STROMBUS. Shell elongately turritid, conspicuously grooved at the base, whorls either smooth or transversely finely striated, longitudinally broadly ribbed, marginated and depressed round the upper part, last whorl smooth, columella callous, lip smooth, rather obscurely wrinkled within, produced upon the last whorl but one; white, stained and variegated with red-brown, interrupted here and there with ribands, columella and interior of the aperture white.

LINNÆUS, Syst. Nat. (12th edit.) p. 1211

Eadem var. *Strombus torretos*, Lamarek.

Hab. Philippine Islands; Cuming.

This species varies chiefly in being more or less sculptured—in some specimens nearly the entire shell is smooth, while in others it is elaborately ribbed and grooved.

Species 45. (Mus. Cuming.)

STROMBUS CAMPBELL. *Stromb. testâ fusiformi-turriti,*

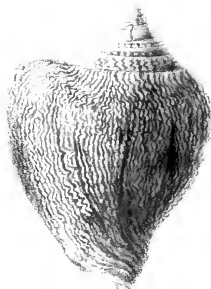
spira eade. summo, infra summo turbato, basi conspicue sulcatis, apice striatis, costis supra striatis, marginibus plicatis, latere externo gibboso, columella callosa, labio alato, interiori calloso, nudoque induratum et fusoidi, costis et plicis interius choracis.

CAMPBELL'S STROMBUS. Shell fusiformly turritid, spirally very much exerted, whorls smooth, conspicuously grooved at the base, ribbed towards the apex, broadly margined round the upper part, margin plicately ribbed, last whorl rudely gibbous at the back, columella callous, lip winged; whitish, freckled and banded throughout with reddish-brown, columella and interior of the aperture ivory-white.

GRAY, Griffith's Cuvier Anim. Kingdom. Moll. pl. 25.

Hab. Sandy Cape, North Australia, Jukes.

Independently of its shorter and more rudely gibbous form, this species differs from *S. vittatus* in having the margined summit of the whorls ribbed, whilst below this they are smooth.



STROMBUS.

PLATE XVIII.

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

STROMBUS CANARIUM. *Stromb. testâ abbreviato-oratâ, subtriangulâ, obesâ, pumbe-rosâ, spirâ parvisculâ, acutâ, carinâ, angustibus laticibus, gibbosis, apicea verrucosa sulcatis, columellâ rubrâ callusâ, labro alato, incrassato; allidâ aut fulvescente, lavis fuscis irregulariter flexuosis aulique dense longitudinaliter pictâ, columellâ et apertura favee chryseis.*

THE PARTRIDGE-WING STROMBUS. Shell shortly ovate, somewhat triangular, stout, heavy, spire rather small, sharp, varicose, whorls smooth, gibbous, grooved towards the apex, columella very callous, lip winged, thickened; whitish or fulvous, densely longitudinally painted throughout with irregularly flexuous brown lines, columella and interior of the aperture ivory-white.

LINNEUS, Syst. Nat. (12th edit.) p. 1211.

Eadem var. *Strombus Faurerensis*, Quoy.

Hab. Ceylon and Philippine Islands; Cuming.

A small species of solid growth, in which there is no indication of any sculpture except towards the apex.

Species 17. (Mus. Saul.)

STROMBUS MINIMUS. *Stromb. testâ oratâ, spirâ uncinatâ, apicea verrucosa carinâ, angustibus laticibus, superâe truncatâ angustâ, deinde angustâ, ad angulâ plicatâ nodatis, columellâ rubrâ callusâ, callositate aut spirâe productâ, labro alato, ad spirâe callusâ-productâ; spulveo-fusâ, columellâ albâ, apertura favee cruceâ.*

THE SMALL STROMBUS. Shell ovate, spire acuminated, varicose towards the apex, whorls smooth, finely margined round the upper part, then angled, plicately nodated at the angle, columella very callous, callosity produced at the spire, lip winged, callously produced on the spire; fawn-brown, columella white, interior of the aperture tinged with saffron.

LINNEUS, Mantissa, p. 549.

Strombus fragulolytes, Lamarck.

Hab. Island of Ticao, Philippines (on the reefs); Cuming.

This little species is chiefly distinguished by the callosities formed on the spire at the junction of the lip with the body-whorl, and by the saffron tinge of colouring within the aperture.

Species 18. (Mus. Cuming.)

STROMBUS SIBBALDI. *Stromb. testâ abbreviato-oratâ, obesâ, spirâ peculiariter uncinato-turratâ, apicea verrucosa carinâ et costatâ, angustibus gibbosis, truncatâ sulcatis, superâe convexo-angulatis, ad angulâ profusè nodulatis, columellâ callusâ et corrugatâ, basi truncatâ, labro alato, intus radiatâ corrugatâ; pallidè spulveâ, cillis lentiginosis cingulatâ, regis columellâ partim intense purpureâ, apertura favee albâ.*

SIBBALD'S STROMBUS. Shell abbreviated ovate, stout, spire peculiarly abbreviatedly turreted, varicose and ribbed towards the apex, whorls gibbous, transversely grooved, concavely angled round the upper part, profusely noduled at the angle, columella callous and wrinkled, truncated at the base, lip winged, radiately wrinkled within; light fawn-colour, encircled with freckled ribands, wrinkles of the columella partially coloured with deep purple, interior of the aperture white.

SOWERBY, Thesaurus Conch. p. 28. f. 10, 11.

Hab. Ceylon.

The form of this species is very peculiar, being short and gibbous with the spire singularly elevated, while the columellar wrinkles are characteristically stained with deep purple.

Species 19. (Mus. Cuming.)

STROMBUS MARGINATUS. *Stromb. testâ ovato-conicâ, spirâ brevi, subdepressâ, apice acutâ, angustibus laticibus, basi verrucosa sulcatis, inferâ contractis, superâe lacinatis, depresso-angulatis, ad angulâ penulimè marginatis, marginè prope apicem subtilissimè nodulato, columellâ callusâ, lacinatâ, apertura angustâ, superâe emuliculatâ, labro ad spirâe productâ, intus obscure corrugatâ; rufo-spulveâ, cillis lentiginosis cingulatâ, columellâ et apertura favee albâ.*

THE MARGINED STROMBUS. Shell ovately conical, spire short, rather depressed, sharp at the apex, whorls smooth, grooved towards the base, contracted at the lower part, swollen and depressly angled above, peculiarly margined at the angle, margin very finely noduled near the apex, columella callous, laminated, aperture narrow, channelled at the upper part, lip produced upon the spire, obscurely wrinkled within.

of blackish-brown, covered with 10-12 thin bands, coloration of the interior of the shell.

Length, 5; Sp. N. 115, 116, 117, 120.

Hab. Philippine Islands, 3000 fms.

At the present time, however, it is not possible to decide whether the shell which Lamarck and others refer to the *Strombus* species is the correct type. The diagnoses of the *Strombus* species are often too brief to fix the identity of the species, which is not unfrequently illustrated by two, three, or more figures of different specific characters, *S. angulatus*, though differing so materially in form, as to vary much the appearance of a longitudinally impressed variety of *S. succedens*.

Species 50. (Mus. Saul.)

STROMBUS LUGOSUS. *Stromb. testis subtrigono-ovata, basi apiculata et subauriculata, spiris annulatis, infractibus transversis creberrime solentis, superiore obtuse angulatis, et angulo profuse plicato-nodatis, columella callosa, et, lobis conspicuo alata, incurvata: fulco-spiralibus, columella et aperturae fovea chloracis.*

THE TRIANGULAR STROMBUS. Shell somewhat triangularly ovate, attenuated and slightly twisted at the base; spire annulated and slightly twisted at the upper part, obtusely angled round the upper part, profusely plicately nodulated at the angle; columella very callous, lip conspicuously winged, thickened; fulvous-fawn, columella and interior of the aperture ivory-white.

GRAY, Wood Indes Test. Suppl. pl. 4.

Hab. Cagayan, Island of Mindanao, Philippine Islands; found at the depth of twenty-five fathoms.

The detail of sculpture in this species is very similar to that in *S. ulanans*.

Species 51. (Mus. Cuming.)

STROMBUS ISABELLA. *Stromb. testis subtrigono-ovata, spiris brevis, apice nodis, infractibus laticostatis, et callosis, superiore columellatis, prope apicem solentis et creberrimis, columella callosa, lobis subulatis, simplicibus, spirale fulco-foveis, immixtibus, interstria velis rufofasciatis, columella et aperturae fovea albis.*

THE ISABELLA STROMBUS. Shell somewhat triangularly ovate; spire short, sharp at the apex, whorls smooth grooved and varicose near the apex, columella callous; lip slightly winged, simple; dirty fulvous brown, unspotted, sometimes, but rarely, banded, columella and interior of the aperture white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix, p. 700.

Eadem var. *Strombus laevius*, Quoy.

Hab. Philippine Islands (on the reefs at low water) Cuming.

Notwithstanding the similarity of form between this species and *S. caurina*, there can be little doubt of their being distinct. The shell is not so thick in substance, and there is a marked difference in the growth of the lip—the most characteristic part of the shell in *Strombus*.



STROMBUS.

PLATE XIX.

Species 52. (Mus. Cuming.)

STROMBUS PULCHELLUS. *Stromb. testâ subquadrato-ovata, spirâ acuminato-turrâta, anfractibus radiatis subvatis, superâ rotundatis, creberrimè nudo-plicatis, apicem versus conspicuè varicosis, anfractu ultimo costâ lamina pœne lobata, columellâ callosa, labro alato, intus fortiter radiata corrugato; albâ, rufescente-spaldico fasciata et lentiginosâ, columellâ parte superiori et apertura foveâ intense purpureis.*

THE PRETTY STROMBUS. Shell somewhat squarely ovate, spire acuminately turreted, whorls radiately grooved, rounded at the upper part, very closely nodulose plated, conspicuously varicose towards the apex, last whorl with a swollen rib behind the lip, columella callous, lip winged, strongly radiately wrinkled within; whitish, banded and freckled with reddish-fawn, upper part of the columella and interior of the aperture deep purple.

Hab. Island of Ticao, Philippines (on the reefs); Cuming.

This little species appears to be distinct from all the known varieties, and there are many, of *S. labiosus*, to which it is nearest allied.

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

STROMBUS SAMARENSIS. *Stromb. testâ fusiformi-oblongâ, basi prolongatâ, recurvâ, Turbelliformi, solidiusculâ, spirâ acuminatâ, apicem versus varicosâ, anfractibus brevis, politis, superâ plicato-costatis, costis minus obsolete, columellâ dense callosâ, apertura pœne, foveâ profusè corrugatâ, labro fortiter tridentato; albâ, rufo-fusco lineatâ et nebulatâ, columellâ albâ, apertura foveâ intense purpureâ, rugis albis.*

THE SAMAR STROMBUS. Shell fusiformly oblong, prolonged and recurved at the base, Turbellum-shaped, rather solid, spire acuminated, varicose towards the apex, whorls smooth, polished, plicately ribbed round the upper part, ribs more or less obsolete, columella thickly callous, aperture small, interior profusely wrinkled, lip strongly three-toothed; white, stained and clouded with red-brown, columella white, interior of the aperture deep purple, with the wrinkles white.

Strombus Samar. Chemnitz, Couch. Cab. vol. x. p. 224. pl. 157. f. 1593.

Strombus tridentatus, Lamarek.

Strombus deatatus, Sowerby (not of Linnæus).

Hab. Philippine Islands: Cuming.

This species was not known to Linnæus, having been first described and figured in the tenth volume of the 'Couchylian Cabinet', where Chemnitz distinguished it by the name of its habitat, one of the Philippine Islands.

Species 54. (Mus. Cuming.)

STROMBUS EPIDROMIS. *Stromb. testâ ovata, spirâ brevisculâ, apicem acutâ, anfractibus brevibus, superâ declivibus, rix angulatis, ad angulum profusè undulatis, columellâ callosâ, labro subampliter plano-expanso, rotundato; albâ, rufescente-spiculosa lentiginosâ, columellâ et apertura foveâ eboraceis.*

THE SAIL STROMBUS. Shell ovate, spire rather short, sharp at the apex, whorls smooth, slanting round the upper part, slightly angled, profusely noduled at the angle, columella callous, lip rather largely flatly expanded, rounded; white, freckled with reddish-fawn, columella and interior of the aperture ivory-white.

LINNÆUS, Syst. Nat. (12th edit.) p. 1211.

Hab. Island of Ticao, Philippines (on the reefs); Cuming.

Well characterized by its flatly expanded rounded lip, which stands out from the body of the shell like a spreading sail.

Species 55. (Mus. Brit.)

STROMBUS DEFORMIS. *Stromb. testâ subfusiformi-ovata, spirâ acuminato-turrâta, apicem acutâ, anfractibus transversis antique creberrimè sulcatis, superâ declivibus, ad angulum plicato-undulatis, nodis anticis in costis descenduntibus, columellâ callosâ, antique fortiter corrugatâ, labro alato, expanso, intus fortiter corrugato; albâ, rufo-fusco punctatâ et fasciata, columellâ et apertura foveâ albis.*

THE DEFORMED STROMBUS. Shell somewhat fusiformly ovate, spire acuminately turreted, sharp at the apex, whorls transversely very closely grooved throughout, slanting round the upper part, plicately noduled at the angle, nodules descending in front into ribs, columella callous, strongly wrinkled throughout, lip

aperture rounded, but only weakly flattened, whitish, columnella bevelled slightly, and columnella and interior of the aperture white.

Gen. Gr. (Gr.) Cat. Anim. Mus. Ind. Moll. pl. 25.

Hab. *Assam*, &c.

The form of this species is characteristic, and the actual size of the aperture and columnella is larger and stronger than usual.

Species 56. (Mus. Sand.)

STROMBIUS LIGATUS. *Stromb. testis acutus, acutus, spira*
caerulea, apert. rotunda, infundibulus laticylindricus, suprae
caeruleus, subcaeruleus, deinde tuberculatus, columnella ligata,
aperturam oblongam, subangustam, lobis simpliciter, suprae
caerulea, tubula, rufescente-fusca subtilissime testis-
gemmae, costulis nigris sagittatis fuscata, columnella et
interiora luteo-olivacea.

THE BANNED STROMBIUS. Shell more, conoid, upper short, sharp at the apex, whorls smooth, convexly slanting round the upper part, then tubercled, columnella smooth, aperture oblong, rather narrow, lip simple, sinuated at the upper part; whitish, very delicately freckled with reddish-brown, and banded with rows of arrow-headed black spots, columnella and interior of the aperture saffron-yellow.

BOHN, Mus. Vind. p. 278.

Strombus subulatus, Herbst.

Strombus polyfasciatus, Chemnitz.

Strombus lineatus, Lamarck.

Strombus Persicus, Swainson.

Hab. Red Sea.

Very distinct from all other species of the genus, especially in its peculiarity of colouring.

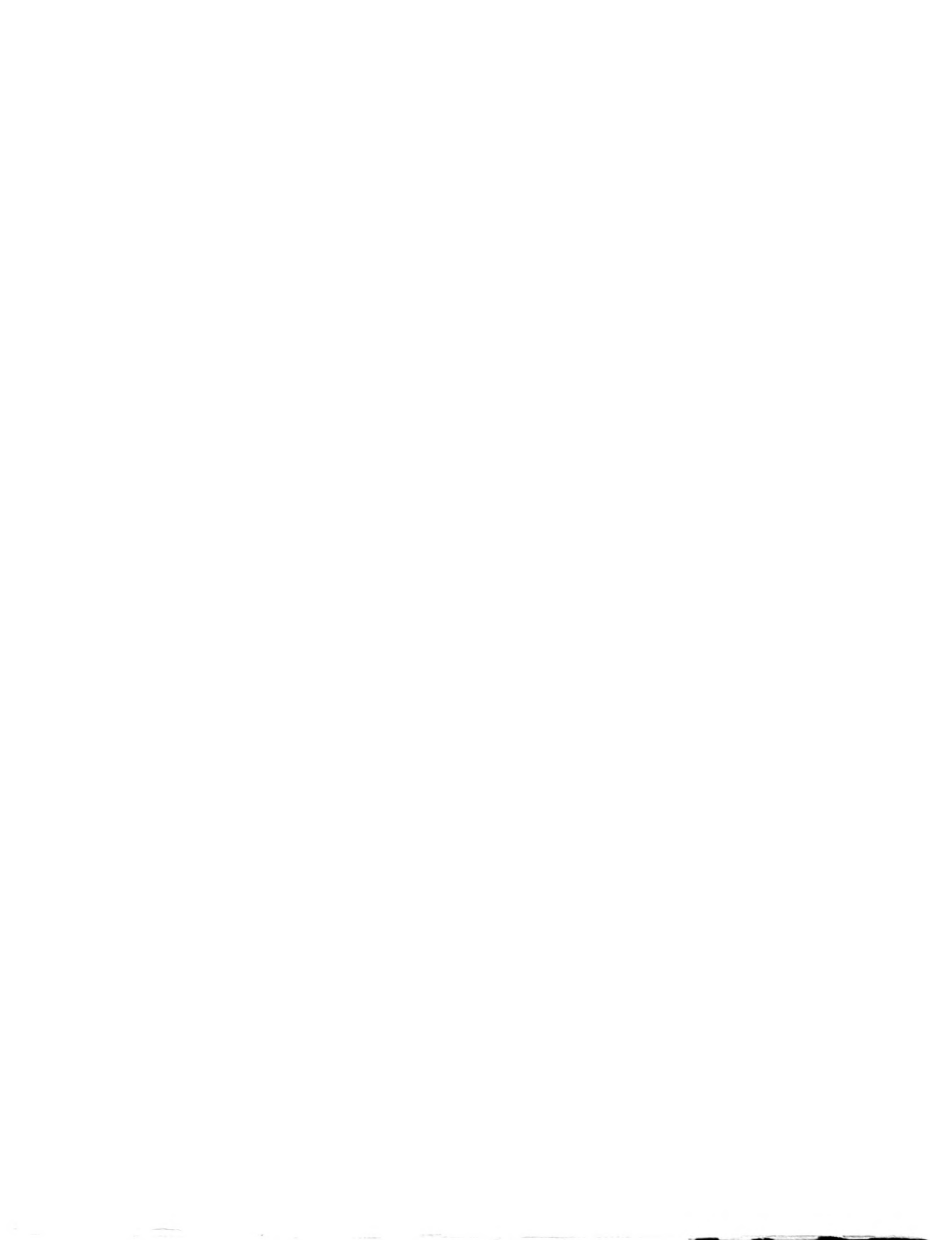
STROMBUS.

	Plate	Species.		Plate	Species.
<i>acinctus</i> , Born	XVII.	43	<i>labiosus</i> , Gray	XVIII.	50
<i>acutiprius</i> , Lamarck	VII.	12	<i>laevius</i> , Chemnitz	XI.	25
<i>adustus</i> , Swainson	XIII.	29	<i>latissimus</i> , Linnaeus	IV.	4
<i>alatus</i> , Gualtu	XVI.	10	<i>lentiginosus</i> , Linnaeus	XIII.	31
<i>auris-Diame</i> , Linnaeus	XV.	36	<i>livatus</i> , Lamarck	XIX.	56
<i>auris-Diame</i> , Sowerby	XIV.	33	<i>lobatus</i> , Swainson	XIII.	30
<i>Australis</i> , Sowerby	XIV.	34	<i>lucifer</i> , Linnaeus	II.	2
<i>bituberculatus</i> , Lamarck	XIII.	30	<i>Luhuanus</i> , Linnaeus	IX.	19
<i>hubonius</i> , Lamarck	XII.	27	<i>maculatus</i> , Nattall	XI.	23
<i>bulbulus</i> , Sowerby	VI.	8	<i>marginatus</i> , Linnaeus	XVIII.	19
<i>canarium</i> , Linnaeus	XVIII.	16	<i>Mauritanus</i> , Lamarck	IX.	20
<i>Campbelli</i> , Gray	XVII.	45	<i>melanosloanus</i> , Swainson	XV.	36
<i>columba</i> , Lamarck	XII.	26	<i>minimus</i> , Linnaeus	XVIII.	47
<i>corrugatus</i> , Adams & Reeve	IX.	16	<i>mutabilis</i> , Swainson	VII.	11
<i>costatus</i> , Gmelin	VII.	12	<i>Novae-Zelandiae</i> , Chemnitz	XV.	35
<i>creatus</i> , Sowerby	III.	3	<i>pacificus</i> , Swainson	XV.	35
<i>cristatus</i> , Lamarck	XI.	25	<i>papilio</i> , Chemnitz	XIII.	29
<i>cyliodricos</i> , Swainson	IX.	20	<i>Persicus</i> , Swainson	XIX.	56
<i>deformis</i> , Gray	XIX.	55	<i>Peruvianus</i> , Swainson	V.	6
<i>dentatus</i> , Linnaeus	IX.	17	<i>plicatus</i> , Lamarck	IX.	17
<i>dentatus</i> , Sowerby	XIX.	53	<i>polyfasciatus</i> , Chemnitz	XIX.	56
<i>dilatatus</i> , Lamarck	XII.	27	<i>pugilis</i> , Linnaeus	XVI.	39
<i>dilatatus</i> , Swainson	XII.	28	<i>pulchellus</i> , Reece	XIX.	52
<i>elegans</i> , Sowerby	XVII.	41	<i>pyralatus</i> , Lamarck	XVI.	40
<i>epidromis</i> , Linnaeus	XIX.	54	<i>rugosus</i> , Sowerby	IX.	16
<i>fasciatus</i> , Born	XIX.	56	<i>Ruppelii</i> , Reece	VIII.	13
<i>fasciatus</i> , Gmelin	XII.	27	<i>Samarensis</i> , Chemnitz	XIX.	53
<i>floridus</i> , Lamarck	VII.	11	<i>Sibbaldii</i> , Sowerby	XVIII.	48
<i>fusiformis</i> , Sowerby	V.	7	<i>subulatus</i> , Herbst	XIX.	56
<i>galea</i> , Wood	III.	3	<i>succinctus</i> , Linnaeus	XVII.	43
<i>galeatus</i> , Swainson	III.	3	<i>Swainsoni</i> , Reece	XII.	18
<i>gallus</i> , Linnaeus	IX.	18	<i>utaiatus</i> , Quoy	XVIII.	51
<i>gibberulus</i> , Linnaeus	VIII.	15	<i>Tankercillii</i> , Swainson	XII.	26
<i>gigas</i> , Linnaeus	II.	2	<i>terrebellatus</i> , Sowerby	VI.	10
<i>Goliath</i> , Chemnitz	I.	1	<i>Thersites</i> , Gray	VI.	9
<i>gracilior</i> , Sowerby	XVI.	38	<i>tricornis</i> , Lamarck	X.	22
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MONOGRAPH
OF THE GENUS
P T E R O C E R A.

What bear ye now, ye dancing wates
In your wild delirious play?
Sea-weeds or shells, from the coral caves
Where the flocks of ocean stray?—*Miss Roberts*





PTEROCERA.

PLATE I.

Genus PTEROCERA, *Linnaeus*.

Testa ovato-oblonga, ventricosa, spiri plus minus acuminatâ, inflexa utriusq; callicis majore, labro in alia digitata aspliter expanso, basi in columella digitata producta, columellâ et apertura fovea interclava brevibus, interclava densè serrugatis. Operculum carinatum, crassum, oblongum, acuminatum.

Shell ovately oblong, ventricose, spire more or less acuminate, last whorl much larger, with the lip largely expanded into a clawed wing, base produced into a clawed canal, columella and interior of the aperture sometimes smooth, sometimes densely wrinkled. Operculum horny, thick, oblong, acuminate.

The ten characteristic forms which have been associated under the head of *Pterocera*, are mainly distinguished by the outer lip being widely expanded over the summit of the spire, and developed into a number of spreading claws. The sculpture and even the colouring of the whorls about the spire is very similar in all. The typical varieties of character in the different species reside in the clawed lip, and in the columella and interior of the aperture, which are often brilliantly coloured. In *P. chironya* and *ragosa* the lip is expanded into six widely spreading claws, the columella and aperture being smooth in the first-named species, and wrinkled in the second. In *P. bryonia*, *lunata*, and *arctolucæ*, there are seven claws, and the columella and aperture are smooth. In *P. scorpius* and *psuedo-scorpis*, with seven claws, the columella and aperture are densely wrinkled, and the claws are nodose. In *P. elongata* and *multipes* with ten, and in *P. multipes* with eleven claws, the columella and aperture of all three are densely wrinkled.

No representative of this genus has been found in any part of the American coast. *P. ragosa* and *bryonia* were collected by Mr. Cuming at the Society Islands; the rest are from the Eastern Seas.

Species 1. (Mus. Cuming.)

PTEROCERA BRYONIA. *Pter. testâ ovato-oblongâ, spiri unac acuminatâ, unac truncatâ, inflexitibus subtiliter striatis, superâe convexâ, ad angulana fortiter nodatis, inflexa utriusq; callicis latissime expansa, septadactyla columellâ callusâ, basi, apertura fovea basi; albidâ, fuscescente cirâ lineâ, columellâ et apertura fovea albidâ-carinâ.*

THE WILD-VINE ROOT PTEROCERA. Shell ovately oblong, spire sometimes acuminate, sometimes truncated, whorls finely striated, convex round the upper part, strongly nodulated at the angle, last whorl with the lip very widely expanded, seven-clawed, columella callous, smooth, interior of the aperture smooth, whitish, but little stained with brown, columella and interior of the aperture whitish flesh-colour.

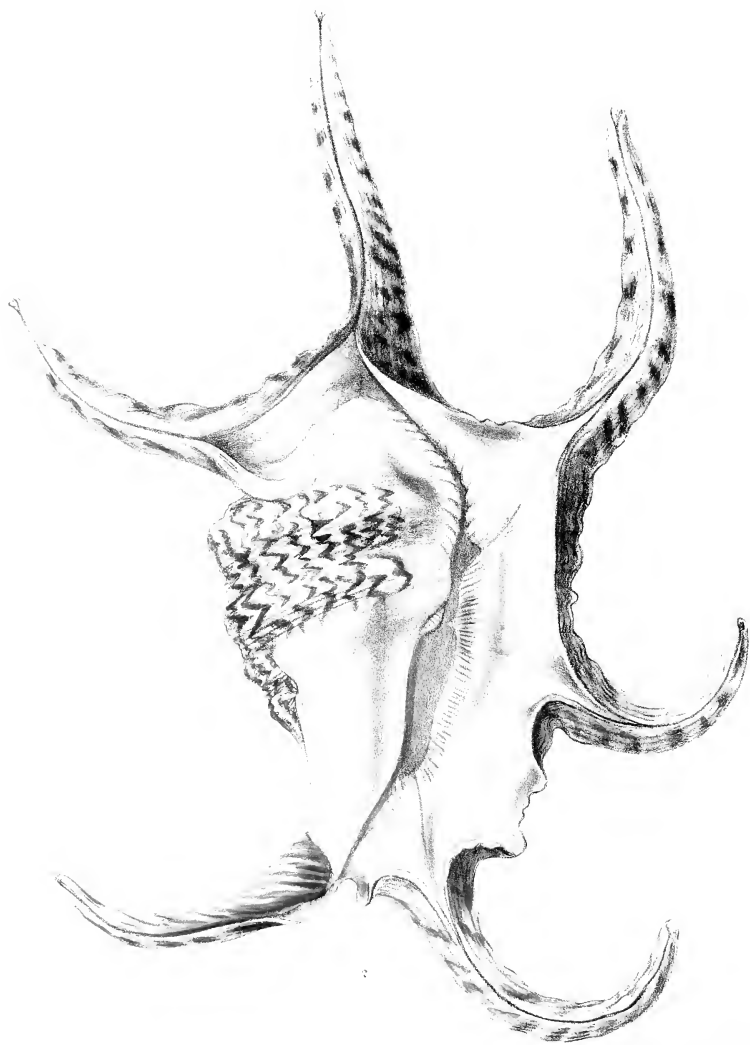
Straelus radix bryoniæ, Cuming, *Conch. Cab. vol. 4*, p. 227, pl. 159, f. 1512-15.

Straelus bryonia, Gmelin.

Eadem var. *Pterocera Scher.*, Valenciennes.

Hab. Society Islands: Cuming.

The spire of this, the largest species of the genus, is sometimes acuminate, sometimes flatly truncated. M. Valenciennes and M. Kiener regard these varieties as distinct species.



PTEROCERA.

PLATE II

Species 2. (Mus. Cuming.)

PTEROCERA CHIRAGRA. *Pter. testā ovato-oblongā, spirā
brevisculā, acuminatā, infraorbibus striis elevatis regu-
lariter cingulatis, superis concavis, deinde nodatis, an-
fractu altricis costis tuberosis cingulato, hexadactylo,
dactylis curvatis, longiusculis, latē expansis, columellā
subconvergētā, albidā, castaneo-fusci nulyque varian-
tātā et caricēptā, columellā et apertura fauce ruseo-
carneis*

THE GOULY PTEROCERA. Shell ovately oblong, spire
rather short, acuminate, whorls encircled with regu-
lar raised striae, concave round the upper part, then

noduled, last whorl encircled with tuberos ribs, six-
clawed, claws curved, rather long, widely spread,
columella faintly wrinkled; whitish, marbled and
variegated throughout with chestnut-red, columella
and interior of the aperture pinkish flesh-colour.

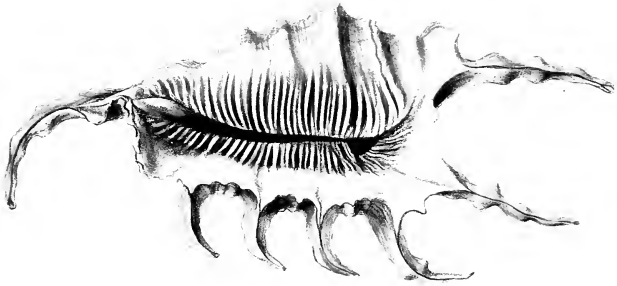
Strobilus chiragra, Linnæus, Syst. Nat. (12th edit.)
p. 1207.

Pterocera chiragra, Lamarek

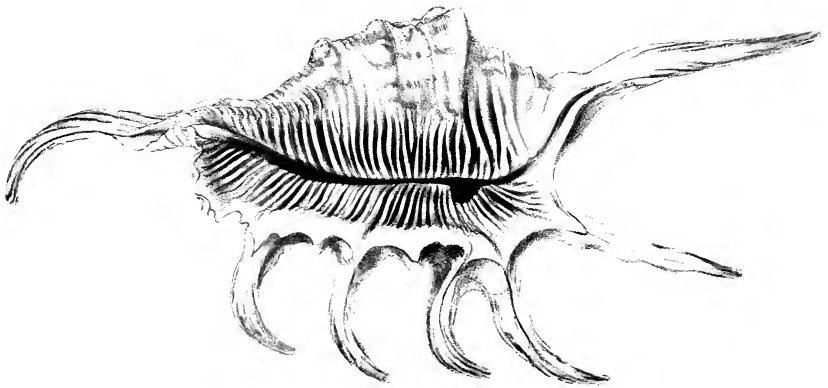
Hab. Island of Timor, &c., Eastern Seas

This well-known species is chiefly remarkable for the
widely-expanded, star-like arrangement of the claws.

February, 1851.



3.



4.

PTEROCERA.

PLATE III.

SPECIES 3. (Mus. Cuming.)

PTEROCERA SCORPIUS. *Pter. testâ ovato-oblongâ, spirâ heveosensâ, apice acutâ, anfractibus striis subtilibus elevatis cingulatis, superâ plano-declivibus, ad angulâ acutis, compressè nodatis, anfracta altâo costis tuberosè cingulata, heptadactylo, dactylis nodatis, lateralibus brevibus, curvatis, antica elongata, curvata, columellâ et apertura foveâ densè et fortiter corrugatis, labro anticè creata; albâ, castaneo-fusca sparsim maculatâ, columellâ et apertura foveâ roseo-cararâ, internè rubroca lactis, rugis albis.*

THE SCORPION PTEROCERA. Shell ovately oblong, spire rather short, apex sharp, whorls encircled with fine raised striae, flatly slanting round the upper part, sharp at the angle, compressly noded, last whorl encircled with tuberos ribs, seven-clawed, claws noded, side claws short, curved, front claw long, curved, columella and interior of the aperture densely and strongly wrinkled, lip crested in front: whitish, sparingly blotched with chestnut-brown, columella and interior of the aperture pinkish-blesh, stained with very deep violet, upon which the wrinkles are white.

Strophobus scorpius, Linnaeus, Syst. Nat. (12th edit.) p. 1208.

Pterocera scorpio, Lamarek.

Pterocera nodosa, Swainson.

Hol. Philippine Islands (on the reefs at low water); Cuming.

Well distinguished by its sharply noded claws, and intense violet colouring internally.

SPECIES 4. (Mus. Cuming.)

PTEROCERA PSEUDO-SCORPIO. *Pter. testâ ovato-oblongâ, spirâ heveosensâ, apice acutâ, anfractibus striis subtilibus elevatis cingulatis, superâ plano-declivibus, ad angulâ acutis et compressè nodatis, anfracta altâo costis tuberosè cingulata, heptadactylo, dactylis obsolete nodatis, lateralibus curvatis, duobus oppositis, dactylo postico longissimo, labro anticè creato, columellâ et apertura foveâ densè et fortiter corrugatis; albâ, castaneo-fusca maculatâ, columellâ et apertura foveâ intus fuscâ-purpurâ, rugis albis.*

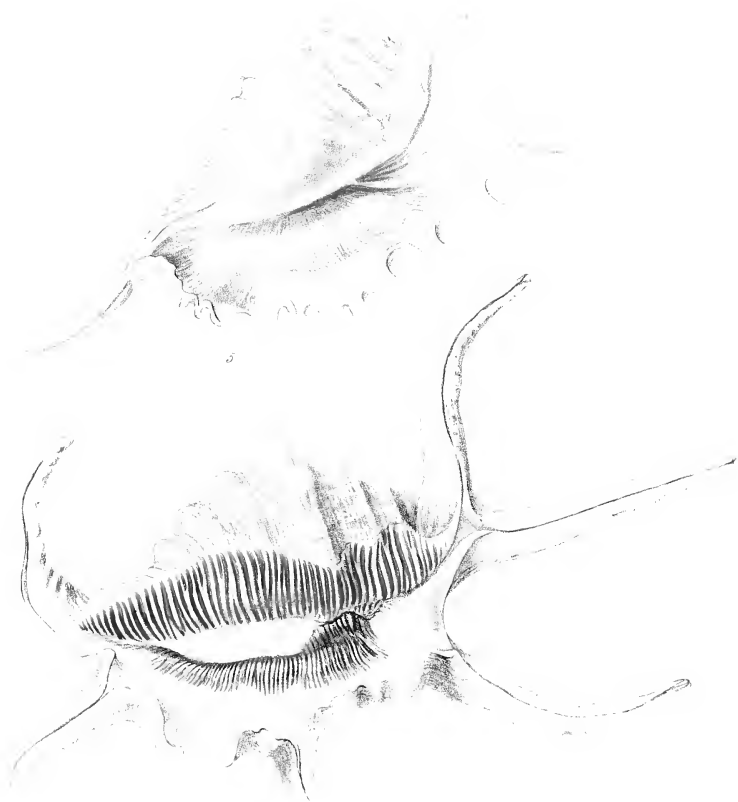
THE FALSE-SCORPION PTEROCERA. Shell ovately oblong, spire rather short, sharp at the apex, whorls encircled with fine raised striae, flatly slanting round the upper part, sharp and compressly noded at the angle, last whorl encircled with tuberos ribs, seven-clawed, claws obsolete noded, side claws curved, the two uppermost of the side claws approximating each other, posterior claw rather long, lip crested in front, columella and interior of the aperture densely and strongly wrinkled; whitish, marbled with chestnut-brown, columella and interior of the aperture deep brownish-purple, wrinkles white.

LAMAREK, *Anim. sans vert.* (Deshayes' edit.) vol. ix. p. 674.

Hol. Zanzibar, East Africa.

It is extremely doubtful whether this is anything more than a local variety of the foregoing species. It is uniformly of larger size, with the claws more prolonged and less noded. The hinder claw is especially elongated, and the two hinder side-claws are approximated both in Mr. Cuming's specimen and that in the British Museum.





PTEROCERA.

PLATE IV.

Species 5. (Mas. Cuming.)

PTEROCERA MULTIPES. *Pter. testā ovato-oblongā, spirā acuminatā, infractibus subtilissimè striatis, superis angulatis, ad angulata modulis, modis compressis, granulata angulibus, infracta illiam modis peranaplis, in Jeco testata, livis irregularibus, partem anclatis, columellā callisā, eia corrugatā, labro expanso, abscalytlo, dactylis subplanis, postico bi-trifido, aperturae fance furtilice et exherēniē subatā.* albida, ancasto-fuseo conspicuē maculatā et cillatā, aperturae fance alia, in profunde intusē infuscate-cubaca fiactā, columellā et labro aurgue areolato-fiacis.

THE MANY-FOOTED PTEROCERA. Shell ovately oblong, spire acuminate, whorls very finely striated, angled round the upper part, noduled at the angle, nodules compressed, gradually larger, last whorl with the nodules very large, ridged below, ridges irregular, partially noded, columella callous, scarcely wrinkled, lip expanded, ten-clawed, claws rather flattened, the posterior claw bifid or trifid, interior of the aperture strongly and very closely grooved, whitish, conspicuously spotted and filleted with light orange-brown, interior of the aperture white, in the depth deeply stained with reddish-violet, columella and border of the lip tinged with orange.

Stenobius multipes, Chemnitz, *Conch. Cal.* vol. x. p. 216 pl. 157, f. 1494-5.

Pterocera multipes, Deshayes

Pterocera millipeda, Lamarek

Pterocera cubaca, Swainson

Hab. East coast of Africa

This very delicate and pretty species may readily be distinguished from *P. millipeda*, with which it is confounded by Lamarek and Kiener

Species 6. (Mas. Cuming.)

PTEROCERA RUGOSA. *Pter. ovato-oblongā, spirā acuminatā, infractibus nodique subtiliter striatis, superis concavis, dorsal angulatis, ad angulata obsolete nodulis, infracta illiam costis nodulis circulatā, modis peranaplis, hexadactylis, dactylis longiusculis, excavatis, labro expansis, columellā ambique foveolice rugosā, aperturae fance subtiliter corrugatā.* albida, infuscate-fuseo maculatā, columellā et aperturae fance intusē purpureis, rugis albis.

THE WRINKLED PTEROCERA. Shell ovately oblong, spire acuminate, whorls finely striated throughout, concave round the upper part, then angled, absolutely noduled at the angle, last whorl encircled with noduled ribs, nodules very large, six-clawed, claws rather long, curved, broadly expanded, columella strongly wrinkled throughout, interior of the aperture finely wrinkled, whitish, spotted with reddish-brown, columella and interior of the aperture very dark purple, with the wrinkles white.

SOWERBY, *Thesaurus Conch.* Part 2, pl. 11, f. 9, 10.

Hab. Society Islands; Cuming.

Constantly distinguished from *P. chrysea*, with which it has been confounded, by its deep purple and white wrinkled columella





PTEROCERA.

PLATE V.

Species 7. (Mus. CUMING.)

PTEROCERA AURANTIA. *Pter. testa ovata, spirâ acuminatâ, asfractionibus subtiliter striatis, superâe convexo-declivibus, infractâe altius costis tuberculatis cingulata, heptadactylo, dactylis carceatis, lateraliibus brevisculis, cæteris prælongis, columellâ callosa, lævigatâ, aperturae fovee lævigatâ, albidi, rufescente-fusco tinctâ et maculatâ, columellâ et aperturae fovee intus aurantiis.*

THE ORANGE PTEROCERA. Shell ovate, spire acuminated, whorls finely striated, concavely slanting round the upper part, last whorl encircled with tubercled ribs, seven-clawed, claws curved, side claws rather short, the rest very long, columella callous, smooth, interior of the aperture smooth; whitish, stained and spotted with reddish-orange, columella and interior of the aperture very deep orange.

LAMARCK. *Anim. sans vert.* (DeShayes' edit.) vol. ix. p. 675.
Hab. Philippine Islands; Cuming.

This species is well distinguished from all others by its slender claws and deep orange colouring.

Species 8. (Mus. BRIT.)

PTEROCERA LAMBIS. *Pter. testa ovato-oblongâ, spirâ acuminatâ, asfractionibus subtiliter striatis, superâe convexâ, ad angulâe nodatis, infractâe altius fortiter tuberculatis, heptadactylo, dactylis unac brevisculis, unac elongatis, columellâ et aperturae fovee lævigatis; albidi, rufescente aut nigro-fusco maculatâ, columellâ et aperturae fovee pallide carceatis.*

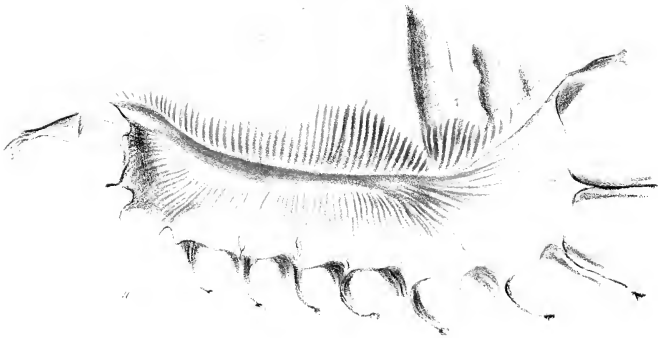
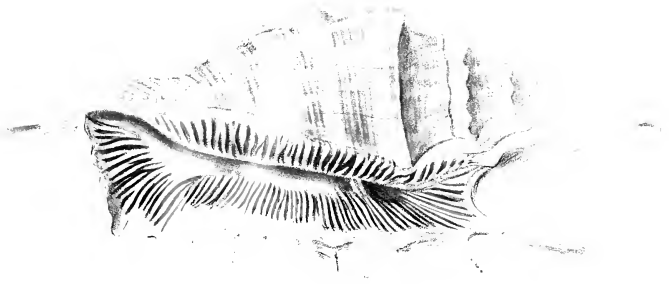
THE SPIDER PTEROCERA. Shell ovately oblong, spire acuminated, whorls finely striated, concave round the upper part, noduled at the angle, last whorl strongly tubercled, seven-fingered, fingers sometimes rather short, sometimes long, columella and interior of the aperture smooth; whitish, marbled with reddish or black-brown, columella and interior of the aperture pale flesh-colour.

Strombus lambis. Linnæus, *Syst. Nat.* (12th edit.) p. 1208.
Hab. Ceylon and Philippine Islands.

This well-known species inhabits the Eastern Seas in great abundance, of various sizes, rarely exceeding that of the specimen here figured!

February, 1851





PTEROCERA.

PLATE VI.

Species 9. (Mus. Cuming.)

PTEROCERA ELONGATA. *Pter. testâ elongato-ovato, spirâ annulato-turritâ, asfracibus nudique striatis, superâ rotule concavis, ad angulum compressè nodatis, asfracia altius unimaculylo, columella callosa, fortiter corrugata, labro plano-incurvato, dactylis brevibus, planatis, dactylo postico plerumque bifurcato, aperturae fauce densè et fortiter corrugatâ; albâ, aurantio-fusco profusè maculatâ, columellâ et aperturae fauce intusè purpureis, rugis albis, fauce in profundo cicatâ cravatâ.*

THE ELONGATED PTEROCERA. Shell elongately ovate, spire acuminately turreted, whorls striated throughout, very concave round the upper part, compressly noded at the angle, last whorl nine-clawed, columella callous, strongly wrinkled, lip flatly thickened, claws short, flattened, posterior claw generally bifurcate, interior of the aperture densely and strongly wrinkled; whitish, profusely marbled with orange-brown, columella and interior of the aperture deep purple, with the wrinkles white, depth of interior bright saffron-yellow.

SWAINSON, Exotic Conch. App. p. 32.

Pterocera nuxea dactylis instructus, Chemnitz.

Pterocera millepeda, pars, Lamarck

Pterocera caeca, Sowerby

Hab. —?

The principal characteristic of this species is the thickened festooned growth of the side claws, and the saffron-yellow colouring of the shell in its far interior. It

was first described and figured by Chemnitz, but he failed to name it in accordance with the recognized form of nomenclature founded by Linnæus.

Species 10. (Mus. Cuming.)

PTEROCERA MILLEPEDA. *Pter. testâ ovato-oblongâ, spirâ subobscureatâ, asfracibus nudique striatis, superâ concavis, ad angulum fortiter nodatis, nodis lamellosis, asfracia altius tuberculata, decimadactylo, columellâ et aperturae fauce nudique superficialiter rugosis, dactylis lateralibus brevibus, curvatis; albâ, aurantio-fusco tinctâ et sparsim maculatâ, columellâ et aperturae fauce fauce-purpureo-ventibus, rugis albicantibus.*

THE THOUSAND-FOOTED PTEROCERA. Shell ovately oblong, spire somewhat abbreviated, whorls striated throughout, concave round the upper part, strongly noded at the angle, nodules rather swollen, last whorl tubercled, ten-clawed, columella and interior of the aperture superficially wrinkled throughout, lateral claws short, curved; whitish, stained and partially spotted with orange-brown, columella and interior of the aperture smoky-purple, wrinkles whitish.

Strophis millepeda, Linnæus, Syst. Nat. (12th edit.) p. 120.

Pterocera millepeda, pars, Lamarck.

Hab. Philippine Islands (on the reefs at low water), Cuming.

The *P. mollis*, *elongata*, and *millepeda*, were all founded by Lamarck under one species.

MONOGRAPH

OF THE GENUS

R O S T E L L A R I A .

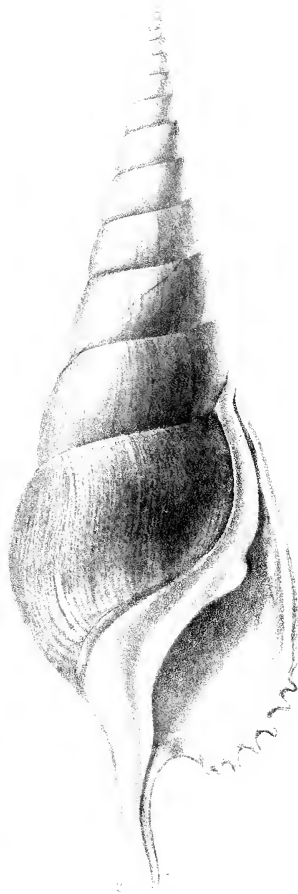
Lives there the man whose universal eye
Has swept at once the unbounded scheme of things,
Marked their dependence so, and firm accord,
As with unflinching accent to conclude
That this availeth nought?—*Thomson.*



1 a



1 b



2



3 a



3 b

ROSTELLARIA.

PLATE I.

Genus *ROSTELLARIA*, Lamarek.

Testa fusiformis, basi in canalem interdum gracillimanam et elongatam desinens, spirâ valde acuminatâ, anfractibus nunc levibus, nunc costatis aut sulcatis, labro auriculo-dentato, superne cancellulato-producto, interdum expanso et digitato. Operculum corneum, oblongum, angustum, medio costatum.

Shell fusiform, ending at the base in a canal, which is sometimes very long and slender, spire very much acuminated, whorls now smooth, now ribbed or grooved, lip prickly-dentate, canalliculately produced at the upper part, sometimes expanded and digitated. Operculum horny, oblong, narrow, ribbed down the middle.

The genus *Rostellaria*, which is here adopted provisionally in its Lamarekian form, under an impression that the species which have been detached from it are not yet satisfactorily understood, comprises three distinct groups. The first, which may be regarded as the type of the genus, includes *R. carciostrois*, *curta*, *fusus*, and *Povisii*. The shells are large and fusiform, with little sculpture, and have the lip conspicuously prickly dentated, and produced more or less over the penultimate whorl into a channel. The second form is represented by two species, *R. cancellata* and *crispata*, of very much smaller dimensions, in which the shell is of a different substance, and elaborately sculptured like the small Tritons. In these the lip is not dentated; it still rises up into a canal, after the manner of the typical *Rostellaria*, extending in one of the species nearly to the apex. The third form included under *Rostellaria* by Lamarek, comprises those species which have been separated by common consent, on account of a difference in the animal, under the title of *Aporrhais*. These are *R. pes-pelennii*, *pes-caribæis*, and *occidentalis*. In the first two species the lip is expanded into very prominent claws, in the last it is widely expanded but not clawed.

Professor E. Forbes proposes to associate the genus *Aporrhais* along with *Cerithium*, in a family, *Cerithiidae*, owing to certain corresponding features of the animal. This family he describes as being closely allied on the one hand to the *Terrilidae*, and on the other to the *Scalariidae*. It is not intended here to differ from so high an authority on living mollusca, not having adequate data for so doing, but it may be stated that all the observations derivable from the form, growth, and substance of the shells point to a different conclusion. The relationship

between *Aporrhais* and *Cerithium* he derives from a similarity between the animals, but it is very difficult to understand how two genera, whose shells in all the species are of so uniform and distinct a type, can be constructed by a similar animal. It is a remarkable feature in the shell of *Aporrhais* and of the family *Abata*, that a sudden departure from the spiral plan of convolution is given to the shell on arriving at maturity. This is not so in *Cerithium*, nor in any other genus of mollusks. Professor Forbes remarks that "the affinities of *Aporrhais* and *Cerithium* are very evident when we look at the young shells of the former." The same may be said of *Strombus* and *Conus*. The shells of many genera, far removed from each other, agree in their plan of convolution up to a certain age, yet differ widely before reaching maturity. The relationship between *Aporrhais* and the *Scalariidae* is said to be better traced in fossil than in living examples. In having recourse to the shell for this affinity, it should be borne in mind that the adult shell of *Scalaria*, throughout a hundred species, is of the simplest tubular form, and what is probably of more importance in reference to the animal, of a peculiar semi-transparent substance, mostly colourless. So far as regards the shell, *Scalaria* is peculiarly distinct in all respects from *Aporrhais*.

The typical species of *Rostellaria* inhabit the Red and China Seas, the second group is from the Philippine Islands, and the third inhabits the coasts of Europe and Newfoundland.

Species 1. (Mus. Cuming.)

ROSTELLARIA PES-CARBONIS. Testâ fusiformi, spirâ acuminato-turritâ, anfractibus transversim nudique conspicuè minute striatis, medio tumidis et exaristè obliquè plicatis, anfractu ultimo bi-tricarinate, coriois minute plicato-undatis, in aliam ventè quingueloclytana latè expansa; scapulliculo-albo, fuscocostæ parvula tincti.

THE CORMORANT'S FOOT ROSTELLARIA. Shell fusiform, spire acuminately turrited, whorls transversely conspicuously minutely striated throughout, swollen and delicately obliquely plicated round the middle, last whorl two-three-keeled, the keels being minutely plicately noduled, broadly expanded into a sharp five-clawed whorl; semi-transparent white, partially tinged with light brown.

March, 1851.

Aporrhais pes-carbonis, Brongniart, Terr. du Vincent, p. 75.
pl. t. f. 2

Rostellaria Serresiana, Michaud
Rostellaria pes-pellicani, var., Kiener.
Chenopus pes-carbonis, Deshayes.
Chenopus Serresianus, Philippi.

Hab. Zealand (at a depth of from seventy to a hundred fathoms); M'Andrew.

Distinguished mainly from *R. pes-pelecani* by its more slender and delicate growth, and in having an additional claw.

Species 2. (Mus. Cuming.)

ROSTELLARIA CURVIOSTRIS. *Rost. testâ fusiformi-turritâ, obesâ, ponderosâ, spirâ valdè acuminatâ, canaliculâ brevî, curvâ, asfracibus subplanatis, paucis priâis longitudinaliter costatis, cæteris lævibus, epidermide crassiusculâ indurâ, columellâ arcuatâ, callosâ, labro sex-septedentato, superâe conspicuè canaliculato-producto; fulco-fuscescente, columellâ et aperturae fauce albis.*

THE CURVED-BEAK ROSTELLARIA. Shell fusiformly turreted, stout, heavy, spire very much acuminated, canal short, curved, whorls rather flattened, a few early whorls longitudinally ribbed, the rest smooth, covered with a rather thick epidermis, columella arched, callous, lip six- to seven-dentate, conspicuously canaliculately produced above; light fulvous-brown, columella and interior of the aperture white.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. ix. p. 654.

Rostellaria brevis, Schumacher.
Rostellaria fusus, Sowerby.

Hab. Red Sea.

This well-known species, which is found in great abundance, is well characterized by its stout growth and curved canal.

Species 3. (Mus. Cuming.)

ROSTELLARIA PES-PELECANI. *Rost. testâ fusiformi, spirâ acuminato-turritâ, asfracibus transversim tenuistriatis, medio angulatis, ad angulum obliquè plicato-nodatis, suturis marginatis, asfracu ultimo tricarinato, carinis duabus centralibus prominentibus, obliquè plicato-nodatis, in alia quadridactylam expanso, dactylis incrassatis, acuminatis; albidâ, pallidè fulco lineatâ.*

THE PELICAN'S FOOT ROSTELLARIA. Shell fusiform, spire acuminately turreted, whorls transversely finely striated, angled in the middle, obliquely plicately noded at the angle, sutures margined, last whorl three-keeled, the two central keels being prominent and obliquely noded, expanded into a four-clawed wing, claws thickened, sharp-pointed; whitish, tinged with light fulvous colour.

Strombus pes-pelecani, Linnaeus, *Syst. Nat.* (12th edit.) p. 1207.

Rostellaria pes-pellicani, Lamarck.

Aporrhais quadrifidus, Da Costa.

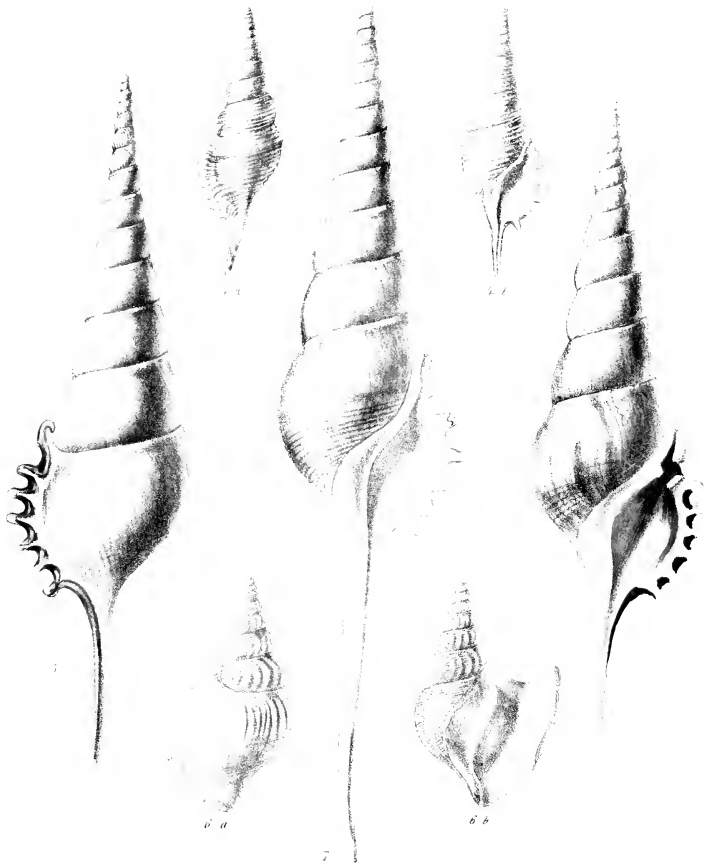
Tritoniana pes-pellicani, Müller.

Chenopus pes-pelecani, Philippi.

Aporrhais pes-pelecani, Swainson.

Hab. Coasts of Europe (from a depth of from four to a hundred fathoms); Forbes.

This species differs mainly from *R. pes-carbonis* in its more thickened solid growth, and in having one claw less.



ROSTELLARIA.

PLATE II.

Species 4. (Mus. Cuming.)

ROSTELLARIA POWISII. *Rost. testâ elongato-fusiformi, solidiusculâ, spirâ ralde acuminatâ, anfractibus planorotundatis, nudique spiritaliter creberrimè sulcatis, sulcis striis dense cancellatis, columellâ callosâ, canali brevissimâ, gracili, labro incrassato, quinque-dentato, dentibus mucronatis, superâe vic canaliculato-producto, aperturae fance contractâ; stramineo-favescente, columellâ labroque albis.*

POWIS'S ROSTELLARIA. Shell elongately fusiform, rather solid, spire very much acuminated, whorls flatly rounded, spirally very closely grooved, grooves densely cancellated with striae, columella callous, canal rather short, slender, lip thickened, five-toothed, teeth prickly, scarcely canaliculated produced at the upper part, interior of the aperture contracted; straw-tinted brown, lip and columella white.

PETT. *Magasin de Zoologie*, 1842, pl. 53.

Hab. China.

This interesting little species is very distinctly characterized in all respects. From the larger fusiform species of the genus it differs essentially in size and in being elaborately spirally grooved throughout.

Species 5. (Fig. a, b, and Fig. 7.)

ROSTELLARIA FUSUS. *Rost. testâ gracillimâ-fusiformi, spirâ ralde acuminatâ, anfractibus primis paucis convexis, longitudinaliter creberrimè tenuè costatis, cæteris laticibus, superâe convexo-declivibus, deinde rotundatis, anfractu ultimo basi sulcato, columellâ arcuatâ, callosâ, canali gracili, paulatim, aperturae parviusculâ, labro quinque-vel sex-dentato, dentibus prominentibus, labro superâe calloso, brevissimè canaliculato-producto et crispato; faveo-arcuatâ, labro interdum purpureo-nigrescente lineâ.*

THE SPINDLE ROSTELLARIA. Shell very slenderly fusiform, spire very much acuminated, the first few whorls convex and longitudinally very closely finely ribbed, the rest smooth, convexly slanting round the upper part, then rounded, last whorl grooved at the base, columella arched, callous, canal slender, very long, aperture rather small, lip five- to six-toothed, teeth prominent, lip callous at the upper part, very shortly canaliculated produced and curled; fulvous-orange, lip sometimes stained with blackish-purple.

Strombus fusus, Linnæus, *Syst. Nat.* (12th edit.) p. 1207.

Rostellaria fusus, De-Hayes.

Strombus elurus, Gmelin.

Strombus auroræis, Dillwyn.

Rostellaria subulata, Schumacher.

Rostellaria rectirostris, Lamarck.

Hab. China.

This elegantly-formed shell is of very rare occurrence in fine state, and has always been esteemed a choice species by the collector. Sir E. Belcher collected some thirty or forty specimens in the China Seas during the voyage of the *Samarang*, but they were all dead and more or less broken. The variety represented at Fig. 5, with a dark purple-black lip, is reported to have been collected at the Red Sea, and at Kurrahee, mouth of the Indus. It does not appear, on examination, to differ in any material character from the type of the species represented at Fig. 7. The canal of this purple-stained specimen is evidently broken at the extremity.

Species 6. (Mus. Cuming.)

ROSTELLARIA OCCIDENTALIS. *Rost. testâ fusiformi, spirâ lareâ, anfractibus convexis, primis paucis laticibus, cæteris concentricè plicato-costatis, anfractu ultimo tumidiusculo, transversim dense striato, in alia brevem siagulverâ latè expanso, columellâ arcuatâ, callosâ, aperturae subcontractâ; carulescente-albâ, pallide ferrugineo-lineâ.*

THE WESTERN ROSTELLARIA. Shell fusiform, spire turfed, whorls convex, the first few smooth, the rest concentrically plicately ribbed, last whorl rather swollen, transversely densely striated, broadly expanded into a short simple wing, columella arched, callous, aperture somewhat contracted; bluish-white, tinged with rust.

BECK. *Magasin de Zoologie*, 1836, pl. 72.

Hab. Banks of Newfoundland (found mostly in the stomach of fishes); Goulet.

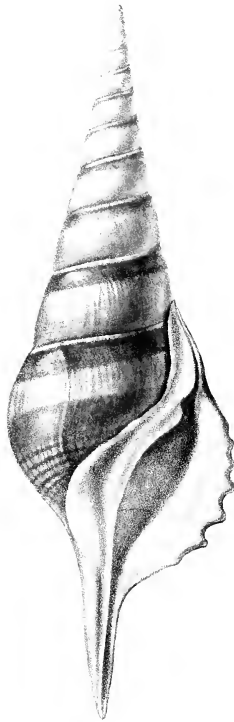
This interesting shell is intermediate in its characters between *Aporrhais* (*R. pes-pelecui*) and *Strombus*, and very much adds to the perplexity arising in the mind of the conchologist, out of the removal of the first-named genus, by Professor E. Forbes, to the family of *Cerithiidae*. It is to be hoped that the animal of this species may soon become known, and throw some light on this seeming anomaly.



9 a



9 b



9.



10 a



10 b

ROSTELLARIA.

PLATE III.

Species 8. (Mus. Cuming.)

ROSTELLARIA CRISPATA. *Rost. testâ fusiformi, crassiusculâ, spirâ acutâ, anfractibus rotundatis, bicaricosis, longitudinaliter crebricostatis, intersitiis liris parvis univariosis nitide cancellatis, columellâ rectâ, callisâ, labro calidè incrassato, cancellato, superâ eleganter crispato, apertura parvâ; glaucopriseâ, apertura fance castaneâ, columellâ labroque albidis.*

THE CURLED ROSTELLARIA. Shell fusiform, rather thick, spire sharp, whorls rounded, two-varicose, longitudinally closely ribbed, interstices neatly cancellated with numerous small ridges, columella straight, callous, lip very much thickened, cancellated, elegantly curled at the upper part, aperture small; glaucous-grey, interior of the aperture chestnut, lip and columella whitish.

Strobilus crispatus, Sowerby, *Thesaurus Couch.* p. 26. pl. 8. f. 62, 63.

Rostellaria crispata, Kiener.

Hab. Philippine Islands; Cuming, Belcher.

This interesting little species, very closely allied to *R. cancellata* in form and sculpture, is remarkably distinguished by the peculiar manner in which the sinuous production of the lip is suddenly curled backwards.

Species 9. (Mus. Cuming.)

ROSTELLARIA CURTA. *Rost. testâ fusiformi-acutâ, spirâ calidè acuminatâ, canali recto, anfractibus subplanatis, parvis primis longitudinaliter costatis, ceteris levibus, columellâ callisâ, labro quadri-vel quinque-dentato, superâ canaliculato-producto, canali breviusculo, sub-recurvo; fulco-fuscovirente, fasciâ latiusculâ pallidè castaneâ infra suturas, columellâ et apertura fance albis.*

THE SHORT ROSTELLARIA. Shell fusiformly turreted, spire very much acuminate, canal straight, whorls rather flattened, the first few whorls longitudinally ribbed, the rest smooth, columella callous, lip four- to five-dentate, canaliculate produced at the upper part, the canal being rather short and curved backwards; light fulvous-brown, with a rather broad pal-

che-tint band beneath the sutures, columella and interior of the aperture white.

SOWERBY, *Pro. Zool. Soc.* 1842.

Hab. — ?

The form of this shell is certainly distinct from any variety that I remember to have seen of *R. curvirostris*, from which it differs principally in the canal being straight. It is impossible to characterize the length of the canal, as it appears to have been filed at the extremity. The species has not been confirmed by the discovery of a second specimen.

Species 10. (Mus. Cuming.)

ROSTELLARIA CANCELLATA. *Rost. testâ fusiformi, crassiusculâ, spirâ acutâ, anfractibus subrotundatis, bicaricosis, longitudinaliter crebricostatis, intersitiis liris parvis univariosis nitide cancellatis, columellâ callisâ, leviter convexâ, labro incrassato, superâ apicem versus gracilè canaliculato-producto; glaucovirente-fuscâ, unguis parvis rubidis, fasciâ tinctâ, columellâ labroque albis, apertura fance pallidè castaneâ.*

THE CANCELLATED ROSTELLARIA. Shell fusiform, rather thick, spire sharp, whorls somewhat rounded, bivari-
cose, longitudinally closely ribbed, interstices neatly cancellated with numerous small ridges, columella callous, slightly recurved, lip thickened, slenderly canaliculate produced at the upper part towards the apex; light glaucous-brown, stained with bands of small red spots, lip and columella white, interior of the aperture light chestnut.

Strobilus cancellatus, Lamarek, *Anim. sans vert.* (Deshayes' edit.) vol. ix. p. 710.

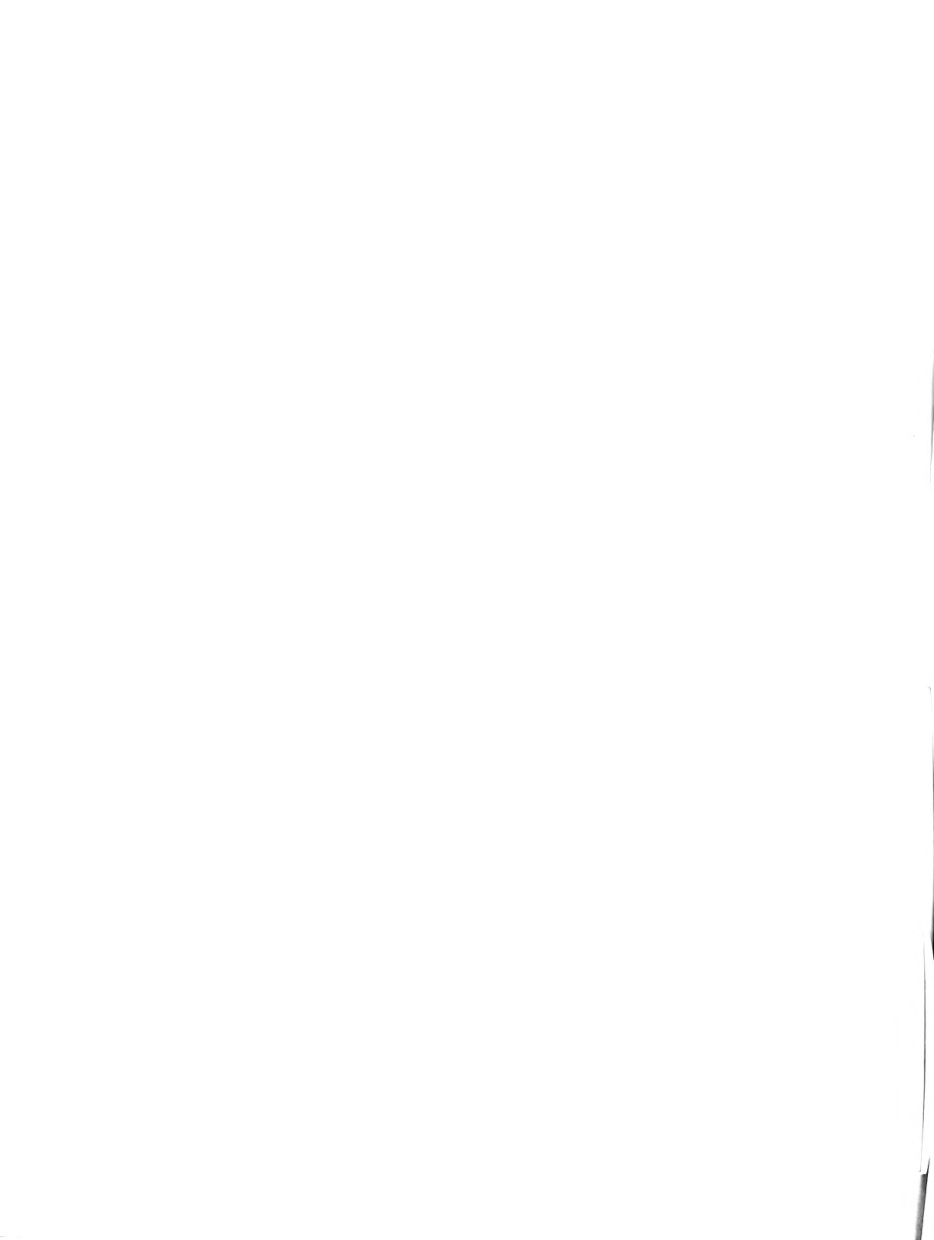
Rostellaria cancellata, Kiener.

Strobilus fissurella, Sowerby.

Hab. Philippine Islands; Cuming, Belcher.

This species is more attenuated and compressed than *S. crispatus*, and the channelled production of the lip, instead of being suddenly curled backwards on the penultimate whorl, is continued towards the apex over three or four whorls.

March, 1851.



MONOGRAPH

OF THE GENUS

STRUTHIOLARIA.

Search Nature's depths, and view her boundless store,
The secret cause in tuneful numbers sing.—*Yalden.*



1



2



3



4



5

STRUTHIOLARIA.

PLATE I.

Genus STRUTHIOLARIA, Lamarck.

Testa oblongo-ovalis, spiræ exertâ, anfractibus superius plus minus undoso-nugulatis, columellâ calidê callosâ, excavatâ, subtortuosâ, basi obtusè truncatâ, labro plerumque incrassato, peculiâriter sinuato.

Shell oblong-oval, spire exerted, whorls more or less nodosely angled round the upper part, columella very callous, excavated, slightly twisted, obtusely truncated at the base, lip generally thickened, peculiarly sinuated.

The genus *Struthiolaria*, which is intimately allied with *Strebosus* and *Rostellaria*, consists of four species only. They are limited to particular localities, and have been long known. Three inhabiting New Zealand, were named and figured by Martyn in 1784, and the fourth, from New Holland, was described by Lamarck. Owing to the difficulty of getting access to the work of the English conchologist, a great deal of confusion has arisen in the nomenclature of this genus. Chemnitz, however, had a copy of the work, and it is to be regretted that Martyn's specific names were not followed in the Conchylien Cabinet.

Species 1. (Mus. Cuning.)

STRUTHIOLARIA AUSTRALIS. *Struth. testâ ovali, ventricosa, spirâ turrâti, suturis interlinea simplicibus, interlinea cancellatis ad plenum excavatis, anfractibus truncatis striatis et superficialiter sulcatis, superius leviter declivibus, ad angulum minutè nodulatis, nodulis interlinea excavatis; albidi, foveole tinctâ et pallidè strigatâ, columellâ et labri limbo excavatis.*

THE AUSTRALIAN STRUTHIOLARIA. Shell ovate, ventricose, spire turreted, sutures sometimes simple, sometimes channelled or flatly excavated, whorls transversely striated and superficially grooved, gently slanting round the upper part, minutely noduled at the angle, nodules sometimes obsolete; whitish, stained and faintly streaked with light brown, columella and edge of the lip tinged with orange.

Morer Australis, Gmelin, Syst. Nat. p. 3342.

Struthiolaria crenulata, Lamarck.

Struthiolaria incrassata, Sowerby.

Struthiolaria verrucis, Deshayes.

Hab. Australia.

This species, first described by Gmelin, and the only one from Australia, is not the *Buccina verrucis* of Martyn, as supposed by M. Deshayes. It is uniformly of smaller size, the nodules are closer together, and in specimens at all larger than that in the accompanying plate, the nodules are generally obsolete. The shell figured by Martyn is much larger than the largest individual known of the species under consideration; it is, without doubt, an immature specimen of Mr. Sowerby's *Struthiolaria gigas*. In *S. crenulata* the sutures of the whorls are sometimes broadly channelled throughout.

Species 2. (Mus. Cuning.)

STRUTHIOLARIA SCUTULATA. *Struth. testâ orato-concava, crassâ, ponderosâ, spirâ exertâ, suturis calidê callosis, anfractibus superius declivibus, deinde obtusè bicaratis, apicem versus minutè nodulis, columellâ callosâ, apertura parvâ, labro simplici; foveolo-spandiceâ, limbo tenibus foveis longitudinaliter flexuoso-strigatâ, callositate suturâli albidâ.*

THE COBWEB-MARKED STRUTHIOLARIA. Shell ovately conical, thick, ponderous, spire exerted, sutures very callous, whorls slanting round the upper part, then obscurely two-keeled, minutely noduled towards the apex, columella callous, aperture small, lip simple, yellowish fawn-colour, longitudinally flexuously streaked with fine brown lines, sutural callosity white.

Buccina scutulata, Martyn, Universal Conchologist, vol. ii. pl. 55.

Struthiolaria scutulata, Deshayes.

Struthiolaria obliqua, Sowerby.

Hab. New Zealand.

Distinguished by its solid enamelled growth, and simple lip, and by the sutures of the spire being filled with callosity. The painting consists of numerous flexuous hair-lines. Chemnitz's figure of this species appears to be a copy of that of Martyn.

Species 3. (Mus. Cuning.)

STRUTHIOLARIA PAPULOSA. *Struth. testâ pyramidalicoxatâ, spirâ subexertâ, anfractibus nudique testâ et cereberrimè sulcatis et striatis, superius convexo-declivibus, acutè angulatis, ad angulum muricato-nodulatis.*

March, 1851.

Struthiolaria papulosa, Sowerby, *Journal of the Geological Society*, vol. 1, p. 10, pl. 1, fig. 1.

THE COMMON STRUTHIOLARIA. Shell pyramidally ovate, spire somewhat truncated, whorls finely and very closely grooved and striated throughout, concavely striated round the upper part, sharply angled, prickly noduled at the angle, lip and columella callosities fawn-colour, longitudinally finely streaked here and there with brown.

Struthiolaria papulosa, Martyn, *Universal Conchologist*, vol. ii, pl. 51.

Murex pes struthiolarie, Chemnitz.

Murex struthiolaris, Gmelin.

Struthiolaria nodulosa, Lamarek.

Struthiolaria struthiolaris, Sowerby.

Hab. New Zealand: W. Mantell.

This well-known species, the most abundant of the genus, is well distinguished by its numerous grooves and striae, and by its prominent sharp nodules.

SPECIES 1. (Mus. Cuming)

STRUTHIOLARIA VERMIS. *Struth. testâ pyramidalis-ovata, crassiusculâ, spira suturis subcuneolatis, anfractibus*

transversa striatis et punctatis, stria alternantibus irregularibus, siccâ declivibus, cirâ angulatis, ad angulâ nodulis, nodis parvis, subdistansibus, columella labraque callosi incrassatis; sordide fulvâ, foveis pulvis stigmatâ, nodis albidis.

THE WORM STRUTHIOLARIA. Shell pyramidally ovate, rather thick, sutures of the spire slightly channelled, whorls transversely striated and grooved, striae alternately larger, rather irregular, slanting round the upper part, slightly angled, noduled at the angle, nodules small and rather distant, lip and columella very much thickened; dirty fulvous colour, faintly streaked with brown, nodules white.

Buccinaa retata, Martyn, *Universal Conchologist*, vol. ii, pl. 53.

Struthiolaria gigas, Sowerby.

Struthiolaria papulosa, Deshayes.

Hab. New Zealand.

This fine species differs principally from the more common *S. papulosa*, in being less sharply angled, and in the nodules being smaller and more distant from each other, in the sutures being slightly channelled, in the striae being alternately larger and smaller, and in the very solid thickening of the lip.





